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A. Accounting Education
B. Auditing (including internal auditing, governance and ethics)
C. Financial Accounting (including all forms of corporate reporting)
D. Management accounting and finance
E. Taxation

The refereed papers included in the conference proceedings were accepted after a double blind peer reviewed process.

PART A - ACCOUNTING EDUCATION

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EDU001 Towards creating a flipped classroom: A pilot study of students' perceptions of podcasts as a learning tool in large undergraduate taxation classes

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Abstract

Purpose: The purpose of this study is to determine the perceptions of higher education taxation students in South Africa (a developing country); on the use of podcasts as a revision tool in a blended learning environment towards creating a flipped classroom learning strategy.

Design/methodology/approach: The researchers made use of an action research methodology, collecting student feedback from 1084 second year taxation students by means of a structured online questionnaire.

Findings: 75% of respondents indicated that podcasts are a helpful learning tool when utilised as a revision tool. After being exposed to podcasts as a lecture replacement tool (and not a revision tool) to create a flipped classroom environment, 48% of respondents indicated that a flipped classroom would be the ideal learning environment. 37% of respondents did not agree with this statement. The researchers concluded from the pilot study that students perceive podcast to be valuable learning tools, and that they are ready for a flipped classroom environment.

Keywords: flipped classroom, higher education, podcasts, blended learning, ICT, e-learning, revision tools.

BACKGROUND

Over the past few years, emphasis has been placed on the shift from a traditional teaching and learning model to a culture of facilitative learning that parallels a post-millennial social world in which new combinations of creative skills and abilities are increasingly in demand (McWilliam, 2008; Clark & White, 2010:116). Traditional teaching and learning leaned towards preparing students for the 20th century work culture, which focused on accessing information and using it to solve relatively predictable problems or complete routine transactions. Research done by social commentators on workplace and social futures (Cunningham 2006; Pink 2005; Clark & White, 2010:116) conclude that university graduates entering the work force in the 21st century will be performing work that is much less focused on routine information seeking, transactions and problem solving. The work will focus on forging relationships, tackling novel challenges and synthesising „big-picture" scenarios.

Higher Education Institutions encourage the use of alternative methods of facilitating learning with the aim of preparing graduates for the contemporary work culture, as can be seen from a commitment by the University of Pretoria to scholarly teaching, recognising that the act of teaching involves more than the transmission of facts or the transfer of knowledge (University of Pretoria, 2010). Likewise, accounting education in recent years has emphasised the need for developing generic competencies and, to this end, has advocated various teaching and learning methods other than the traditional lecture format (Boritz & Carnaghan, 2003; Eisner, 2004:61). However, the mainstream teaching and learning methods in undergraduate taxation and accounting are still very much focused on a 20th century work environment (McWilliam, 2008; Miller & Woods, 2000). It is therefore necessary to shift the boundaries of traditional teaching methods in order to parallel the changes taking place in the work culture.

Taxation educators have the particularly daunting task of juggling the diverse expectations of the different stakeholders; when it comes to equipping taxation graduates for the world of work in the

21st century. Taxation educators must adhere to the requirements of professional bodies such as the South African Institute of Tax Professionals (SAIT) and the South African Institute of Chartered Accountants (SAICA), who prescribe a vast body of technical content in order for higher education institutions to gain accreditation for their professional qualifications (SAICA, not dated; SAIT, not dated). Higher education institutions are constantly striving to either become accredited or to remain accredited, which leads to curriculum overload, and teaching with a technical focus. In comparison, future employers require graduates to have certain soft skills in addition to having mastered the vast technical knowledge prescribed by professional bodies (Barac, 2009; Doman & Nienaber, 2012), making educators responsible to accomplish the difficult task of meeting both groups of stakeholder requirements, with limited „in class/contact time" to do so. In order for educators to meet the demands of both stakeholders, innovative ways to utilise „in class/contact time" must be explored.

Research on teaching and learning suggests various ways in which educators can move to a culture of facilitation of learning. These include various references to the use of technology to create a blended learning environment focussed on a student centred teaching approach (Garrison & Kanuka, 2004). The principle of student centred teaching is explained eloquently by L. Dee Fink in his book on creating significant learning experiences. He urges teachers to shift from a content centred approach to a learning centred approach that asks "What kinds of learning will be significant for students, and how can I create a course that will result in that kind of learning?" (Fink, 2003) .This study is a pilot study as part of a larger project to focus on the implementation of technology in a blended learning environment towards creating a flipped classroom. A flipped classroom approach entails that students use their own time to work through theoretical content and the „in class room/contact time‟ is utilised by educators to synthesise information, make the theoretical work practical and create bigger picture scenarios (Bergmann & Sams, 2012). Creating a flipped classroom would assist educators to create time to facilitate the type of skills required by the 21st century working environment.

From the above, evidently the problem is that taxation educators are confronted with the challenge to utilise „in class/contact time‟ in a more efficient and innovative manner in order to create a blended-, student centred learning environment that will address the needs of the all the different stakeholders, namely student body, professional bodies and future employers.

This study forms part of a larger research project that aims to create a flipped classroom in order to address the above challenge faced by lecturers. However, the specific aim of this pilot study is to investigate student‟s perceptions of the integration of podcasts as a revision tool, in facilitating learning as part of a blended- student centred learning environment.

This study does therefore not create a flipped classroom, but rather gathers data on the integration of ICT (specifically podcasts as a revision tool) into the learning environment that will inform the researchers on student‟s perceptions off such integration and ultimately their perceptions on a flipped classroom learning environment. The study is based on an actions research methodology and was performed with a group of students in an undergraduate taxation module, at a higher education institution in a developing country.

The study has the following general research objective:

- To determine students‟ perceptions of the helpfulness of podcasts as a tool towards creating a flipped classroom in future, as part of a blended- student centred learning environment at a higher education institution in a developing country.

The study has the following specific research objective:

- To determine students‟ perceptions of the helpfulness of podcasts as a revision tool in creating a blended, student centred learning environment at a higher education institution in a developing country.

The article starts with a literature review in order to substantiate the problem faced by lecturers to utilise „in class/contact time" in a more efficient and innovative manner, followed by a description of the action research methodology and data analysis.

LITERATURE REVIEW

Bill Gates, the chairman of Microsoft, the world"s largest personal-computer software company, sketched out his vision of what schools in future would be like; that learners would watch lectures and video lessons on their own while using the classroom time for discussion and problem solving (Heilesen, 2010:1063).

Bill Gates" vision might just be the answer to the universal call for innovation in education which has been the topic of many studies over the years (Garrison & Kanuka, 2004). This vision also takes cognisance of the fact that the mere transfer of information, does not mean that the recipient has constructed knowledge. This vision allows for classroom time to be used to develop skills required of 21st century students.

Today, the pedagogical value of podcasts as a mobile/blended/e- learning strategy is well established at higher education institutions in many first world countries such as the United States of America, the United Kingdom and Asia Pacific, but there exists little research on the effectiveness of podcast as one of the learning strategies in a blended learning environment in developing countries such as South Africa (Mungwanya, Marsden & Boteng, 2011:268).

The literature review discuss the stakeholder requirements relating to a call for change in taxation education, focussing on the requirements of future employers, professional bodies and students as identified in prior literature. The educator"s responsibility to react to these stakeholder requirements is discussed in the next section. This is followed by a description of a blended learning environment, specifically podcasts towards creating a flipped classroom approach to teaching and learning, as a tool for educators to respond to stakeholder requirements.

STAKEHOLDER REQUIREMENTS

In line with the universal call for innovation in education, South African taxation educators in particular are experiencing pressure to be innovative in their education strategies (De Wet and Van Niekerk, 2001). The increased pressure can be attributed to the fact that the different stakeholders require different sets of skills from taxation graduates; but educators have limited „in classroom / contact time" to equip the graduates for these opposing demands (Doman & Nienaber, 2012). In order for educators to succeed in meeting these opposing stakeholder demands, innovation in education is key. Future employers, professional bodies and students have been identified as the main stakeholders.

Future Employers

In order to face the unique challenges in the 21st century work environment, employers are looking for a new kind of „professional" as a product of the university system. This „new" graduate must not only display technical competencies but should also prove to be an asset to any business; owing to numerous pervasive (all-encompassing) competencies he or she may have acquired (Miller & Woods, 2000). Employers in the accounting and taxation profession are no exception (Barac, 2009; Coetzee & Oberholzer, 2009; De Wet and Van Niekerk, 2001, Gammie, Gammie & Cargill, 2002; Howieson, 2003; McCarthy & McCarthy, 2006:202).

Over the years, the taxation landscape has changed significantly. These changes can be attributed to the fact that the South African taxation system has become more and more complex (Bendel, 2005), combined with the fact that the business environment is ever changing (Barac, 2009:19). These constant changes create the need for today's taxation professionals to be generalists with specialist knowledge. Employers on the one hand call for graduates to have generic skills that will allow them to adapt to the constant and rapid changes in the business environment. On the other hand employers require these same graduates to be technical specialists (Research Focus, 2009). According to research conducted by Doman and Nienaber (2012:952,960) South African employers are dissatisfied with the level of soft skills that taxation graduates have acquired upon leaving university.

These conflicting requirements from future employers leave taxation educators with the difficult task to utilise the limited „in classroom/contact time" in such a way that graduates acquire the different sets of skills to meet the demands of these future employers.

Professional Bodies

Future employers are not the only group of stakeholders whose demands educators should consider. Professional bodies such as SAICA and SAIT and the accreditation requirements of these bodies greatly impact taxation curricula (De Villiers & Venter, 2010, De Wet and Van Niekerk, 2001).

Professional bodies and SAICA in particular contribute to South African higher education institutions in a positive manner, by means of providing resources. However, research conducted by De Villiers and Venter (2010) concludes that professional bodies also have a negative impact on taxation academy through exerting different mechanisms of influence. The two mechanisms affecting taxation education in particular are the effect of the accreditation process, and performance in the Initial Test of Competence.

The effect of these mechanisms leads to teaching with a technical focus without links to the social implications and one only has to consider the vast body of knowledge prescribed by professional bodies, to conclude that this group of stakeholders favour technical skills (De Villiers & Venter, 2010:21). Despite De Villiers and Venter (2010) establishing that meeting stakeholder demands are in some instances to the detriment of the educational discipline, in the South African situation accreditation with professional bodies is still considered to be of the utmost importance.

Taxation education in South Africa is therefore still very technically focused, not leaving enough „in class/contact time" to focus on the skill set needed to meet the demands of future employers, or to consider the needs of students.

Students

The current students enrolled at higher education institutions form part of a generation referred to in many different terms. Some call them 21st Century Learners or Millennials; others refer to them as Digital Natives or the Net Generation. Although there are some opposing opinions as to the specific year, the majority claim that this generation includes individuals born after 1982 (Bullen, Morgan, & Quayyum, 2001; Sandeen, 2008:17). Higher education institutions should take cognisance of this generation and their learning preferences, as they constitute the majority of the students sitting in classes today.

There are two very distinct schools of thought on the characteristics of this generation, specifically in terms of their use of information and communication technologies (ICT) and education. The one school claims that the current students in higher education differ significantly from those whom the current education system was designed for. These studies claim that the reason for the differences between generations is the fact that these individuals have been immerged in technology their entire lives. They have been using the tools of the digital age, such as computers, videogames, digital music players, video cameras, cell phones, etc, for as long as they can remember, and not just for leisure, but also for educational purposes (Prensky, 2001:1). These individuals have different social characteristics, ways of using information and constructing knowledge, as well as different expectations about life and learning (Bullen et al., 2001). Prensky (2001) goes as far as to claim that because of the high use of ICT these individuals" brain structure has physically changed. This generation's individuals are likely to favour distance learning formats but might continue to be educated in the traditional format due to their previous experience. They may favour education by means of wireless devices and expect customisation and personalisation when it comes to learning opportunities. They also expect 24/7 access to instructions and student services (Sandeen, 2008:22).

However, there are some studies which contradict the notion that there are significant differences in the behavioural characteristics, including the way they use ICT, between this generation and other generations. These studies warn educators not to make educational strategy decisions based on the assumption that all learners from this specific generation have homogeneous characteristics that vary significantly from other generations (Bullen, Morgan, & Quayyum, 2001).

It is important for higher education institutions to establish what the roles of the educators are in order to meet the demands of the various stakeholders, including the students they educate.

Educators' Responsibility

Higher education institutions in South Africa have the obligation to deliver graduates with the necessary skills and knowledge to enter the job market (Research focus, 2009) and these institutions must proactively identify the demands and needs of employers and must proactively adapt or change curricula to produce the desired products to meet these demands (Geyser, 2004:142).

Sandeen (2008:22) states that educators would also do well to follow student trends and to change even more quickly than is currently the case, in order to keep up with student expectations. This is supported by Prensky (2001:6) stating that *"We need to invent Digital Native methodologies for all subjects, at all levels, using our students to guide us… if Digital Immigrant educators really want to reach Digital Natives – i.e. all their students – they will have to change. It's high time for them to stop their grousing and, as the Nike motto of the Digital Native generation says, "Just do it!"*

However, there have been some studies disagreeing with the fact that it is a case of "just doing it". These researchers warn educators not to assume that student‟s competence in using technology in their everyday lives necessarily imply that they can transfer those same skills to learning activities. The mere fact that these students belong to this generation will not be the deciding factor in their implementation of technology in learning. Pedagogy and teaching models will have a greater influence on the use of technology in learning, than merely being part of a specific generation (Gros, Garcia, & Escofet, 2012).

This notion is supported by Bullen et al., (2001), stating that there is insufficient empirical support to his claim that individuals born in this generation differ significantly from other generations in terms of characteristics. Bullen et al., (2001) does however add to the vast body of knowledge stating that the use of ICT by individuals from this generation is a certainty and a reality that educators must take into consideration. The researchers do however caution against making institution wide ICT implementations decisions, but urges institutions to consider it per programme after gaining an understanding of the social and educational uses of ICTs in higher education.

In order for educators to equip graduates to meet employers‟ expectations in terms of soft skills as well as meeting professional bodies‟ requirements for technical ability, they will have to be innovative in the way they utilise „in classroom / contact time‟. Although educators are aware of the demand for innovation in education, when looking at the taxation discipline in particular, educators do not have control over all components of the curriculum and can therefore only bring about changes to the components which are fully under their control. As indicated in the table below, educational curriculum can be divided into three different components: content, content delivery and institutional support structures (Research Focus, 2009).

Table 1: Elements of an Educational Curriculum

Content	That which needs to be mastered	This includes: underlying values, content choice, classifications, subdivisions and implicit skills and processes.
	Expected outcomes	A comprehensive understanding that takes into account the aims and the objectives of the learner.
Content	Assessment	Methods, criteria for assessment, adaptations, as well as extent of the measures and implicit potential social impact.
	Underlying philosophy	The approach to the facilitation of learning (teaching approaches) with implicit relationships between stakeholders within the learning environment.
Institutional	Servicing and provision	Organisation of learner activities, time, place and provision of the required media. (If assumed, also think about learner support.)
	Accountability	Accountability to persons, institutions and interest groups who are served. This includes accountability to the population, communities and the economy in terms of the mandate given.

Only one of the three components of Educational Curriculum resides under educators‟ control. Due to the accreditation requirements of professional bodies, taxation educators do not have control over „content‟, as this component is prescribed by the professional bodies. The „institutional support structures‟ component is the responsibility of the higher education institutions and therefore also not under educators‟ control.

The „content delivery‟ component is however under educators‟ control and it has been advocated by numerous researchers that educators can create a student centred learning environment by delivering content through a blended learning approach (Aliotta, Bates, Brunton, & Stevens, 2008; Cane and Cashmore, 2008; Chan and Lee, 2005; Draper and Maguire, 2007; Lazzari, 2009; Stewart and Doolan, 2008).

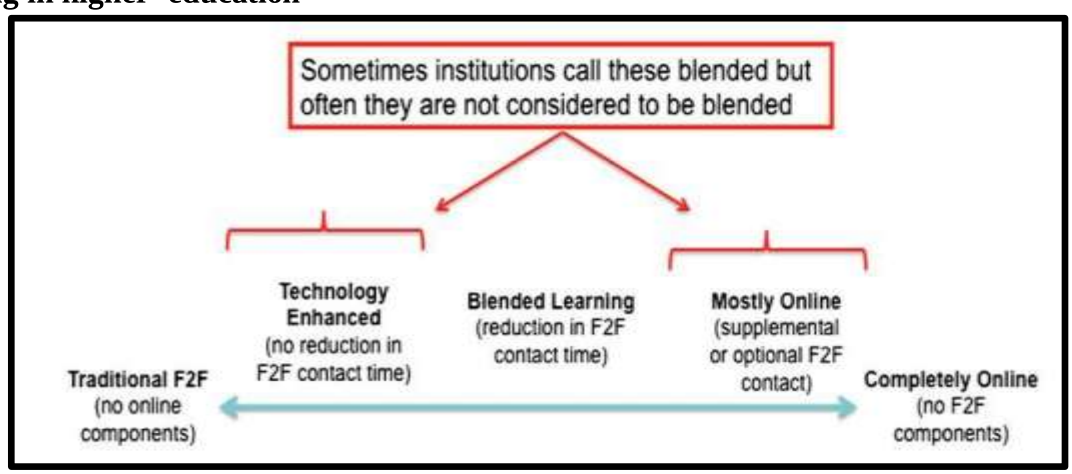
Blended Learning (ICT in Curriculum)

Introducing technology (ICT) into the curriculum can improve the quality of education (Talebian, Mohammadi and Rezvanfar, 2014:302). However, educators should not assume that all ICT integration will necessarily be an improvement merely because the current generation are digitally literate. The educational effectiveness of ICT depends on how these technologies are used, and for what purposes they are used (Talebian, et al, 2014:302, Weil, Da Silva, and Ward, 2014).

Garrison and Kanuka (2004) reviewed a number of studies dealing with ICT integration, and they concluded that student performance either improved or remained the same after being exposed to a blended learning environment. In its simplest form, blended learning is about integrating face-to- face learning experiences with online learning experiences. It is an education strategy that effectively integrates the strengths of both components (face-to-face as well as online) and it is not merely adding the one component to the already dominant other.

"Blended learning is both simple and complex." (Garrison & Kanuka, 2004:96). It is complex in the sense that no two blended learning environments are identical. Each blended learning environment is fundamentally redesigned and reconceptualised in terms of the teaching and learning dynamic (e.g., discipline, developmental level and resources). It is not simply about finding the right mix of technologies and it is not just about delivering old content in a new way (Garrison & Kanuka, 2004). Graham, Woodfield and Harrison (2013), compiled the following framework (Figure 1) to explain the concept of blended learning.

Figure 1: A framework for institutional adoption and implementation of blended learning in higher education



There are many tools that an educator can choose from to incorporate technology into the curriculum in order to create a blended learning approach. Examples of these tools include the use of podcasts, vodcasts, videos, interactive gaming (Graham, et al., 2013). Podcasts was selected as a content delivery tool for purposes of this study.

The use of Podcasts to Create a Blended Learning Environment

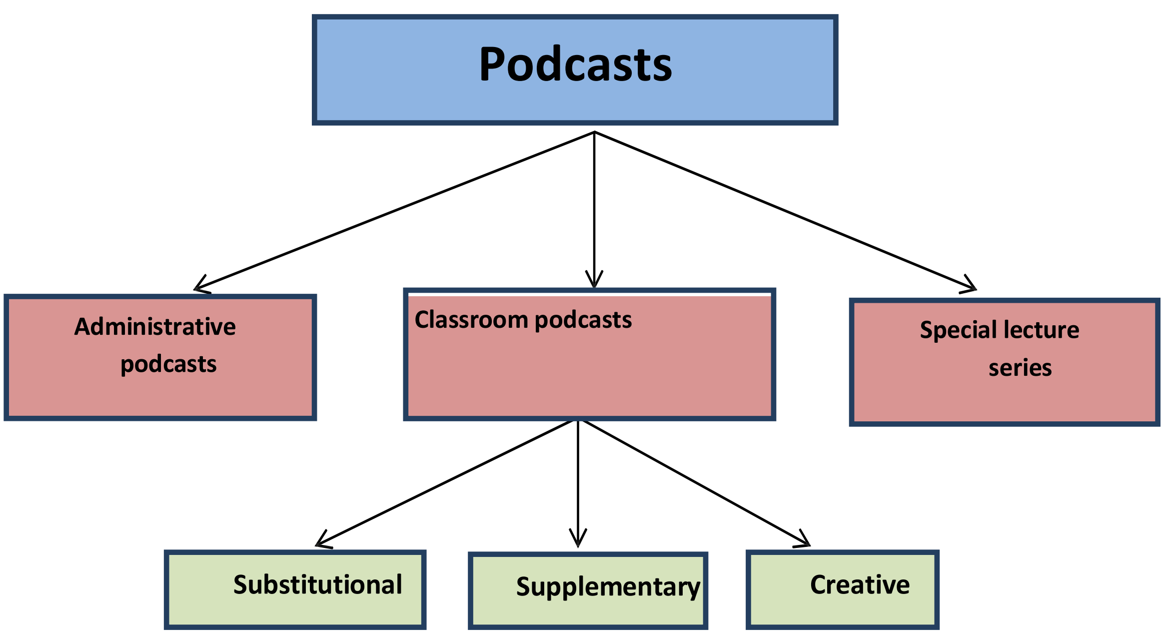
The term podcasting was coined in 2004 and resulted as a combination of the words "broadcasting" and "iPod" (Tynan & Colban, 2006). Vogele and Gard (2007) distinguish between three categories of podcasts:

- Administrative podcasts (e.g. general information, guides)
- Special lecture series (guest lectures, commencement lectures, etc.)
- Classroom podcasts (anything involving curriculum)

As can be seen in figure 2 below, classroom podcasts can once again be divided into three sub- categories:

- Substitutional (e.g. documenting or substituting classroom teaching)
- Supplementary (e.g. providing summaries of classroom teaching)
- Creative (e.g. production by learners)

Figure 2: Podcasts: the Different Categories



Although there are numerous specific uses for podcasts such as autocasting, blogcasting, learncasting, mobilecasting, peercasting, podstreaming, and vodcasting (Tynan & Colbran, 2006:825), the focus of this study is on supplementary podcasts to be used as a revision tool, towards creating substitutional podcasts and a flipped classroom learning environment in the future.

Heilesen (2010:1063) reviewed an extensive body of literature on podcasts published from 2004- 2009 and these studies conclude that, when measuring only learner performance, indicators are weak that podcasts are efficient. He does however state that no studies have indicated that podcasts have a negative impact on learning. There are also a number of studies which concluded no effect or an inconclusive effect on learner performance; and a number of studies concluding a positive effect on learner performance.

Although many studies do not specifically conclude an increase in learner performance, learners often indicate that they feel better about a subject where podcasts are provided as it has a positive impact on their learning environment, even if it does not improve their performance.

These studies were all conducted at developed at higher education institutions in developed countries and research with regards to the implementation of podcasts in courses presented by higher education institutions in developing countries such as South Africa are lacking.

If educators focus on innovative ways to introduce a blended learning environment, by for example, using a tool like podcasts, they may be able to move towards a flipped classroom approach to create ways to facilitate a learner centred learning approach in order to meet the various stakeholder demands.

THE FLIPPED CLASSROOM

Jonathan Bergmann and Aaron Sams (not dated) are the founders of the "flipped classroom". They state that it started off with a simple observation that learners needed their facilitators present not to deliver content, but rather when learners were answering difficult questions or got stuck on an assignment. From this observation, Bergmann and Sams started what they referred to as the flipped classroom.

They describe a flipped classroom as "an intentional shift of content which in turn helps move students back to the centre of learning rather than the products of schooling". Their method entails actively transferring the responsibility and ownership of learning to the learner by flipping the instructional process. There is an intentional time shift of the information delivery which happens outside the classroom with the intention to open up „in-class/contact time" to be utilised more effectively (Bergmann & Sams, not dated).

CONCLUSION

The universal call for innovation in education combined with the specific circumstances created by the needs of the different stakeholders in the South African taxation education environment, have left South African taxation educators with the very difficult task of preparing students not only for the 21st century work environment, but also to meet the opposing demands of these stakeholders.

Educators should also be aware of the specific characteristics of the current generation of students, especially pertaining to their high use of ICT when planning the specific learning strategy. A blended learning strategy, making use of podcasts as a revision tool toward creating a flipped classroom is proposed as a way to create a student centred learning environment in an attempt to deliver graduates who meet stakeholder expectations.

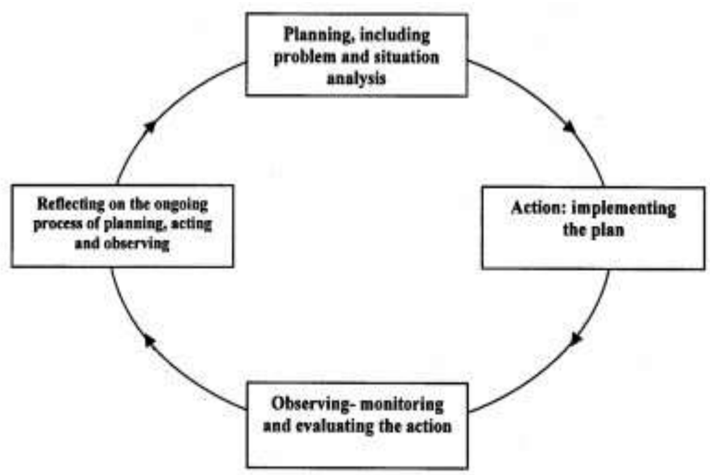
RESEARCH METHODOLOGY

The research methodology applied to this empirical study was action research. Data was gathered by means of a descriptive survey, collecting qualitative data substantiated by quantitative data from a sample of undergraduate taxation students who were exposed to the use of podcasts as part of a blended learning environment towards creating a flipped classroom (Complete questionnaire included as Appendix 1).

Action research was considered to be the most appropriate research design as it is a process that promotes professional development and evaluation of innovative teaching strategies in order to solve problems encountered by educators (McNiff & Whitehead, 2006). Educational action research is one of the main streams of action research as a whole (O"Brien, 2001). It can be defined as any systematic inquiry conducted by researchers into the teaching and learning environment to gather information on how their particular environment operates, how they teach and how well their students learn. It is a reflective process that allows for inquiry and discussion to be components of the research. Information is gathered with the aim of gaining insights, developing reflective practice, effecting positive change in the educational environment and improving student learning (Ferrance, 2000). Action research is conducted in the natural setting in which the problem is encountered, and is an informal, qualitative, interpretive, reflective and experimental methodology that requires all the participants to be collaborative researchers (O"Brien, 2001). Since the research reported is about implementing an innovative idea, the approach is asset-based (Du Toit, 2009). An asset-based approach to action research shifts the focus from problems experienced (a deficit approach) to an approach where innovative ideas could be implemented by academic staff in order to transform their practice.

Action research is an overarching design that incorporates a cyclical process (also referred to as a spiral) consisting of several iterations of action research cycles (McNiff & Whitehead, 2006). Two cycles were executed and reported on in this research. Figure 3 illustrates the action research process followed:

Figure 3: Action Research Diagram



The following section explains the action research cycles and provides a descriptive analysis of the data obtained from the student sample.

Action Research Cycle 1

The first cycle of the action research study consisted of an investigation of podcasts as a revision tool in an undergraduate taxation module at a higher education institution in a developing country with a focus on creating a learner-centred, blended learning environment.

The researchers specifically focused on the supplementary use of podcasts as a revision tool in order to introduce podcasts as part of a blended learning environment towards creating a flipped classroom in future. Podcasts were introduced into the learning environment as an innovative way to address the challenges faced by educators to use „in classroom / contact time‟ more effectively, in order to meet the demands of the various stakeholders as discussed above.

Planning the initiative*:*

The planning phase commenced by clearly defining the use of podcasts as an innovative facilitation of learning strategy. It was very important to define a clear strategy as there are multiple educational uses of podcasts.

Taking into consideration the results of the study on lecture podcasts conducted at the University of Cape Town (Mugwanya et al, 2011), and the fact that this study was conducted at a contact university in South Africa, a developing county, the use of supportive podcasts specifically as a revision tool as opposed to the more commonly used substitutional podcasts, was selected as the most beneficial strategy for the first cycle of implementation.

The researchers considered the scope of the upcoming tests at that stage and based on experience as well as peer discussions with a university colleague at another institution, identified six concepts from the technical content that learners generally struggle with. The podcasts were created as a revision tool and not as a lecture replacement tool, and therefore only made available to the students after the topics were dealt with during the lectures.

Despite the researchers being aware that vodcasts (audio and visual file) would benefit learners more than podcasts (audio file), due to the 21st century learners‟ visual preference for learning (Prensky, 2003), the researchers had time and financial constraints and elected to implement podcasts. Creating podcasts had no financial implications and limited time implications, whereas creating vodcasts would require special equipment, or the booking of a studio for recording, impacting the researchers financially as well as in terms of time.

Implementing the plan:

Four initial podcasts were recorded, each between four and six minutes long on six technical concepts identified as important concepts with which students generally struggle. After peer feedback from the distance university colleague lecturing the same taxation course, a further three podcasts where developed.

Windows Sound Recorder, a Windows application on a personal laptop was used to record the podcasts at no additional cost. Windows Sound Recorder was selected after investigating numerous programmes, but these were either too complex to master in the given time, too time consuming in creating the podcasts or too expensive to set up with no available funding for the initiative.

Windows Sound Recorder produces podcasts in a Windows Media Audio (WMA) file format, limiting the number of devices that are compatible with this format. These WMA files were converted to Moving Picture Experts Group Layer – 3 Audio (MP3) format to allow compatibility with most devices. This conversion was aimed at increasing compatibility with as many as possible devices, increasing student access.

Observing, monitoring and evaluating the action*:*

In order to monitor the initiative the researchers subjected the podcasts to peer evaluation from a colleague at a distance university, facilitating the same taxation course in the same developing country. The podcasts were also subjected to learner feedback in the form of an online questionnaire with structured questions.

The questionnaire was developed by the researcher and was evaluated by the colleague who reviewed the podcasts as well as an expert in the education environment. The questionnaire was compiled with the main purpose of gathering information to determine if students were ready for a flipped classroom learning environment, and information that would inform the future study following on this pilot project. After implementing the changes to the questions based on their feedback, the online survey was created. Questions specifically relating to the use of podcasts were asked as part of the student module feedback survey uploaded on the University learning management system (BlackBoard). Completing the survey was voluntary and students were informed of the fact that their responses would be treated anonymously. Out of a group of 1084 students enrolled for the module, 201 Afrikaans students and 694 English students completed the questionnaire. This represents an 83% response rate.

The following tables are al representative of a combination of the English and Afrikaans students‟ responses, with no material differences between the language groups‟ responses. The data was analysed using descriptive analysis to determine students‟ perceptions on the use of podcasts as part of a blended learning environment. Learner quotes which captured the general feedback provided by the students are also reported on in order to strengthen the descriptive statistics.

Table 2: Feedback on Question >> These podcasts are helpful study tools that assisted me in my learning:

Response	**Strongly disagree**	**Disagree**	**Agree**	**Strongly agree**	**Not Applicable (did not listen to podcasts)**
Percentage	5%	6%	25%	51%	12%

From the responses to the above mentioned question it is clear that undergraduate taxation students experienced revision podcasts as a valuable study tool that assisted them in their learning. In total 76% of students either agreed or strongly agreed with the statement.

Learner feedback quote: "*The podcasts were extremely helpful! It was like a mini revision for me to check whether I knew my work for the tests and I found out what I needed to concentrate on. I really hope that podcasts are made for other topics as well.*"

Table 3: Feedback on Question >> I listened to the podcasts:

Response	**Not once**	**Once**	**Two – Three times**	**More than Three**	**Un-answered**
Percentage	33%	30%	23%	14%	1%

The results indicated in this graph are the averages of the number of times that learners listened to the different podcasts created during the first action research cycle. Replay is one of the many learner expectations of use of podcasts (Tynan & Colban, 2006). It is evident from the 37% of learners that listened to the podcasts more than once, that this expectation was met to some extent. It is also evident that many of the students did not listen to the podcasts. When asked why these students did not listen to the podcast, technological difficulties or insufficient access to data or listening devices was identified as the main theme. This is in line with literature on the topic, cautioning educators to take technical difficulties into account (Bullen et al., 2001). For purposes of the second action research cycle, students were referred to the technology offered by the University to download and listen to the podcasts.

Learner feedback quote: *"The podcasts were great studying techniques assistances and helped me understand the work as if I were in a lecture and you get to repeat whatever you did not understand until you eventually understand it. I am even considering to buy (sic) a recorder so that I can record lectures and improve my understanding of tax."*

Learner feedback quote: *"I experienced great difficulty downloading the podcasts. I really wanted to make use of them, AS I STRUGGLE WITH TAXATION, but I could not."*

Table 4: Feedback on Question >> The ideal podcast is the following length:

Response	**Shorter than three minutes**	**Three to six minutes**	**Six to ten minutes**	**Unanswered**
Percentage	9%	54%	37%	1%

This response is in line with the expectation of the lecturer that the length should not be too long as it is merely a tool for revision.

Learner feedback quote: *"I really enjoyed the use of the podcasts and think they were a very valuable learning experience. I would prefer them to be a minute or two longer, just so that the lecturer isn't speeding through the work because she's talking so quickly, but that she's talking at an average speed and there's enough time to process everything that is being said."*

Table 4: Feedback on Question >> In an ideal world, all my lectures will be presented on podcasts that I can listen to whenever it suits me, and class time will only be used to do examples and exam technique:

Response	Strongly disagree	Disagree	Agree	Strongly agree	Not Applicable (did not listen to podcasts)
Percentage	18%	17%	27%	29%	9%

This specific question was included in the questionnaire to determine if learners are ready for podcast to be implemented in creating a flipped classroom learning environment, or whether podcast should remain to be utilised merely as a revision tool. More than half of the respondents (56%) agreed (or strongly agreed) with the statement that they consider a flipped classroom environment to be an ideal world. From this, the researchers concluded that a majority of the students were ready for a flipped classroom learning environment.

Learner feedback quote: *"The podcasts are a very excellent learning tool. I feel that it would be great if we could also receive video tutorials with the examples cause (sic) I noticed that I fully understood the content of the podcast while I was following in my text book. If the video tutorials could contain practical examples that would benefit the students more."*

Not all learners had only positive feedback, but for the most part, the feedback was either overwhelmingly positive, or constructive in nature. The following student feedback quote falls in the latter category, and was taken into consideration for the second action research cycle.

Learner feedback quote: *"Could the podcasts be slightly edited to improve the sound quality :-) ?"*

Reflection and Conclusion

This study did not aim to measure the changes or effects of revision podcasts on student performance, but rather to determine their perception of the usefulness of podcasts as a revision tool for learning.

Although the majority of students indicated that they found the revision podcasts to be a helpful learning tool, there were a number of issues with downloading the podcasts. This is to be expected at developing higher education institutions and one of the barriers that needs to be considered and taken into account when deciding upon a learning strategy that incorporates technology.

From the first action research cycle it can be concluded that podcasts can be implemented as a facilitation of learning strategy to form part of a blended, learner centred learning environment, in developing higher education institutions, if used as a revision tool. This conclusion is based on the fact that 75% of respondents indicated that they found podcasts to be a helpful learning tool. Furthermore, it can also be concluded that the majority of respondents are of the opinion that a flipped classroom would be considered the ideal, indicating student readiness for such a learning environment.

Action Research Cycle 2

This cycle aims to investigate if students view the implementation of podcasts as a tool to create a flipped classroom in order to utilise „in-class / contact time" more effectively, as an effective learning strategy. The aim in this cycle was to facilitate an integrated approach to learning by using the theoretical framework of a flipped classroom.

From the positive student feedback received about podcasts used as a revision tool (action research cycle 1), specifically the question relating to the use of podcasts to create a flipped classroom, it was concluded that students are of the opinion that podcasts can be utilised as a tool to create a flipped classroom.

Such a learning environment will assist in addressing time constraints with large classes as well as curriculum overload, as well as learners" need for flexible learning. The learning environment will also allow „in-class / contact time" to be utilised to facilitate soft skills to address employer expectations as well as to focus on the difficult technical concepts that will address the requirements of professional bodies.

Planning the initiative

The researchers considered the findings of the study conducted by Heilesen (2010:1065) which reported that learners had the perception that the workload in a flipped classroom environment was higher than that in a conventional teaching environment. Therefore, the researchers reduced the number of „in class / contact time" sessions by 25% and only facilitated the remaining 75% of the sessions after the lecture podcasts were distributed to the students.

During this cycle, podcasts were not used as a revision tool, but were utilised as substitutional podcasts, shifting content delivery to open up „in class / contact time" for practical application and focus on the more difficult concepts of the technical content.

Implementing the plan

According to the second year taxation module work programme, a normal week consists of four contact sessions per week, and for this specific topic, four contact sessions were scheduled.

The first two contact sessions of the week were utilised to explain the broad concepts of the selected topic (as it was a newly introduced topic and it was introduced the week before an assessment opportunity). No contact session was scheduled for the third session, allowing students time to listen to the recorded podcasts (sound files). The fourth session of the week was utilised to attempt a practical question on the specific topic.

The podcasts were recorded by a professional during a four hour „in class / contact time" session presented to another group, that took place over the weekend preceding the „in class / contact time" sessions of the respondents. Unlike the revision podcasts which were only made available after the lectures on the specific topic had been presented, these substitutional podcasts were made available during the week that the reduced „in class / contact time" sessions took place. Four one-hour long podcasts were made available to the learners. This was done in an attempt to create a version of a flipped classroom.

Observing, monitoring and evaluating the action

Once again the researchers developed an online student feedback questionnaire. This questionnaire consisted of some of the same questions asked on the revision podcasts, and the non-applicable questions were altered to specifically provide feedback on the flipped classroom podcasts.

In this questionnaire the researchers substituted the term "sound files" for podcasts, in order for the respondents to clearly distinguish between the revision podcasts and the podcasts (sound files) used to create a flipped classroom. This was done to increase the reliability of the responses.

The questionnaire was reviewed by an expert in the education environment where-after the suggested changes were implemented. The questionnaire was uploaded on the University learning management system as part of the module feedback. Completing the survey was voluntary and respondents were informed of the fact that their responses would be treated anonymously. Out of a group of 1060 students enrolled for the module, 160 (compared to the 201 respondents for cycle 1) Afrikaans students and 575 (compared to the 694 respondents for cycle 1) English students completed the questionnaire. This represents a 68% (compared to the 83% for cycle 1) response rate. The response rate was accepted as sufficient for purposes of the research reported on in this article.

The following tables are al representative of the English and Afrikaans students‟ combined responses to the following questions. The data was analysed using descriptive analysis to determine students‟ perceptions on the use of podcasts towards creating a flipped classroom. Learner quotes which captured the general feedback provided by the students are also reported on in order to strengthen the descriptive statistics.

Table 5: Feedback on Question >> I listened to the sound files on estate duty:

Response	**Not once**	**Once**	**Two – Three times**	**More than three times**	**Unanswered**
Percentage	32%	45%	16%	7%	0%

The majority of learners (68%) listened to the lecture podcasts (sound files). The researchers considers this to be a high response rate, especially taking into account the qualitative feedback on the length of the lecture podcasts which learners were dissatisfied with, as well as the fact that this pilot study took place during the week immediately preceding their test week. The 68% positive response rate to this question can be interpreted as a strong indication that learners are ready for a complete flipped classroom model.

Learner response quote: "*As I only started studying the topic so late, the soundfiles were too long for me to listen to all of them. Will definitely listen to all of them a couple of times before the exam."*

Learner response quote: *"I didn't [listen to the sound files] did not have time but I will listen to them for the exam. The time that was allocated for it I used to catch up work."*

Table 6: Feedback on Question >> In an ideal world, all my lectures will be presented on podcasts that I can listen to whenever it suits me, and class time will only be used to do examples and exam technique:

Response	Strongly disagree	Disagree	Agree	Strongly agree	Not Applicable (did not listen to podcasts)
Percentage	18%	19%	27%	21%	15%

Despite only 48% of respondent agreeing with the statement (in contrast to 56% agreeing with this statement during the cycle 1 survey), there are still more positive responses than negative responses as indicated by the 37% of respondents who did not agree to this statement. Possible reasons for the decline in positive responses to this question from cycle 1 to cycle 2 can be found in the qualitative feedback. Analysing the qualitative data, the researchers came to the conclusion that the length of the sound files had a significant negative impact on students" perceptions of a flipped classroom.

Table 7: Feedback on Question >> I prefer the concept of sound files where an entire lecture is recorded, above the concept of podcasts, where only a specific concept is recorded (short period of time):

Response	Strongly disagree	Disagree	Agree	Strongly agree	Not Applicable (did not listen to podcasts)
Percentage	23%	25%	23%	17%	13%

From the table above it is clear that 48% of respondents prefer the concept of revision podcasts or podcasts that cover only a specific concept over the substitutional podcasts (sound files). The main theme identified in the qualitative responses regarding the substitutional podcasts (sound files) were from students complaining about the length of these podcasts (sound files). The researchers therefore concluded that students are ready for a flipped classroom environment, but the substitutional podcast needs improvement.

Learner response quote: *"I needed to prepare for the test and the podcasts were too long and not focused enough. The previous podcast were great because they gave you a really great focused explanation of the topic. A full recording of the lecture made it more difficult to take everything in, for such a short preparation time."*

Reflection

The decrease in respondents stating that they agree with the statement that in an ideal world a flipped classroom learning environment would prevail; is an area of future research. Based on the qualitative feedback, the researchers are of the opinion that the positive response rate would have been higher during cycle two, if the substitutional podcasts where reduced to 10–20 minute podcasts, and labelled according to the specific concepts covered in that specific podcast. This assumption is a possible area of future research.

CONCLUSION

Based on the qualitative as well as quantitative feedback of the pilot project, it can be concluded that students in the second year taxation model perceive podcasts to be a helpful learning tool. This conclusion is based on 76% positive response rate to the statement in the questionnaire.

A further conclusion that can be drawn from the data gathered in the second cycle of the pilot study is that students are ready for a flipped classroom learning environment. Although only 40% of respondent preferred the substitutional podcasts (sound files) over the revision podcasts, 48% of respondents indicated that they found the substitution podcasts (sound files) to be a valuable learning experience.

37% of respondents indicated that they did not perceive the sound files to be a valuable learning experience with 15% of respondents not able to answer the question because they did not listen to the substitution podcasts (sound files).

There could be a number of reasons why the respondent reacted more favourably to the revision podcasts than the substitution podcasts (sound files). From the qualitative feedback, the researchers concluded that the length of the podcasts had the greatest negative impact on how the substitution podcasts were perceived.

It can therefore be concluded that students are ready for a flipped classroom environment, but that the researchers would have to bring about changes to the podcasts, specifically pertaining to the length of the podcasts in order to improve the students" experience and therefore perception of such a learning environment.

This study would be of benefit to undergraduate educators in the accounting sciences for development of an innovative classroom tool. The study also contributes to the discussion on moving towards a flipped classroom approach to teaching and learning embedded in a blended learning environment.

Limitations and the way forward

Because this study is the pilot study of a greater research project, it has a number of limitations. This study is limited to the use of podcasts specifically as a revision tool. It does not address the use of the other tools such as vodcasts (audio and visual) or voice over PowerPoint slides (VOP) which will form part of the greater project, nor does it focus on creating a flipped classroom as such, which is the objective of the greater research project.

This study is also limited to exploring the student perceptions of revision podcasts, and do not account for lecturer perceptions of such implementations.

Informed by the results of this pilot study, the researchers aim to develop and produce various e- learning tools to be used in a second year undergraduate taxation module, towards creating a flipped classroom approach in the module.

The developed e-learning tools will contain theoretical content to be used by students outside the classroom. This will address students‟ needs for flexibility and control over their own learning towards creating a student centred teaching approach. An additional important benefit will be that „in-class/contact time‟ will be made available to be used for developing the skills required by employers and professional bodies, assisting lecturers to facilitate an integrated approach to learning (which includes both the facilitation of theoretical competencies as well as soft skills).

The researchers aim to develop three types of e-learning tools, namely podcasts (audio), vodcasts (audio and visual) as well as voice over powerpoint slides (VOP) containing theoretical content as well as examples. The data gathered through the pilot study as described in this article will be utilised in the creation of a blended learning environment towards creating a flipped classroom.

REFERENCES

Aliotta, M., Bates, S., Brunton, K. and Stevens. A. (2008), “Podcasts and lectures”. In *Podcasting for learning in universities,* ed. G. Salmon and P. Edirisingha, 33–42. Milton Keynes, UK: Open University Press.

Barac, K. (2009), “South African training officers‟ perceptions of the knowledge and skills requirements of entry-level training accountants”, *Meditari Accountancy Research,* Vol. 17 No.2, pp.19-46.

Bendel, L. (2005), “Taxation Careers in the financial markets”, Available at: http://www.financialmarketsjournal.co.za/4thedition/taxationcareer.htm (Accessed 6 March 2014).

Bergmann, J. and Sams, A. (2012), “The Flipped Class Manifest”, Available at: http://www.

The dailyriff.com/articles/the –fliped-class-manifest-823.php. (Accessed 6 July 2014).

Boritz, J. E., and Carnaghan, C. A. (2003), “Competency-based education and assessment for the accounting profession: a critical review”, *Canadian Accounting Perspectives,* Vol. 2 No.1,pp.7-42.

Bullen, M., Morgan, T. and Quayyum, A. (2001), “Digital Learners in Higher Education: Generation is Not the Issue”, *Canadian Journal of Learning and Technology,* Vol.37 No.1,pp.1-24.

Cane, C. and Cashmore, A. (2008), “Student-produced podcasts as learning tools”, *Paper presented at the Higher Education Academy’s fourth Annual Conference* July 1–3, at the Harrogate International Centre.

Chan, A. and Lee, M.J.W. (2005), “An MP3 a day keeps the worries away: Exploring the use of podcasting to address preconceptions and alleviate pre-class anxiety amongst undergraduate information technology students”, In *Good practice in practice. Proceedings of the Student Experience Conference,* ed. D.H.R. Spennemann and L. Burr, 59–71. Wagga Wagga, NSW: Charles Sturt University.

Clark, J. and White, G. (2010) “Experiential Learning: A Definitive Edge in the Job Market”,*American Journal of Business Education,* Vol. 3 No.2,pp.115-118.

Coetzee, S. and Oberholzer, R. (2009), “The tax knowledge of South African trainee accountants: a survey of the perceptions of training officers in public practice”, *Journal of Accounting Education,* Vol. 18 No.4,pp.421-441.

Cunningham, S. (2006), “What price a creative economy?” *Platform papers: Quarterly essay on the Performing Arts* Vol 9. Strawberry Hills, NSW: Currency Press.

De Villiers, C. and Venter, E. (2010), “The influence of the accounting profession on the academy: A cautionary case study”, *Meditari Accountancy Research.*(No volume or page numbers?).

De Wet, J.H. and Van Niekerk, M.C. (2001), “An innovative approach to accounting education at first year level”, *Meditari Accountancy Research*, 9:93-108.

Doman, S. and Nienaber, G. (2012), “Taxation education: current views and preferences of South African employers”, *International Business & Economics Research Journal,* Vol. 11No.8, pp.951-962.

Du Toit, P. H. (2009) “An action research approach to monitoring one‟s professional development as manager“, *Pretoria: Foundation for Professional Development.*

Eisner, S. P. (2004), “Teaching workplace skills through integrative exercises”, *Journal of College Teaching & Learning*, Vol. 1 No.11, pp.61-72.

Ferrance, E. (2000), “Action research“, *Northeast and Islands Regional Educational Laboratory At Brown University*, Available at http://www.alliance.brown.edu/pubs/themes_ed/act_ research.pdf. (Accessed30 January 2011).

Fink, L.D. (2003), “Creating Significant Learning Experiences”, John Wiliey and Sons Inc.

Gammie, B., Gammie, E. and Cargill, E. (2002), “Personal skills development in the accounting curriculum”, *Journal of Accounting Education,* Vol. 11 No.1, pp.63-78.

Garrison, D. R. and Kanuka, H. (2004), “Blended learning: Uncovering Its Transformative Potential in Higher Education”, *Internet and Higher Education,* Vol. 7, pp.95–105.

Graham, C.R., Woodfield, W. and Harrison, J. B. (2013), “A framework for institutional adoption and implementation of blended learning in higher education”, *The Internet and Higher Education*, Vol. 18, pp.4-14.

Gros, B., Garcia, L. and Escofet, A. (2012), "Beyond the Net Generation Debate: A Comparison of Digital Learners in Face-to-Face and Virtual Universities", *International Review of Research in Open and Distance Learning*, Vol. 13 No.4, pp.191-210.

Heilesen, S. B. (2010), "What is the academic efficiency of podcasting?" *Computers & Education*, Vol. 55, pp.1063-1068.

Howieson, B. (2003), "Accounting practices in the new millennium: is accounting education ready to meet the challenges?", *The British Accounting Review*, Vol. 35 No.2, pp.69-103.

Jowitt, A. (2008), "Perceptions and usage of library instructional podcasts by staff and learners at New Zealand‟s Universal College of Learning (UCOL)", *Referenced Services Review*, Vol. 36 No.3, pp.312-336.

Juchau, R. and Neale, R. (2001), "Taxation in Australian undergraduate accounting courses: a review and case study", *Accounting Education*, Vol. 10 No.1, pp.27-36.

McCarthy, P. R. and McCarthy, H. M. (2006), "When Case Studies Are Not Enough: Integrating Experiential Learning Into Business Curricula", *Journal Of Education For Business*, Vol. 81 No.4, pp.201-204.

McNiff, J. and Whitehead, J. (2006), "*All you need to know about action research*", *Sage Publications*, London.

McWilliam, E. (2008), "Unlearning how to teach", *Innovations in Education and Teaching International*, Vol. 45 No.3, pp.263-269.

Miller, A. M. and Woods, C. M. (2000), "Undergraduate tax education: a comparison of educators' and employers' perceptions in the UK", *Journal of Accounting Education*, Vol. 9 No.3, pp.223-241. Availableat: http://www.tandf.co.uk/journals (Accessed 18 January 2012).

Mugwanya, R.; Marsden, G. and Boateng, R. (2011), "A preliminary study of podcasting in developing higher education institutions: A South African case", *Journal of Systems and Information Technology*, Vol. 13 No.3, pp.268-285.

O'Brien, R. (2001), "*An Overview of the Methodological Approach of Action Research Faculty of Information Studies"*, University of Toronto, Available athttp://www.web.ca/~robrien/papers/arfinal.html (Accessed 1 February 2011) OxfordOnlineDictionary, (2012), Availableat:http://oxforddictionaries.com/ (Accessed 18 January 2012)

Pink, D. H. (2005), "*A whole new mind*, *Penguin", NY* pp.1-6

Prensky, M. (2001), "Digital natives, Digital immigrants Part 1", *On the Horizon*, Vol.9 No. 5,

Prensky, M. (2003), "Digital Game Based Learning", *ACM Computers in Entertainment*, Vol.1 No.1, pp.1-4

Research Focus. (2009), "The need for a learnership in Taxation", Available at: http://www.fasset.org.za/Downloads/Research/tax_learnership_research_report_final_31_may_2 0 09.pdf (Accessed 14 October 2012).

Sandeen, C. (2008), "Boomers, Xers and Millennials: Who are They and What do They Really Want from Continuing Higher Education?", *Continuing Higher Education Review*, Vol. 78, pp.11-31.

South African Institute of Chartered Accountants (SAICA). (2015), *Competency framework*, Available at: https://www.saica.co.za/Portals/0/LearnersStudents/documents/Competency_ framework_updated_2014_summary.pdf (Accessed 14 January 2015).

South African Institute of Tax Practitioners (SAIT) (2015), *The Tax Professional Qualification Curriculum: Knowledge Component*, Available at: http://c.ymcdn.com/sites/www. thesait.org.za/resource/resmgr/Education_2014/TP_Curriculum_Knowledge_Comp.pdf (Accessed 14 January 2015).

Stewart, W. and Doolan, M.A. (2008), "Listen to this: Enhancing the learner experience through the use of audio within next generation technologies". *Paper presented at the Higher Education Academy's fourth Annual Conference*, July 1–3, at the Harrogate International Centre.

Talebian, S., Mohammadi, H. M. and Rezvanfar, A. (2014), "Information and Communication Technology (ICT) in Higher Education: Advantages, Disadvantages, Conveniences and Limitations of Applying E-Learning to Agricultural Students in Iran", *Social and Behavioural Science,* Vol. 152, pp.300–305.

Trigwell, K. and Prosser, M. (1996), "Congruence between intention and strategy in science teachers" approach to teaching", *Higher Education,* Vol. 32, pp.77–87.

Tynan, B. and Colban, S. (2006), "Podcasting, learner learning and expectations", in *Who's learning? Whose technology? Proceedings of the 23rd annual ascilite conference in Sydney, Australia, 2006,* pp.825-832.

University of Pretoria, (2010). "Innovation Generation: Creating the Future, 2007–2011", *The Strategic Plan of the University of Pretoria.*

Vogele, C. and Gard, E. T. (2007), "Podcasting for Corporations and Universities: Look before you leap", *Journal of Internet Law,* Available at: http://papers.ssrn.com /sol3/papers.cfm?abstract_id=995059 (Accessed 14 January 2015)

Weil, S., Da Silva, T. and Ward, M. (2014) "Blended learning in accounting: a New Zealand case". *Meditari Accounting Research*. Available at: http://dx.doi.org/10.1108/MEDAR-10-2013 0044. (Accessed 23 April 2015)

APPENDIX 1: STUDENT QUESTIONNAIRE

The questions were administered by means of an electronic survey.

QUESTIONS REGARDING PODCASTS:

1. I listened to the podcast on section 8(4)(a) recoupments and 11(o) scrapping allowance:

a. not once
b. once

c. two – three times
d. more than three times

2. I listened to the podcast on section 13"s, the building allowances:

a. not once
b. once
c. two – three times
d. more than three times

3. I listened to the podcast on section 11(e) wear and tear allowance and section 12C machinery and plant used directly in a process of manufacture:

a. not once
b. once
c. two – three times
d. more than three times

4. I listened to the podcast on section 20A the ring-fencing of assessed losses:

a. not once
b. once
c. two – three times
d. more than three times

5. These podcasts are helpful study tools that assisted me in my learning:

a. I strongly disagree
b. I disagree
c. I agree to an extent
d. I strongly agree
e. Not applicable, since I did not listen to the podcasts.

6. In an ideal word, all my lectures will be presented on podcasts that I can listen to whenever it suits me, and class time will only be used to do examples and exam technique.

a. I strongly disagree
b. I disagree

c. I agree to an extent
d. I strongly agree
e. Not applicable, since I did not listen to the podcasts.

7. The ideal podcast is the following length:

a. shorter than 3 minutes
b. 3-6 minutes
c. 6-10 minutes

8. I would like to have podcasts on the other taxation topics as well:

a. I strongly disagree
b. I disagree
c. I agree to an extent
d. I strongly agree
e. Not applicable, since I did not listen to the podcasts.

9. I learn best by: (please choose the most appropriate option, only one)

a. Reading/writing
b. Visually (pictures, diagrams, symbols, graphs)
c. Kinesthetically (you need to do things to understand)
d. Aurally (hearing)

10. I had trouble downloading the podcasts
   - True
   - False

11. I would want podcasts that (Please select all applicable options):

a. Only deal with one specific section (for example, only 11(e), or only Section 13 quin)

b. have more examples

c. have more theory

d. only gives outlines of the work. Not so much of theory, just the bigger picture

12. Please provide us with any additional comments which you may have relating to BEL200
Open question

QUESTIONS REGARDING THE ESTATE DUTY SOUND FILES:

13. I listened to the sound files on estate duty:

a. not once
b. once
c. two – three times
d. more than three times

14. If you did not listen to the sound files, please provide a reason why you did not do so:

Open comment

15. I listened to the sound files on Estate Duty, and it was a valuable learning experience:

a. Not applicable, since I did not listen to the sound files.

b. I strongly disagree

c. I disagree to an extent

d. I agree to an extent

e. I fully agree

16. In an ideal word, all my lectures will be presented on sound files that I can listen to whenever it suits me, and class time will only be used to do examples and exam technique.

a. I strongly disagree
b. I disagree
c. I agree to an extent
d. I strongly agree
e. Not applicable, since I did not listen to the sound files.

17. The ideal sound file is the following length:

a. 10 – 20 minutes long
b. 20 - 30 minutes long
c. 30 – 45 minutes long

d. longer than 45 minutes
e. Not applicable, since I did not listen to the sound files.

18. I would like to have sound files on the other taxation topics as well:

a. I strongly disagree

b. I disagree

c. I agree to an extent

d. I strongly agree

e. Not applicable, since I did not listen to the sound files.

19. I learn best by: (please choose the most appropriate option, only one)

a. Reading/writing
b. Visually (pictures, diagrams, symbols, graphs)
c. Kinesthetically (you need to do things to understand)
d. Aurally (hearing)

20. I had trouble downloading the sound files:
   a. True
   b. False

21. I would want sound files that (Please select all applicable options):

a. Only deal with one specific section (for example, only 11(e), or only deemed property as defined for Estate Duty)
b. have more examples

c. have more theory

d. only gives outlines of the work. Not so much of theory, just the bigger picture

22. I prefer the concept of sound files where an entire lecture is recorded, above the concept of podcasts, where only a specific concept is recorded (short period of time).
   a. I strongly disagree

   b. I disagree

   c. I agree to an extent

d. I strongly agree

e. Not applicable, since I did not listen to the sound files and/or podcasts.

23. Based on your answer in question 48, please provide reasons why you prefer the one above the other.

Open comment

24. I am a member of the BEL200 facebook group: a True
b False

25. If you are not a member of the BEL200 facebook group, please provide reasons why you are not a member:
Open question

EDU005 Measuring accessibility of accountancy programmes at public higher education institutions in South Africa

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Abstract

South Africa is currently in the midst of a financial skills shortage with a severe scarcity of accountants in particular. The shortage of accountants in South Africa could possibly be addressed if the accessibility to accountancy programmes is measured continuously and the public higher education institutions that offer them are ranked based on the results. This study attempted to measure the accessibility of accountancy programmes offered at public higher education institutions in South Africa by making use of four accessibility indicators, namely participation, educational attainment, educational equity and gender parity. Due to lack of data in the South African context, only the participation rate and educational attainment rate could finally be measured. Although accessibility indicators are often measured at a high level for higher education both in South Africa as well as internationally, these indicators are not often used to measure accessibility of certain scarce skills professions such as that of accountancy. This study aimed to fill this gap by measuring accessibility and providing subsequent rankings of the public higher education institutions in South Africa in terms of accountancy progammes offered. The results could provide the Department of Higher Education and Training (DHET), the South African government and other stakeholders with information on where possible accessibility issues are experienced in order to address these issues in a timely manner. Based on the combined accessibility assessment, the Cape Peninsula University of Technology and the University of Stellenbosch ranked the highest overall, being therefore the most accessible institutions for accountancy programs. Measures should be taken to learn from these universities and to take note of plans that they have put in place to address their overall accessibility to the accountancy programmes that they offer.

1. Introduction

South Africa is currently in the midst of a global "war on talent" for financial skills (SAIPA, 2014). Individuals with financial skills have the ability to make more sensible and effective decisions regarding financial and other economic resources (Kurihara, 2013). The current financial skills shortage experienced in South Africa thus has the potential to seriously hamper economic growth (SAICA, 2008). South Africa is faced with an increasing gap between the financial skills needed to ensure economic growth and the supply thereof; a situation that is in desperate need of government interventions (Fin24, 2013).

The poor pass rates achieved for Grade 12 Mathematics further contribute to the now critical level of financial skills shortage in South Africa and scarce skills occupations such as accountancy are some of the worst affected (Molefi, 2014; Marshall, 2014). The accountancy profession featured at 12th position on the National Scarce Skills List: Top 100 occupations in demand which was published by the Minister of Higher Education and Training in 2014 (South Africa. DHET, 2014). The South African Institute of Chartered Accountants (hereafter referred to as SAICA) conducted research from 2007 to 2008 and found that there was a shortage of 22 000 qualified accountants and that the shortage was bound to increase in coming years (SAICA, 2008).

Universities in South Africa also currently experience capacity constraints which affect their ability to produce graduates with the much needed financial skills (Marshall, 2014). Odendaal and Joubert (2011) are of the opinion that in order to address the severe shortage of accountants in South Africa, sufficient numbers of students have to enrol and graduate from professional institutes and higher education institutions in South Africa. It is thus up to all stakeholders to investigate solutions to address the shortage (Odendaal and Joubert, 2011).

The Department of Higher Education and Training (hereafter referred to as DHET) emphasise that public higher education institutions (hereafter referred to as public universities) should increase their accessibility by taking into account the scarce skills, which includes that of accountants, in South Africa (DHET, 2013). As part of the process to improve student access to public higher education in South Africa, the DHET aims to have a participation rate at the public universities in South Africa of 25% (headcount enrolments of approximately 1.6 million) by 2030. Access to public higher education has been a long-standing aim of the South African government as is evident from the National Plan for Higher Education where a participation rate, based on the Gross Enrolment Rate, of at least 20% in public universities for the 20-24 year age group by 2016 is envisaged (Ministry of Education, 2001). Accessibility of public higher education should thus be improved together with student success and higher throughput rates. The White Paper for Post-School Education and Training (hereafter referred to as the White Paper) stresses that the challenge of increasing accessibility must become a priority for both national policy as well as for each of the public universities in South Africa (DHET, 2013). The Strategic Plan 2010/2011 – 2014/2015 of the DHET also set a target of a throughput rate of at least 20% by 2014 for higher education in South Africa (DHET, 2010).

It is however not sufficient to only state that accessibility to public universities should be increased. Special emphasis should be placed on the monitoring thereof as it is crucial in order to assess the progress made in this regard. If South Africa is to address the severe shortage of scarce financial skills and specifically that of accountants, the accessibility of accountancy programmes offered at the public universities in South Africa should be closely monitored and regularly measured.

Following in section 2 is a short description on the manner in which accessibility of higher education has been defined and measured in other local and international studies. This is followed with sections 3 and 4 which provide the purpose and research methodology of the study before section 5 highlights the limitations of the study. Section 6 describes the results of the measurement of accessibility across the 23 universities of South Africa based on the identified four accessibility measurements with section 7 concluding the paper with some reflection on the results obtained in section 6.

2. The measurement of accessibility of higher education

Accessibility of higher education is defined in the Global Higher Education Rankings 2005: affordability and accessibility in comparative perspective report (hereafter referred to as the Global Rankings report 2005) as the ability of persons from all backgrounds to gain access to higher education on a relatively equal basis (Usher and Cervenan, 2005; Usher and Medow, 2010). This report, as well as the follow-up Global Higher Education Rankings 2010 report (hereafter referred to as the Global Rankings report 2010), set out to measure accessibility of higher education and rank countries in terms of the results thereof. Four indicators were used in these two reports to measure the accessibility of higher education namely (Usher and Cervenan, 2005; Usher and Medow, 2010):

1. Participation rate;
2. Educational attainment rate;
3. Educational Equity Index; and
4. Gender Parity Index.

Similar indicators were used in the Accessibility and affordability of tertiary education in Brazil, Colombia, Mexico and Peru within a global context report (Murakami and Blom, 2008) as well as in the Measuring up 2008, the national report card on higher education report (The National Center for Public Policy and Higher Education, 2008). Although there is consensus amongst most of the authors regarding the four major indicators, there are differences in the manner in which the various indicators are calculated.

3. Purpose of the study

As set out in the introduction to this study, certain targets were set for public universities in South Africa relating to increased accessibility and improved throughput rates. Meeting these targets will advance the process of addressing the skills shortage in South Africa and it is thus important that the public higher education institutions be closely monitored in terms of accessibility.

In order to address the severe financial skills shortage and the current need for accountants specifically, it is however not sufficient to measure participation and throughput rates only at a high level for the public universities. The accessibility of accountancy programmes offered by public universities should be measured and closely monitored. A more defined set of measurement criteria should thus be set to measure the accessibility of accountancy programmes offered by these public universities and to rank them based on the results. These rankings could possibly put pressure on the public universities to improve on not only their overall accessibility but specifically the accessibility of their accountancy related programmes in order to address the financial skills crisis in South Africa.

The measurement of the accessibility of accountancy programmes offered by the public universities and the subsequent rankings of these universities based on the results, could provide the DHET, relevant stakeholders and the South African government with a better indication of where possible problems in terms of accessibility are experienced in order to address them.

4. Research methodology

In this study, quantitative facts and figures obtained to support the measurement of accessibility indicators of accountancy programmes offered at the public universities in South Africa are considered to be objective and independent of the researcher. It is for this reason that the philosophical stance of the natural scientist was adopted in this quantitative study (Saunders, Lewis and Thornhill, 2007). Secondary data sources were mainly used in this study, derived from various sources such as enrolment data [DHET, 2014 (a)] and graduation data [DHET, 2014 (b)] obtained from the DHET as well as population statistics obtained from Statistics South Africa (Statistics South Africa, 2013). Saunders, et al., (2007) explain that secondary data can consist of any published summaries.

The positivism research philosophy will be reflected with characteristics of the deduction research approach as this study will use a structured methodology that can be replicated by other researchers. The methodology facilitates the collection of quantitative facts and figures relating to the measurement of the accessibility indicators that can be analysed independently of the researcher and is therefore considered to be objective and free of bias (Saunders, et al., 2007). The principle of reductionism will be followed, whereby accessibility of accountancy programmes offered at the public universities in South Africa will be broken down into various smaller measurable indicators.

5. Delimitations of this study

This study attempts to pave the way for future studies of a more sophisticated nature, depending on data availability. Due to data unavailability such as age-specific synthetic cohort data and specific data on full-time or part-time undergraduate students, certain of the methods used to calculate accessibility indicators, could not be used for purposes of this study. This is further discussed in section 6 of this study.

The relationship and trade-off between participation rates and educational attainment rates are not discussed in this study. Students that stay in the system for a number of years, fluctuating enrolments and different durations of qualification types are only some of the factors that affect the relationship between participation rates and educational attainment rates. These factors have not been investigated in this study.

This study ranked the public universities in South Africa based on the results of the measurement of certain accessibility indicators for accountancy programmes offered by these universities. The study did however not distinguish in the results between residential and distance learning universities. The University of South Africa, which is considered to be the largest open distance learning university in South Africa, was thus measured against residential universities which could distort the results.

Other factors that could possibly influence the accessibility of accountancy programmes offered by the public universities in South Africa have not been discussed in this study. These include factors such as high tuition costs, the lack of sufficient financial aid to students, certain capacity constraints experienced by public universities and a general lack of state funding for higher education institutions.

6. Measurement of accessibility of accountancy programmes offered at the public universities in South Africa

This section will set out how the measurement of the accessibility of the accountancy programmes offered by the public universities in South Africa will be performed per indicator as well as how the ranking of the public universities will be done, based on the results of each indicator measured. This section will also provide the results of the measurement of the selected accessibility indicators with remarks and subsequent rankings per indicator. Although there are various methods for measuring the accessibility indicators, this study will, however, only make use of one method per indicator. This will be explained per indicator as set out in the following paragraphs.

Based on the results of the measurement of the accessibility indicators for the accountancy related programmes as set out earlier, the South African public universities will be compared to each other and an overall ranking of the universities will be done. The selected accessibility indicators will be measured for the period 2009 to 2012, in order to identify trends and establish whether progress was made during this period. In terms of headcount enrolment figures as well as graduation rate figures, the following qualification types were taken into account:

- Occasional students;
- Undergraduate diplomas and certificates (with a duration of one to two years);
- Undergraduate diplomas and certificates (with a duration of three years);

- General Academic First Bachelor’s degrees (with a duration of three years);
- Professional First Bachelor’s degrees (with a duration of four or more years);
- Post-graduate diplomas and certificates;
- Post-graduate Bachelor’s degrees;
- Honours degrees;
- Masters’ degrees; and
- Doctorate degrees.

For these qualification types, the accounting (0401) Classification of Educational Subject Matter code was used as obtained from the Higher Education Management Information System (hereafter referred to as HEMIS).

6.1 Participation rate

Kaiser and O’Heron (2005) as well as Steyn (no date) set out possible methods of calculating participation rate, namely:

1. Gross Enrolment Rate is one of the most well-known and widely used methods of measuring participation rate internationally (Kaiser and O’Heron, 2005) and in South Africa (Steyn, no date). In terms of higher education, Gross Enrolment Rate is calculated as the total of all enrolled students in higher education as a percentage of the number of persons in the five-year population age group starting from the official secondary school graduation age. This is in line with the calculation thereof as used by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2014) as well as by Steyn (no date) in the *Measuring student participation in the higher education sector in South Africa* report.
2. Net Enrolment Rate is calculated as the number of students in a particular age group enrolled for a certain level of education as a percentage of the number of persons in the population in that same age group. Although Steyn (no date) made use of this indicator in his study, this indicator is mainly used to measure primary and secondary school participation rates and will therefore not be measured in this study.
3. Net Entry Rate, calculated by Steyn (no date) as well as Kaiser and O’Heron (2005) making use of a synthetic cohort where a snapshot is taken in a particular year of the age distribution of higher education new entrants compared to the age distribution of the population. This method will not be used in this study due to the fact that the secondary data obtained from the DHET did not provide age-specific synthetic cohort data.
4. Initial Participation Rate. This indicator calculates the participation rate making use of only full-time undergraduate students. This method will not be used in this study as the secondary data obtained from the DHET does not provide specific data on full-time undergraduate students.

5. Varying Pathways Participation rate. This indicator measures participation on a basis similar to that of the Initial Participation Rate method, but takes all undergraduate students into account. Due to the fact that this method is not a well-known method, it will not be used in this study.
6. Extended Participation Rate. This indicator is similar to the Varying Pathways Participation Rate, but takes into account the seven largest age groups in enrolment as opposed to the four largest age groups in enrolment. This is also not a well-known method and will therefore not be used in this study.

Based on the previous paragraphs, the Gross Enrolment Rate is the best known and most widely-used method for measuring participation rate and will thus be used to measure participation rate for accountancy programmes offered at the public universities in South Africa. The five-year age group used in the calculation will be the 20-24-year age group as this is in line with that used by the Council on Higher Education in South Africa (CHE, 2013) as well as with that used by the DHET (Ministry of Education, 2001). Gross Enrolment Rate will be calculated as follows:

$$\frac{\text{Total number of headcount enrolments } \textbf{\textit{at each}} \text{ of the public universities in SA in terms of accountancy related programmes}}{\text{Population size in the 20-24-year age interval in SA}} \times 100$$

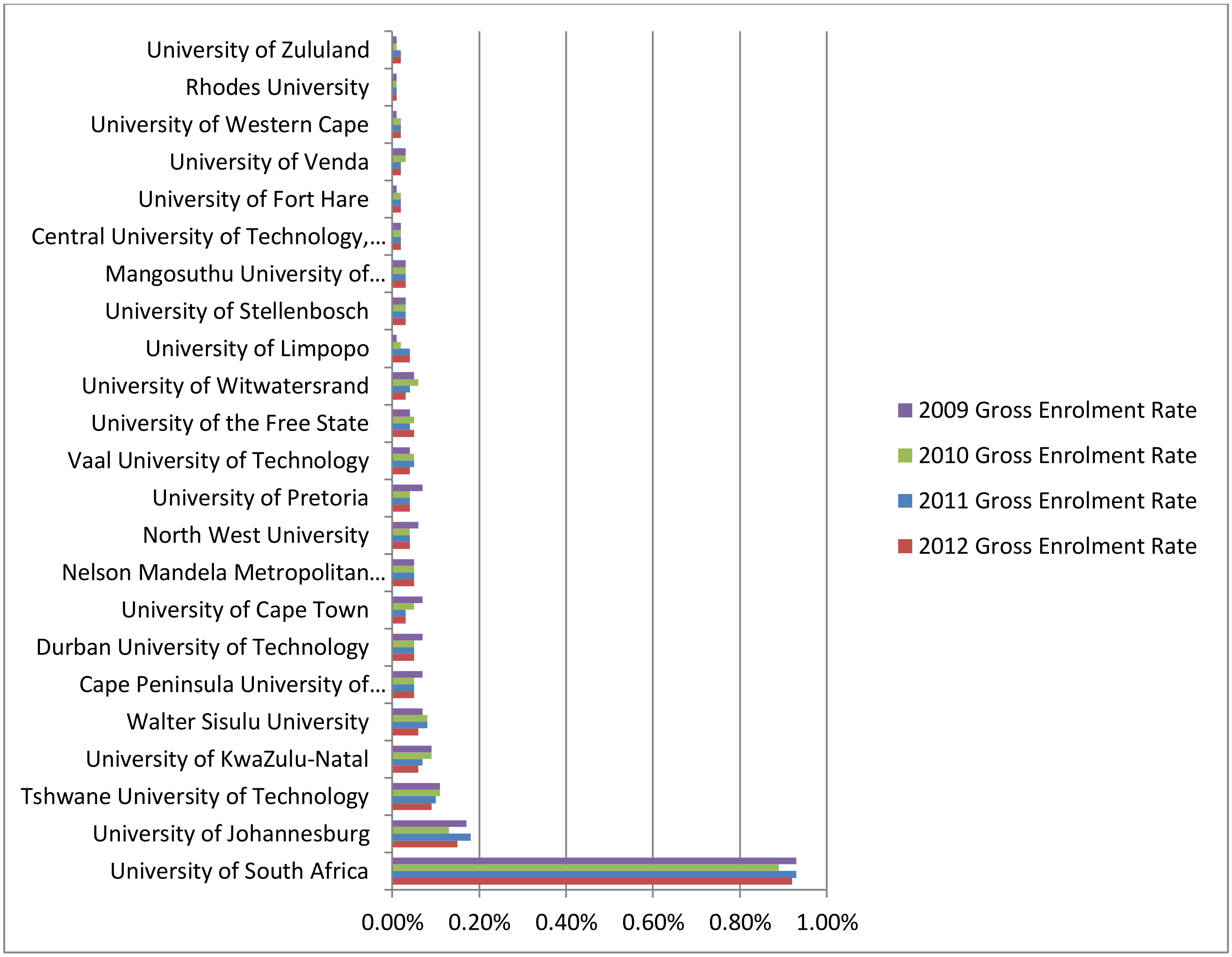
and

$$\frac{\text{Total number of headcount enrolments at public universities in SA in terms of accountancy related programmes } \textbf{\textit{in total}}}{\text{Population size in the 20-24-year age interval in SA}} \times 100$$

Based on the results of the measurement of the Gross Enrolment Rate for the public universities in terms of accountancy programmes offered, rankings will be provided for each year (2009 to 2012) as well as on the average for the entire period. The results of the measurement of the Gross Enrolment Rate for the period 2009 to 2012 will now be provided.

Figure 1 on the next page presents Gross Enrolment Rates for the public universities in South Africa for each year (2009 to 2012) based on actual headcount enrolment numbers for accountancy related programmes offered by the various universities and the population numbers in the 20-24-year age group. Table 1 in the annexure provides specific rankings of the public universities for each year and average rankings for the universities for the period 2009 to 2012. Table 2 reflects the population numbers in the 20-24-year age group for each year.

FIGURE 1: GROSS ENROLMENT RATES OF PUBLIC UNIVERSITIES IN TERMS OF ACCOUNTANCY PROGRAMMES: 2009 – 2012



(Source: Authors' own calculations)

The Gross Enrolment Rate based on headcount enrolments for accountancy programmes offered by each of the 23 public universities was measured for the period 2009 to 2012. Based on the results, a ranking was assigned for each individual year as well as on the average Gross Enrolment Rate over this period. As can be seen in figure 1 and the results set out in table 1 in Annexure A, the University of South Africa ranked number 1 with the highest Gross Enrolment Rate for each of the individual years as well as on average for the period. The Gross Enrolment rate of the University of South Africa is far greater than even that of the University of Johannesburg which consistently ranked number 2. This is a clear indication of the immense contribution the University of South Africa is making in terms of headcount enrolments for accounting related programmes and also in making higher education more accessible to students wanting to pursue an accounting career.

Over the period 2009 to 2013 an average of 95,204 students enrolled for accounting related programmes at the 23 public universities in South Africa. The University of South Africa contributed 46.78% (total average headcount enrolments of 44,539) of this average. It is however worrying to note that the total headcount enrolments for accounting related programmes at the public universities in South Africa dropped by 4.24% (4,140 students) from 2009 to 2013 even though the University of South Africa managed to increase its headcount enrolments by 2.99% (1,324 students) over the same period. In order to address the financial skills shortage and especially the scarcity of accountants in South Africa, these decreases in headcount enrolments should be identified and investigated for each public university as well as on an overall basis.

6.2 Educational attainment rate

Educational attainment comparisons are a well-known concept and measuring thereof is a valuable indicator of the accessibility of higher education (Steyn, no date). The Organisation for Economic Co-operation and Development (hereafter referred to as OECD) makes use of four methods to measure the level of education pertaining to individuals, certain groups of individuals and countries. In their annual Education at a Glance, 2013 edition (OECD, 2013), the indicators are as follows:

1. Level of attainment is measured for higher education as the total number of persons aged 25-64 years with International Standard Classification of Education (hereafter referred to as ISCED) 1997 type 5A, 5B and 6 qualifications as a percentage of the population in the same age group. It is also calculated on a similar basis for the 25-34-year age group. The data obtained for this study did not provide the age data required to calculate this method and therefor the level of attainment was not calculated for purposes of this study.
2. Graduation rate is also used as a method to calculate educational attainment as it provides an indication of what throughput rates are likely to be. Graduation rate is calculated as the total number of graduates in a particular academic year as a percentage of the total enrolments for that same year (DHET, 2013). This is in line with the method used in the Higher Education Monitor: The state of higher education in South Africa, released by the Council on Higher Education (CHE, 2009) as well as the method as set out in the National Plan for Higher Education (Ministry of Education, 2001).
3. Estimated percentage of young adults expected to successfully graduate from a certain level of education in their lifetimes. This relates to the estimated percentage of persons from a specific age cohort that will complete their higher education over their lifetimes based on current levels of graduation. Due to the unavailability of age cohort data, this method was not calculated for this study.
4. An estimation of the percentage of students that enter a programme and complete that programme successfully in a given period of time. This is calculated as the percentage of

new entrants into a specific level of education who graduate with a minimum of a first degree at this level. Again cohorts are mainly used and were not available and thus this method was not used in this study.

Based on the limitations of the methods as set out previously, the graduation rate was selected as the only method to calculate educational attainment for this study and will be calculated as follows:

$$\frac{\text{Total number of } \textbf{\textit{graduates at each}} \text{ of the 23 public universities in SA in terms of accountancy related programmes}}{\text{Total number all } \textbf{\textit{headcount enrolments at each}} \text{ of the 23 public universities in SA in terms of accountancy related programmes}} \times 100$$

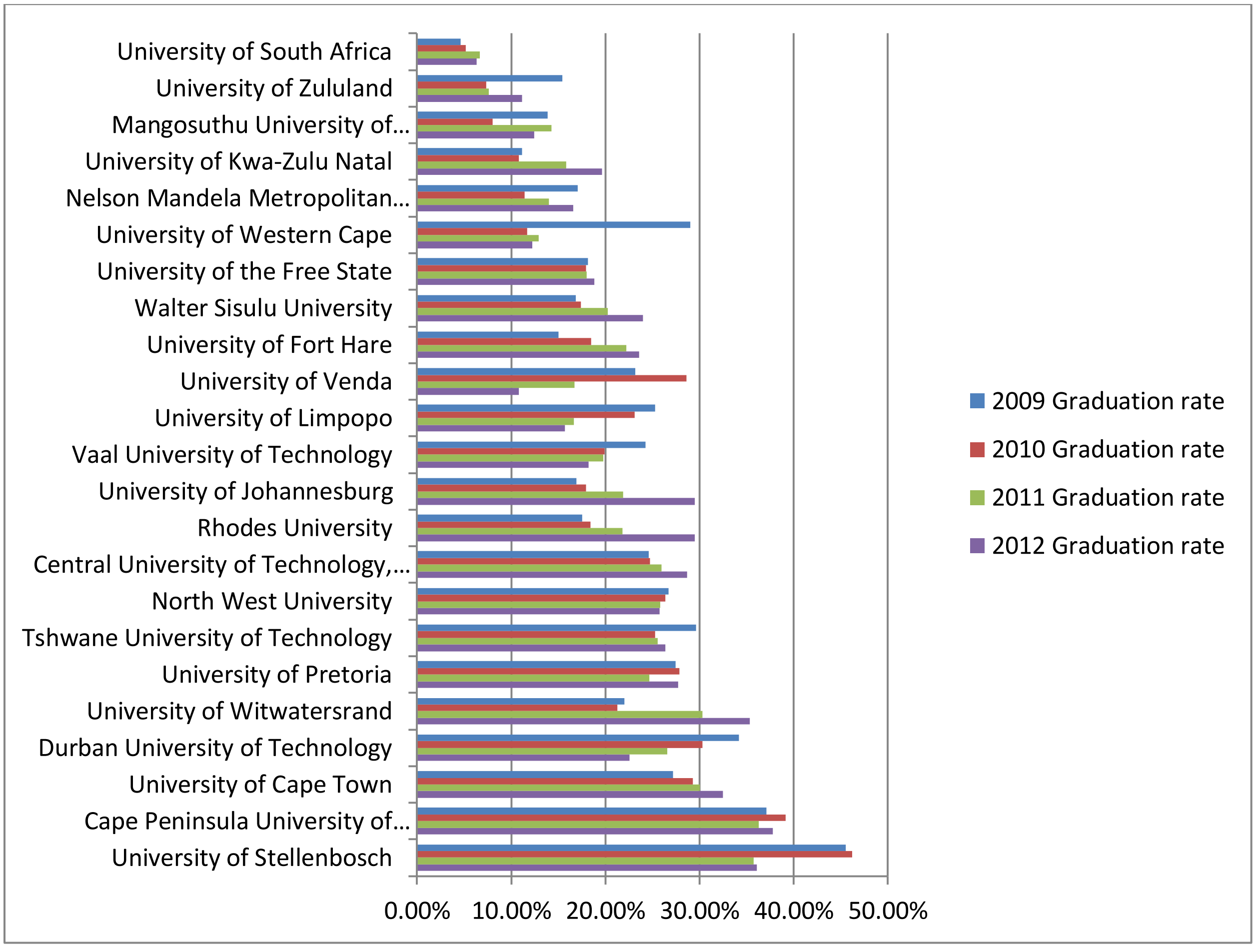
and

$$\frac{\text{Total number of } \textbf{\textit{graduates}} \text{ at public universities in SA } \textbf{\textit{in total}} \text{ in terms of accountancy related programmes}}{\text{Total number all } \textbf{\textit{headcount enrolments}} \text{ at the public universities in SA } \textbf{\textit{in total}} \text{ in terms of accountancy related programmes}} \times 100$$

Based on the results of the measurement of the graduation rates for accountancy related programmes offered at the public universities, rankings will be provided for each year (2009 to 2012) as well as on the average for the entire period. The results of the measurement of the graduation rate for the period 2009 to 2012 will now be provided.

Figure 2 (supported by table 3 in the annexure) provides the results of the measurement of the graduation rate for each of the 23 public universities in South Africa for the period 2009 to 2012.

FIGURE 2: GRADUATION RATES OF PUBLIC UNIVERSITIES IN TERMS OF ACCOUNTANCY PROGRAMMES: 2009 – 2012



(Source: Authors' own calculations)

From table 3 in the annexure it can clearly be seen that the average graduation rate for the 23 public higher education institutions in South Africa in terms of accountancy programmes has increased from 2009 (at 14.96%) to 2012 (at 15.65%). Despite the increase in the graduation rate over this period, these rates however remain very low. Although the University of South Africa ranked low in respect of graduation rates, the importance of this university in increasing access to higher education in South Africa cannot be forgotten. In terms of the relative numbers of graduates that this university produces, it plays a vital role in improving access to accountancy programmes in South Africa.

Although the University of Stellenbosch ranked number 9 overall for the Gross Enrolment Rate, it managed to rank almost consistently number 1 in terms of graduation rates. The opposite is unfortunately true for the University of South Africa which ranked number 1 overall for the Gross Enrolment Rate but almost consistently ranked number 23 in terms of the graduation rates. This is indeed worrying as only 2,788 (average for the period 2009 to 2012) students from an average enrolment of 44,539 (for the same period) in accounting related programmes at the

University of South Africa managed to successfully complete their qualifications. The focus of increasing accessibility of accountancy programmes offered at public universities and ultimately meeting the financial skills demand in South Africa cannot merely be that of increasing headcount enrolments. There has to be a stronger focus on increasing the graduation rates of accountancy programmes offered at these public universities in South Africa.

6.3 Educational Equality Index

Equity in education is almost never without barriers. Mdepa and Tshiwula (2012) explain that this is even more so for persons from disadvantaged backgrounds in African countries where these persons are faced with numerous obstacles in terms of educational opportunities. Students from disadvantaged backgrounds are generally not well represented in higher education institutions. It is therefore clear that a student's socio-economic background most likely plays a major role in access to higher education opportunities. Parental occupation, parental education level, social class, socio-economic status, race, average parental income, among others, are all metrics that could be used as proxies to measure educational inequality (Educational Policy Institute, 2004). A well-known proxy that can be used to measure educational inequality is parental education level, which measures the extent to which students from a higher socio-economic background are better represented in higher education than those from a lower socio-economic background (Usher and Medow, 2010; Usher and Cervenan, 2005; Murakami and Blom, 2008). The Global Rankings report for 2005 and 2010 made use of the proxy of parental education level to measure the Educational Equality Index and measured it as:

$$\frac{\text{The percentage of all males 45-65 with a higher education degree}}{\text{The percentage of all students at a higher education institution whose fathers have higher education degrees}} \times 100$$

Although the Educational Equality Index, based on various proxies, is an internationally used indicator for measuring accessibility of higher education, the information needed to calculate parental education levels for accountancy related programmes offered at the public universities in South Africa could not be obtained and therefore the Educational Equality index could not be calculated for purposes of this study.

6.4 Gender Parity Index

This indicator is mostly used to measure gender inequality internationally and is considered to be an indication of the progress made towards gender parity in educational opportunities and participation (OECD, 2011). It is measured by dividing the female value of a certain indicator by the male value of that same indicator. A Gender Parity Index score of 1 indicates parity between females and males whereas a score of less than 1 indicates disparity in favour of males. A score of more than one indicates disparity in favour of females (UNESCO, 2014). Gender Parity Index is mostly calculated on the basis of on Gross Enrolment Rates (Usher and Medow, 2010; Usher and Cervenan, 2005; Murakami and Blom, 2008; UNESCO, 2014) but can, however, be measured on level of attainment as well. Gross Enrolment Rate is also used in the calculation of Gender Parity Index in South Africa (The National Coordinating Committee, 2013) in order to measure progress made towards the Millennium Development Goals. The Gender Parity Index will, however, not be measured for purposes of this study.

6.5 Overall assessment

The four indicators that were measured in the Global Rankings report for 2005 and 2010 (Usher and Cervenan, 2005; Usher and Medow, 2010) were assigned certain weightings based on their importance according to the researchers in these reports. These weightings were assigned as follows:

1. Participation rate: 25%
2. Educational attainment rate: 25%
3. Educational Equity Index: 40%
4. Gender Parity Index: 10%

As the Educational Equity Index and the Gender Parity Index were not measured for this study, the participation rate (Gross Enrolment Rate) and the educational attainment rate (Graduation Rate) were both assigned a weighting of 50% for purposes of this study as they are considered to be equally important. The weightings assigned to accessibility indicators (Usher and Cervenan, 2005; Usher and Medow, 2010; Murakami and Blom, 2008) are relatively subjective in nature and the weightings were purely assigned in this study in order to draw overall conclusions and provide rankings based on accessibility of accountancy programmes. The weightings assigned in this study are therefore purely a departure point and not cast in stone. The rankings are however of crucial importance and therefore future research could be conducted on the various weightings that the public universities, the DHET and various other stakeholders would assign to the methods and indicators that are used to measure the accessibility of higher education in South Africa. Based on the weightings of 50% for participation rate and 50% for educational attainment rate, an overall ranking is calculated for the 23 public universities in South Africa in terms of accountancy related programmes. This overall accessibility ranking of the public universities in South Africa in terms of accountancy programmes offered is set out in table 4 in the annexure.

7 Discussion and conclusion

This study provides valuable information on two important accessibility indicators measured for accountancy programmes offered by public universities in South Africa. From the measurement and the subsequent rankings, the DHET, the South African government and other relevant stakeholders can assess which public universities have problems in terms of accessibility that needs to be addressed. Increased headcount enrolments and equally high graduation rates can narrow the gap between the demand and supply of accountants in South Africa which in turn will assist in addressing the current financial skills shortage experienced.

Table 4 indicates that the Cape Peninsula University of Technology consistently ranked number 1 for each of the respective years as well as on average over the period 2009 to 2012. This university performed relatively well in terms of high Gross Enrolment Rates for accountancy programmes but performed exceptionally well in terms of graduation rates. The University of Stellenbosch ranked number 2 in 2010, 2011 and on average and ranked number 3 in 2009 and 2012. Although this university did not have the highest enrolment figures, the graduation rates were excellent (ranking number 1 in 2009, 2010 and on average). Much can be learnt from these two universities and the measures they have taken over the last few years for increased accessibility. The University of Zululand ranked in last place for 2010, 2011 and on average over the period. With low enrolment rates as well as low graduation rates this is not surprising.

The University of South Africa, although ranking number 1 consistently in terms of Gross Enrolment Rates, did not perform well overall on the rankings due to its low graduation rates. If these low graduation rates at the University of South Africa are addressed as a matter of urgency, there is no doubt that this university could make an immense contribution in the supply of accountants and the financial skills shortage. This university provides an opportunity to students with financial constraints as students can study on a part-time basis and work to pay their tuition fees. It also provides an opportunity to those who are geographically removed from residential universities such as those students living in rural areas, townships or informal settlements. Although this university obtained an average ranking, it still makes a remarkable contribution towards overall accessibility of accountancy programmes in South Africa.

The ranking of the public universities in South Africa based on accessibility of accountancy programmes provides an indication of how each university is performing in the task of addressing the financial skills crisis, specifically relating to accountancy, in South Africa. It not only gives each individual university an indication of how it is performing but makes it possible to compare the public universities with each other based on accessibility indicators. By providing the results of the accessibility indicators over a period of time, as was done in this study, progress can be closely monitored by governing bodies such as the DHET and corrective measures can be implemented pro-actively where problems are identified.

Although headcount enrolments across the public universities in terms of accountancy related programmes do not seem too low, the graduation rates are a cause for concern.

It is strongly recommended that accessibility of scarce skills occupations, particularly that of accountancy in South Africa, be measured regularly on an overall basis as well as for each public university. It is also recommended that specific targets should be set by the DHET for these accessibility indicators, specifically for scarce skills occupations such as accountancy, to measure the performance of public universities in South Africa.

If South Africa wants to compete in a global economy and meet the demand of financial skills required to do so, the measurement of accessibility indicators for accountancy programmes offered and the ranking of the public universities based on the results should become priority. Problems relating to the accessibility of higher education or the scarce skills shortage cannot be ignored. Structured plans and overview processes are desperately needed whereby the public universities in South Africa can be regularly measured and ranked which could subsequently force them to address serious accessibility problems in terms of accountancy related programmes.

ANNEXURE

TABLE 1: GROSS ENROLMENT RATES AND RANKINGS FOR PUBLIC HIGHER EDUCATION INSTITUTIONS IN SOUTH AFRICA IN TERMS OF ACCOUNTANCY PROGRAMMES FOR THE PERIOD 2009 TO 2012

Higher education institution	Gross Enrolment Rate (%)	Ranking	Gross Enrolment Rate (%)	Ranking	Gross Enrolment Rate (%)	Ranking	Gross Enrolment Rate (%)	Ranking	Average GER for 2009 - 2012 (%)	Ranking based on average GER
University of South Africa	**0.93%**	**1**	**0.89%**	**1**	**0.93%**	**1**	**0.92%**	**1**	**0.92%**	**1**
University of Johannesburg	**0.17%**	**2**	**0.13%**	**2**	**0.18%**	**2**	**0.15%**	**2**	**0.16%**	**2**
Tshwane University of Technology	**0.11%**	**3**	**0.11%**	**3**	**0.10%**	**3**	**0.09%**	**3**	**0.10%**	**3**
University of KwaZulu-Natal	**0.09%**	**4**	**0.09%**	**4**	**0.07%**	**5**	**0.06%**	**4**	**0.08%**	**4**
Walter Sisulu University	**0.07%**	**5**	**0.08%**	**5**	**0.08%**	**4**	**0.06%**	**4**	**0.07%**	**5**
Cape Peninsula University of Technology	**0.07%**	**5**	**0.05%**	**7**	**0.05%**	**6**	**0.05%**	**5**	**0.06%**	**6**
Durban University of Technology	**0.07%**	**5**	**0.05%**	**7**	**0.05%**	**6**	**0.05%**	**5**	**0.06%**	**6**
University of Cape Town	**0.07%**	**5**	**0.05%**	**7**	**0.03%**	**8**	**0.03%**	**7**	**0.05%**	**7**
Nelson Mandela Metropolitan University	**0.05%**	**7**	**0.05%**	**7**	**0.05%**	**6**	**0.05%**	**5**	**0.05%**	**7**
North West University	**0.06%**	**6**	**0.04%**	**8**	**0.04%**	**7**	**0.04%**	**6**	**0.05%**	**7**
University of Pretoria	**0.07%**	**5**	**0.04%**	**8**	**0.04%**	**7**	**0.04%**	**6**	**0.05%**	**7**
Vaal University of Technology	**0.04%**	**8**	**0.05%**	**7**	**0.05%**	**6**	**0.04%**	**6**	**0.05%**	**7**
University of the Free State	**0.04%**	**8**	**0.05%**	**7**	**0.04%**	**7**	**0.05%**	**5**	**0.04%**	**8**
University of Witwatersrand	**0.05%**	**7**	**0.06%**	**6**	**0.04%**	**7**	**0.03%**	**7**	**0.04%**	**8**
University of Limpopo	**0.01%**	**11**	**0.02%**	**10**	**0.04%**	**7**	**0.04%**	**6**	**0.03%**	**9**
University of Stellenbosch	**0.03%**	**9**	**0.03%**	**9**	**0.03%**	**8**	**0.03%**	**7**	**0.03%**	**9**
Mangosuthu University of Technology	**0.03%**	**9**	**0.03%**	**9**	**0.03%**	**8**	**0.03%**	**7**	**0.03%**	**9**
Central University of Technology, Free State	**0.02%**	**10**	**0.02%**	**10**	**0.02%**	**9**	**0.02%**	**8**	**0.02%**	**10**
University of Fort Hare	**0.01%**	**11**	**0.02%**	**10**	**0.02%**	**9**	**0.02%**	**8**	**0.02%**	**10**
University of Venda	**0.03%**	**9**	**0.03%**	**9**	**0.02%**	**9**	**0.02%**	**8**	**0.02%**	**10**
University of Western Cape	**0.01%**	**11**	**0.02%**	**10**	**0.02%**	**9**	**0.02%**	**8**	**0.02%**	**10**
Rhodes University	**0.01%**	**11**	**0.01%**	**11**	**0.01%**	**10**	**0.01%**	**9**	**0.01%**	**11**
University of Zululand	**0.01%**	**11**	**0.01%**	**11**	**0.02%**	**9**	**0.02%**	**8**	**0.01%**	**11**
	2.05%		**1.94%**		**1.96%**		**1.88%**			

Source: Headcount enrolments in higher education for 23 public universities: DHET as extracted from HEMIS (DHET, 2014a). More detail on the calculations can be obtained from the author.

TABLE 2: POPULATION IN 20-24-YEAR AGE GROUP, 2009-2012

Year	Population in 20-24-year age group in South Africa
2009	**4 770 069**
2010	**4 827 824**
2011	**4 896 792**
2012	**4 966 691**

Source: Statistics South Africa, 2013.

TABLE 3: GRADUATION RATES AND RANKINGS FOR PUBLIC HIGHER EDUCATION INSTITUTIONS IN SOUTH AFRICA IN TERMS OF ACCOUNTANCY PROGRAMMES FOR THE PERIOD 2009 TO 2012

Public Higher education institution	2009 Graduation rate (%)	2009 Ranking	2010 Graduation rate (%)	2010 Ranking	2011 Graduation rate (%)	2011 Ranking	2012 Graduation rate (%)	2012 Ranking	Average graduation rate for 2009 - 2012	Ranking based on average graduation rate
University of Stellenbosch	45.55%	1	46.20%	1	35.73%	2	36.11%	2	40.90%	1
Cape Peninsula University of Technology	37.12%	2	39.15%	2	36.31%	1	37.77%	1	37.59%	2
University of Cape Town	27.22%	7	29.30%	4	30.03%	4	32.48%	4	29.76%	3
Durban University of Technology	34.20%	3	30.33%	3	26.57%	5	22.55%	13	28.41%	4
University of Witwatersrand	22.04%	13	21.25%	11	30.34%	3	35.37%	3	27.25%	5
University of Pretoria	27.50%	6	27.84%	6	24.69%	9	27.72%	8	26.93%	6
Tshwane University of Technology	29.62%	4	25.31%	8	25.56%	8	26.40%	9	26.72%	7
North West University	26.75%	8	26.36%	7	25.81%	7	25.76%	10	26.17%	8
Central University of Technology, Free State	24.61%	10	24.75%	9	26.00%	6	28.70%	7	26.02%	9
Rhodes University	17.51%	15	18.41%	14	21.82%	12	29.52%	5	21.81%	10
University of Johannesburg	16.91%	17	17.95%	15	21.91%	11	29.51%	6	21.57%	11
Vaal University of Technology	24.28%	11	19.89%	12	19.76%	14	18.23%	16	20.54%	12
University of Limpopo	25.27%	9	23.15%	10	16.68%	17	15.72%	18	20.20%	13
University of Venda	23.18%	12	28.61%	5	16.76%	16	10.83%	22	19.84%	14
University of Fort Hare	15.01%	20	18.49%	13	22.23%	10	23.59%	12	19.83%	15
Walter Sisulu University	16.87%	18	17.44%	17	20.26%	13	24.03%	11	19.65%	16
University of the Free State	18.17%	14	17.94%	16	18.01%	15	18.85%	15	18.24%	17
University of Western Cape	29.04%	5	11.72%	18	12.90%	21	12.21%	20	16.47%	18
Nelson Mandela Metropolitan University	17.08%	16	11.45%	19	14.04%	20	16.56%	17	14.78%	19
University of Kwa-Zulu Natal	11.16%	22	10.82%	20	15.82%	18	19.63%	14	14.36%	20
Mangosuthu University of Technology	13.89%	21	8.03%	21	14.28%	19	12.45%	19	12.16%	21
University of Zululand	15.43%	19	7.36%	22	7.62%	22	11.16%	21	9.84%	22
University of South Africa	4.65%	23	5.14%	23	6.70%	23	6.35%	23	6.26%	23
	14.96%		15.14%		15.02%		15.65%			

Sources: Headcount enrolments in higher education for 23 public universities: DHET as extracted from HEMIS (DHET, 2014a). More detail on the calculations can be obtained from the author.

Graduates for 23 public universities: DHET as extracted from HEMIS (DHET, 2014b).

TABLE 4: OVERALL ACCESSIBILITY RANKINGS OF PUBLIC UNIVERSITIES IN SOUTH AFRICA IN TERMS OF ACCOUNTANCY PROGRAMMES FOR THE PERIOD 2009 TO 2012

Higher education institution	2009	2009	2009	2009	2010	2010	2010	2010	2011	2011	2011	2011	2012	2012	2012	2012	2009-2012	2009-2012	2009-2012	2009-2012
	Gross Enrolment Rate Ranking	**Graduation rate Ranking**	**50% GER + 50% grad rate**	**Overall ranking for 2009**	**Gross Enrolment Rate Ranking**	**Graduation rate Ranking**	**50% GER + 50% grad rate**	**Overall ranking for 2010**	**Gross Enrolment Rate Ranking**	**Graduation rate Ranking**	**50% GER + 50% grad rate**	**Overall ranking for 2011**	**Gross Enrolment Rate Ranking**	**Graduation rate Ranking**	**50% GER + 50% grad rate**	**Overall ranking for 2012**	**Ranking based on average Gross Enrolment Rate**	**Ranking based on average graduation rate**	**50% GER + 50% grad rate**	**Overall ranking for 2009 -2012**
University of South Africa	1	23	12.0	**13**	1	23	12.0	**11**	1	23	12.0	**14**	1	23	12.0	**13**	1	23	12.0	**8**
University of Johannesburg	2	17	9.5	**8**	2	15	8.5	**6**	2	11	6.5	**5**	2	6	4.0	**2**	2	11	6.5	**3**
Tshwane University of Technology	3	4	3.5	**1**	3	8	5.5	**3**	3	8	5.5	**3**	3	9	6.0	**6**	3	7	5.0	**2**
University of KwaZulu-Natal	4	22	13.0	**14**	4	20	12.0	**11**	5	18	11.5	**13**	4	14	9.0	**10**	4	20	12.0	**8**
Walter Sisulu University	5	18	11.5	**12**	5	17	11.0	**9**	4	13	8.5	**9**	4	11	7.5	**8**	5	16	10.5	**6**
Cape Peninsula University of Technology	5	2	3.5	**1**	7	2	4.5	**1**	6	1	3.5	**1**	5	1	3.0	**1**	6	2	4.0	**1**
Durban University of Technology	5	3	4.0	**2**	7	3	5.0	**2**	6	5	5.5	**3**	5	13	9.0	**10**	6	4	5.0	**2**
University of Cape Town	5	7	6.0	**5**	7	4	5.5	**3**	8	4	6.0	**4**	7	4	5.5	**5**	7	3	5.0	**2**
Nelson Mandela Metropolitan University	7	16	11.5	**12**	7	19	13.0	**13**	6	20	13.0	**16**	5	17	11.0	**12**	7	19	13.0	**10**
North West University	6	8	7.0	**6**	8	7	7.5	**5**	7	7	7.0	**6**	6	10	8.0	**9**	7	8	7.5	**4**
University of Pretoria	5	6	5.5	**4**	8	6	7.0	**4**	7	9	8.0	**8**	6	8	7.0	**7**	7	6	6.5	**3**
Vaal University of Technology	8	11	9.5	**8**	7	12	9.5	**7**	6	14	10.0	**11**	6	16	11.0	**12**	7	12	9.5	**5**
University of the Free State	8	14	11.0	**11**	7	16	11.5	**10**	7	15	11.0	**12**	5	15	10.0	**11**	8	17	12.5	**9**
University of Witwatersrand	7	13	10.0	**9**	6	11	8.5	**6**	7	3	5.0	**2**	7	3	5.0	**4**	8	5	6.5	**3**
University of Limpopo	11	9	10.0	**9**	10	10	10.0	**8**	7	17	12.0	**14**	6	18	12.0	**13**	9	13	11.0	**7**
University of Stellenbosch	9	1	5.0	**3**	9	1	5.0	**2**	8	2	5.0	**2**	7	2	4.5	**3**	9	1	5.0	**2**
Mangosuthu University of Technology	9	21	15.0	**15**	9	21	15.0	**15**	8	19	13.5	**17**	7	19	13.0	**14**	9	21	15.0	**12**
Central University of Technology, Free State	10	10	10.0	**9**	10	9	9.5	**7**	9	6	7.5	**7**	8	7	7.5	**8**	10	9	9.5	**5**
University of Fort Hare	11	20	15.5	**16**	10	13	11.5	**10**	9	10	9.5	**10**	8	12	10.0	**11**	10	15	12.5	**9**
University of Venda	9	12	10.5	**10**	9	5	7.0	**4**	9	16	12.5	**15**	8	22	15.0	**17**	10	14	12.0	**8**
University of Western Cape	11	5	8.0	**7**	10	18	14.0	**14**	9	21	15.0	**18**	8	20	14.0	**15**	10	18	14.0	**11**
Rhodes University	11	15	13.0	**14**	11	14	12.5	**12**	10	12	11.0	**12**	9	5	7.0	**7**	11	10	10.5	**6**
University of Zululand	11	19	15.0	**15**	11	22	16.5	**16**	9	22	15.5	**19**	8	21	14.5	**16**	11	22	16.5	**13**

Source: Author's own calculations

Bibliography

CHE. 2009. *Higher Education Monitor 8: The state of higher education in South Africa* [online]. Pretoria: Council on Higher Education. Available from: http://www.che.ac.za/sites/default/files/publications/Higher_Education_Monitor_8.pdf [Accessed 31 March 2014].

CHE. 2013. *VitalStats: Public Higher Education, 2011* [online]. Pretoria: Council on Higher Education. Available from: http://www.che.ac.za/sites/default/files/publications/CHE_VitalStats_2011.pdf [Accessed 19 March 2014].

DHET. 2010. *Strategic plan 2010/2011 to 2014/2015* [online]. Pretoria: Department of Higher Education and Training. Available from: http://planipolis.iiep.unesco.org/format_liste1_en.php?Chp2=South+Africa [Accessed 9 March 2014].

DHET. 2013. *White paper for post-school education and training: building an expanded, effective and integrated post-school system* [online]. Pretoria: Department of Higher Education and Training. Available from: http://www.saqa.org.za/docs/papers/2014/post_school.pdf [Accessed 8 February 2014].

DHET. 2014a. *Enrolments* [online]. Available from: http://www.dhet.gov.za/Structure/Universities/ManagementandInformationSystems/Enrolment/tabid/468/Default.aspx [Accessed 25 March 2014].

DHET. 2014b. *Graduates* [online]. Available from: http://www.dhet.gov.za/ [Accessed 3 April 2014].

Educational Policy Institute. 2004. *A new measuring stick; Is access to higher education in Canada equitable?* [online] Toronto, ON: Educational Policy Institute. Available from: http://www.educationalpolicy.org/pdf/measuringstick.pdf [Accessed 7 April 2014].

Fin24. 2013. *Skills shortage hampers business –survey* [online]. Available from: http://www.fin24.com/Economy/Skills-shortage-hampers-business-survey-20130509 [Accessed 21 July 2014].

Kaiser, F. and O'Heron, H. 2005. *Myths and methods on access and participation in higher education in international comparison* [online]. Enschede: Center for Higher Education Policy Studies. Available from: http://www.utwente.nl/mb/cheps/publications/publications%202006/myths.pdf [Accessed 19 March 2014].

Kurihara, Y. 2013. 'Does financial skill promote economic growth?', *International Journal of Humanities and Social Science*, 3(8):92-97.

Marshall, N. 2014. Accountancy SA: Specia*l report – Turning the tide on the skills shortage* [online]. Available from: http://www.accountancysa.org.za/special-report-employees/ [Accessed 1 December 2014].

Mdepa, W. and Tshiwula, L. 2012. 'Student diversity in South African higher education', *Widening participation and lifelong learning*, 3:19-33.

Ministry of Education. 2001. *National plan for higher education* [online]. South Africa: Ministry of Education. Available from: http://chet.org.za/manual/media/files/chet_hernana_docs/South%20Africa/National/National%20Plan%20for%20HE%20SA.pdf [Accessed 19 March 2014].

Molefi, N. 2014. SABC News: *Poor maths, science pass rate poses challenge: SAICA* [online]. Available from: http://www.sabc.co.za/news/a/f7b2ec00427c6ccca5a6ff56d5ffbd92/Poor-maths,-science-pass-rate-poses-challenge:-SAICA-20140801 [Accessed 1 December 2014].

Murakami, Y. and Blom, A. 2008. *Accessibility and affordability of tertiary education in Brazil, Colombia, Mexico and Peru within a global context* [online]. Washington: The World Bank, Latin America and Caribbean Region, Human Development Sector. Available from: http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099079956815/wps4517.pdf [Accessed 17 June 2011].

Odendaal, E.M. and Joubert, K. 2011. 'Alleviating the critical accounting skills shortage in South Africa: a distance learning perspective', *South African Journal of Accountability and Auditing Research*, 11:23-34.

OECD. 2011. *Report on the Gender Initiative: Gender equality in education, employment and entrepreneurship* [online]. OECD Council at Ministerial level. Available from: http://www.oecd.org/education/48111145.pdf [Accessed 11 April 2014].

OECD. 2013. *Education at a glance 2013: OECD indicators* [online]. OECD Publishing. Available from: http://www.oecd-ilibrary.org/education/education-at-a-glance-2013_eag-2013-en [Accessed 20 March 2014].

SAICA. 2008. *SA searching in vain for 22 000 accountants* [online]. Available from: http://www.saica.co.za/DesktopModules/EngagePublish/printerfriendly.aspx?itemId=1012&PortalId=0&TabId=1185 [Accessed 15 September 2011].

SAIPA. 2014. *The war on talent and financial skills shortage* [online]. Available from: http://www.saipa.co.za/articles/356772/war-talent-and-financial-skills-shortage [Accessed 14 July 2014].

Saunders, M., Lewis, P. & Thornhill, A. 2007. *Research methods for business students*. Fourth edition. United Kingdom: Pearson Education Limited.

South Africa. DHET. 2014. *Call for comments on the National Scarce Skills List: top 100 occupations in demand*. Government Gazette no. 37678 notice 380. Pretoria: Department of Higher Education and Training.

Statistics South Africa. 2013. P0302 *Mid-year population estimates. Additional downloads: provincial projection by sex and age* [online]. Available from: http://beta2.statssa.gov.za/?page_id=1854&PPN=P0302&SCH=5500 [Accessed 14 July 2014].

Steyn, A.G.W. No date. *Measuring student participation in the higher education sector in South Africa* [online]. Stellenbosch: Institutional Research and Planning Division Stellenbosch University. Available from: http://www.matiesalumni.net/portal/page/portal/Administrative_Divisions/INB/Home/Documentation/Documentation_Internal_publications/Measuring%20student%20participation%20in%20the%20HE%20sector%20in%20RSA.pdf [Accessed 19 March 2014].

The National Center for Public Policy and Higher Education. 2008. *Measuring up 2008: the National Report Card on Higher Education* [online]. San Jose, CA: The National Center for Public Policy and Higher Education. Available from: http://measuringup2008.highereducation.org/print/NCPPHEMUNationalRpt.pdf [Accessed 28 August 2011].

The National Coordinating Committee. 2013. *Millennium Development Goals, Country Report 2013* [online]. South Africa: The National Coordinating Committee for the Millennium Development Goals. Available from: http://www.un.org/millenniumgoals/pdf/report-2013/mdg-report-2013-english.pdf [Accessed 9 April 2014].

UNESCO. 2014. Glossary [online]. Available from: http://www.uis.unesco.org/Pages/Glossary.aspx [Accessed 19 March 2014].

Usher, A. and Cervenan, A. 2005. *Global Higher Education Rankings, affordability and accessibility in comparative perspective* [online]. Toronto: Educational Policy Institute. Available from: http://www.educationalpolicy.org/pdf/global2005.pdf [Accessed 18 June 2011].

Usher, A. and Medow, J. 2010. *Global Higher Education Rankings, affordability and accessibility in comparative perspective* [online]. Canada: Higher Education Strategy Associates. Available from: http://higheredstrategy.com/wp-content/uploads/2011/09/GHER2010_FINAL.pdf [Accessed 12 July 2011].

EDU007 Accounting students' adaption to university at a large African university

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Abstract

Orientation: The transition from school to higher education is an exciting experience for some students but it could be a stressful and overwhelming period for some students admitted to higher education institutions. Students need to 'adapt or die' to face different kinds of difficulties on their journey from school to higher education.

Purpose/objective of the study: The purpose of this study was to investigate the concurrent and predictive validity of the Student Adaption to College Questionnaire (SACQ) scores to explore if the adaption from school to university is evident in a sample of South African university accounting students. Factors that were explored that may have an influence on the adaption of students to university were; age, gender, race, choice of degree, the school the student attended prior to the university, university tuition fees and place of residence while studying at the university.

Research questions: In order to achieve the aim of the study the following questions were addressed; 'What is the current 'make up' of accounting students that could influence the adaption of students to university attainment?' and 'What is the relationship between the adaption of accounting students to university and academic performance by investigating the concurrent and predictive validity of the Student Adaption to College Questionnaire (SACQ) scores?'

Research method: The research method was quantitative in nature; an exploratory study and data was collected in administering an electronic questionnaire.

Main findings and contribution:
The findings offer accounting lecturers the opportunity to have a better understanding and greater sensitivity of their students' make-up' and that there are adjustment problems that influence students' academic performance.

Key words: Accounting, adaption, SACQ, South Africa, student adjustment, university

INTRODUCTION

The transition from school to higher education is the most stressful period of first year university students (Ligadu, Abbas and Han, 2012). According to Yazedjian, Toews and Navarro (2009) a large percentage of students are unsuccessful in navigation this transition. Woollacott, Snell and Laher (2013) furthermore added that students who performed poorly or dropped out start with or are intensified by the difficulties in adjusting quickly and effectively to the social and academic demands in higher education.

In a South African context part of the transitional difficulties are high drop-out rates that cause a threat to the future of the country since a 15% graduation rate is one of the lowest in the world (Letseka and Maile, 2008). Toews and Yazedjian (2007) confirmed that when students withdraw from the university it is often for personal reasons. Also Byrne and Flood (2005) state that transition to higher education can be stressful for students as their ability to both adapt to the type of learning required and to adjust to the environment are affected by their preparedness for higher education. Ligadu et al. (2012) confirm that students will experience many unexpected circumstances adjusting to the new environment including coping with workload, assignments, different teaching methods, working with lecturers and other students.

There are currently 23 universities in South Africa, 11 universities are research-intensive that conduct pure and applied research, six universities are technology based and the remaining six universities are comprehensive universities offering traditional universities programmes (Pitso 2013). The university under review is a public, urban and comprehensive university in South Africa ranked as the highest ranked university in Africa according to the Center for World University Rankings (CWUR) (Wits 2014). This paper reflects on an investigation into the adaptation of accounting students at a large African university where there are extremely large classes, large cultural differences and diverse ranges of prior knowledge (Scott, Yeld and Hendry, 2007; Műller, Prinsloo and Du Plessis, 2007; Steenkamp, Baard and Frick, 2009; Marburger, 2010 and Winebrenner, 2007; Fraser and Killen, 2003). These issues together with socio-economic and financial factors have resulted in many challenges in academic institutions. (Scott *et al*., 2007). This situation also occurs in other countries, like Australia that has shifted the focus of higher education from elitism to mass opportunity (McKenzie and Schweitzer, 2001). The main objective of the paper was to engage in a discussion which focuses on the adaptation of accounting students to higher education.

Fields of study

Medical

Sherina, Rampal and Kaneson (2004) confirmed that first year students enrolling into the medical field are entering a stressful environment that often leads to poor academic performance, psychological, physical and adjustment problems. Smith, Peterson, Degenhardt, and Johnson (2007) state that medical students are the most distressed in their first year of medical school. The study of Nyamayaro and Saravanan (2013) concluded that 99 first year medical students at a private medical university faced negative emotional states of depression, stress and anxiety as medical students are more prone to maladjustment to the university.

Accounting

Arquero and Rioja (2009) examined 619 students enrolled for different degrees in a university in Spain, of which 59.1% are accounting students, to determine how well accounting students adapt to learning styles in comparison with other social science students. Results indicated that accounting students had differences in learning styles comparing to social science students as accounting students are less independent and more competitive. The study of Byrne and Flood (2005) explored 129 accounting students' motives, expectations and preparedness for higher education at an Irish university. The findings indicated that students are primarily motivated to enter higher education, have very positive expectations, well prepared to handle course content and want to perform very well comparing to other studies that reported a lack of preparedness and poor motivation among students (Ozga and Surhanandan, 1998; Boyle, Carter and Clark, 2002). Gul and Fong (1993) examined factors that predict success of 443 first year accounting students at a university in Hong Kong. The findings reports that English grade, personality, being enrolled for a business degree, previous knowledge of accounting, Mathematics grade and self-expectation of examination results were significantly positive associated with academic performance. Akenbor and Ibanichuka, (2014) examined institutional factors influencing academic performance of first year accounting students at a university in Nigeria. They concluded that class size, entry requirement, access to functional library, semester duration, contact hours, and curriculum contents affecting students' achievement in principles of accounting (Akenbor and Ibanichuka, 2014). Hosal-Akman and Simga-Mugan (2010) explored the assessment of the effect of teaching methods on academic performance of second-year accounting students at a Turkish university. The results were expected that the academic performance of the students who actively participated in the accounting course through cooperative learning was to be higher than pervious school learning but no significance effects were observed. A possible reason is that students might have not been ready for the adaptation from school to university (Hosal-Akman and Simga-Mugan, 2010).

Education

Ligadu et al. (2012) investigated the perceptions of first year education and social science students' coping skills at a university and concluded that students indicated that both learning support and social emotional support are needed to cope at universities. Tao, Dong, Pratt, Hunsberger and Pancer (2000) investigated coping and adjustment of 358 freshmen who enrolled at three universities in China, were mostly students in the education field. Findings related to changes in social support during transition indicated that both anxiety and depression increased over the course of the first term of the university (Tao et al., 2000).

Psychology

In the study of Beyers and Goossens (2002) 368 freshmen psychology students from a large European university in Belgium were examined to determine validity of student adaptation. Findings related to predictive validity indicated that attachment and social adjustment subscales were negatively correlated with student attrition. Furthermore concurrent validity indicated that social adjustment and personal-emotional adjustment subscales indicated significant associations with independent real-life criteria (Beyers and Goossens, 2002).

No field of study specified, only a sample of freshmen/first year students

Toews and Yazedjian (2007) indicate that maladjustment is a major problem for university students in most countries that lead to students discontinuing their studies. Sennetta, Finchilescua, Gibsona and Straussa (2003) confirmed that black African participants reported significantly poorer levels of social adjustment and somewhat poorer levels of personal-emotional adjustment than White students in their study which explored the adjustment of Black Students at a Historically White South African University.

Research Instrument

The Student Adaption to College Questionnaire (SACQ) is an instrument that was designed by Baker and Siryk (1984) to assess students' adjustment to college. The purpose of this study is to investigate the adaptation of accounting students to university in using the Student Adaption to College Questionnaire (SACQ) developed by Robert W. Baker, Ph.D. and Bohdan Siryk, M.A. (1989). The SACQ is a 67-item questionnaire designed to measure the effectiveness of student adjustment to college. For the purpose of this research the SACQ has been adapted and the word 'college' was replaced by 'university' as 'university' is used for higher education institutions in a South African context in relation to America. Some questions have been adapted to accommodate the South African context. The SACQ consists of four sections; Academic Adjustment, Social Adjustment, Personal-Emotional Adjustment and Attachment. The Academic Adjustment measures a student's success at coping with the various educational demands characteristic of the university experience. The Social Adjustment subscale contains items relevant to the interpersonal-societal demands of university. The Personal-Emotional subscale is designed to examine how a student is feeling psychologically and physically. The Attachment subscale focuses on a student's satisfaction with the university experience in general and with the university he or she is attending in particular. According to Baker and Siryk (1989) the SACQ is appropriate for use with students at any time during their undergraduate career.

Prior studies using SACQ involve freshmen from colleges or universities in North America (Dahmus, Bernardin, and Bernardin, 1992), Chinese exchange students in Japan (Jou and Fukada, 1995), college students in China (Tao et al., 2000), psychology university students in Belgium (Beyers and Goossens, 2002) and African black and white freshmen attending a historically white South African university (Sennetta et al., 2003). The study of Sennetta et al. (2003) included 339 freshmen from five different first year courses spread across three faculties at a South African university. No studies have been conducted with first and/or second year accounting university students in Africa.

The name 'University' is widely used in South Africa and not 'College' as referred to in the SACQ but for the purpose of this study the researcher will refer to 'University'. The purpose of this study is to investigate the concurrent and predictive validity of the SACQ scores to e determine whether the adaptation from school to university (student life, study experience, social adjustment etc.) is obvious in a sample of South African university accounting students. Factors that were explored that may have an influence on the adaptation of students to university were; age, gender, race, choice of degree, the school the student attended prior to the university, university tuition fees and place of residence while studying at the university. In order to achieve the aim of the study the following two questions were addressed: What is the current 'make up' of accounting students that could influence the adaptation of students to university attainment?' and 'What is the relationship between the adaptation of accounting students to university and academic performance by investigating the concurrent and predictive validity of the Student Adaption to College Questionnaire (SACQ) scores?'

RESEARCH METHODOLOGY

The research method was quantitative, an exploratory study (Leedy and Ormrod, 2010) and data was collected in administering an electronic questionnaire (Bryman and Bell, 2011).

Participants

The sampling frame included all students enrolled for the Accounting I and Financial Accounting II courses in their first and second year of study at a large South African university. The number of students that had registered for Accounting I were 1134 students and for Financial Accounting II 453 students, a total of 1587 accounting students. Both the Accounting I and Financial Accounting II courses are one year courses offered over an academic year. Students were assessed during the year. Each accounting course consists of three tests (April, June and September) and one final exam in November. For each course students attended lectures (four to five periods a week) and tutorials (three periods a week). Lectures and tutorials are compulsory and electronic card readers register students' lecture attendance and manual attendance registers are kept for students attending tutorials. Students also submit projects and assignments as part of the accounting curriculum and write *ad hoc* concept tests in tutorial periods. For the purpose of the study the validity was assessed after the students attended six months of lectures and tutorials in their first and second year of study.

Data Collection

Two sources were used to collect data. Firstly, data was collected from a university computerised database and secondly, data was collected from an on-line electronic questionnaire via the university portal.

Computerised database

For the first source, data was collected from a university computerised database that was made available in a spreadsheet per student number with their academic marks for the April and June tests. Students' marks were expressed as a percentage for both tests. Ethics clearance was obtained from the university's ethics committee validating and approving the empirical study.

Questionnaire

For the second source, data was collected from an on-line electronic questionnaire via the university portal. The SACQ (Baker and Siryk, 1989) was used to measure students' adaptation to university with reference to accounting students. The results provided valuable empirical information into the adaptation of accounting students to university. The SACQ questionnaire was adapted and tailored for accounting students with diverse backgrounds and cultures. The questionnaire consists of two sections; Section 1, biographical data of students including the school attended, who is paying for their university tuition fees and place of residence and Section 2, the adapted SACQ that relates to statements to the adaptation of students to university. The adapted SACQ provided the same subscales as the original SACQ designed by Baker and Siryk (1989) on four aspects or subscales of students' adjustment to university; Academic Adjustment (AC), Social Adjustment (SOC), Personal-emotional Adjustment (PE) and Attachment Adjustment (AT). A 5-point Likert Scale was used, ranging from, 'not at all true for me' to 'very much true for me'. The same scale was used by earlier adaptations of the SACQ (Beyers and Goossens, 2002; Tao et al., 2000; Jou and Fukada, 1995) in comparison to the original 9-point scale used by Baker and Siryk (1989). As per the SACQ manual guidelines (Baker and Siryk, 1989) the scores are divided into high, average and low indicating that higher scores on this scale indicate that the person is well adjusted, while the low scores indicate adjustment problems.

The original SACQ questions were adapted as follows in the four aspects of adjustments:

- Academic Adjustment (AC) (12 items, originally 24 items): Under the motivation and application clusters; questions were selected that portray a more positive student than asking questions that are negatively inclined like 'Doubts value of college degree' and 'Does not work hard'. Under the performance cluster; questions were excluded that indicated the exam because students at the time of collecting the data had not yet had exams. Questions in the questionnaire on writing papers were excluded since the accounting course does not include writing papers and questions on homework were replaced by emphasizing studying. Under the academic environment cluster, questions were included that dealt with the accounting course and not with neither the program nor the variety of courses. The 12 items selected created a broad framework of the accounting students' academic adjustment.
- Social Adjustment (SOC) (7 items, originally 20 items): Under the general cluster; questions were included that refer to the university life and not the general social activities. Under the other people cluster; the question related to 'roommates' was replaced with 'work in groups' and the question related to 'difficultly feeling at ease with others' was adjusted to 'feel inferior to my fellow class mates' to obtain information from students with different backgrounds and cultures. Under the cluster nostalgia; the lonely and lonesome questions were excluded to not portray a deserted or isolated feeling among students. The social environment cluster was omitted as most students commute to the university, do not stay in hostels and are not involved in extracurricular activities due to the long hours traveling to the university. The 7 items selected created a broad framework of the accounting students' social adjustment.
- Personal-emotional (PE) Adjustment (6 items, originally 15 items): Under the psychological cluster; questions were included that deal with worries about university expenses and related actions thereof as some students tuition fees are paid by the National Student Financial Aid Scheme (NSFAS). Under the physical cluster; the 'lot of headaches' question was replaced by 'spend more than two hours travelling to the university' and questions relating to weight and feeling tired were excluded. The 6

items selected created a broad framework of the accounting students' personal-emotional adjustment.

- Attachment Adjustment (AT) (2 items, originally 15 items): Only two questions were included 'I think a lot about dropping out of university permanently' and 'I am pleased about attending this university'. The 2 items selected created summary of the accounting students' attachment adjustment referring to the university.

The total number of items in the adapted SACQ is 27 items (compared to the 67 items as per Baker and Siryk, 1989) and in the study of Tao et al. (2000) 28 items were used. The word 'college' was replaced with 'university' throughout the questionnaire. Another reason for adapting the original SACQ questionnaire was due to time constraints as the first year accounting students were also required to complete, the Parental Authority Questionnaire (PAQ) and the Big Five Inventory (BFI) questionnaire. According to Sennett et al. (2003) the completion time for the 67-item SACQ was approximately 25-50 minutes but according to Nyamayaro and Saravanan (2013) it took 15 to 20 minutes to complete.

Students were briefed by the lecturer in the Accounting I and Financial Accounting II lectures to complete the on-line questionnaire on 'Adaptation of students to university' and the link to the questionnaire was posted on the university portal. The lecturer explained the purpose and value of the research and ensured that the data will be treated as confidential. Students were asked to provide their student numbers to link the questionnaire results and academic marks. Students were assured that the data would be reported anonymously in a group and not as individuals.

Data analysis

A spreadsheet was extracted from the server containing the results of the questionnaire and thereafter the marks were captured on the spreadsheet. The SPSS statistical package was used to analyse the data. A statistical analysis was conducted and basic frequencies were used to describe the sample. Cross tabulations with an appropriate test for independence was conducted to determine whether two categorical variables were related. Descriptive analysis provided a very useful initial examination of the data. Multiple linear regression analysis was used to determine associations for Academic Adjustment. The relationship between the different variables was tested using the Pearson's rho value.

RESULTS AND DISCUSSION

A response rate of 83.8% (n = 951) was achieved from the number of Accounting I students sampled (1134) and a response rate of 94.7% (n = 429) was achieved from the number of Financial Accounting II students sampled (453). A total response rate of 92.6% (n = 1470) was achieved from the Accounting students sampled (1587). Of these, 1380 usable responses were included in the analysis. Descriptive statistics are; 55% were male students, student's mean age of 19,48 years, 75.6% of students were registered for the Chartered Accountant (CA) degree and 22.3% of the students were registered for the General Commerce degree, 67.1% are African, 19.3% Indian, 10.7% White and 2.9% Other (Coloured and Asian); 67,6% of the students were in their first year, 29.7% in second and 2.7% in their third year of study due to students that have repeated the Accounting I or Financial Accounting II course. The majority of students attended government schools, (70.3%) while the rest of the students attended private schools, 29.7%. Most students stay at home (39.4%), 31.5% of the students stay in university hostels, 18.0% stay in a Braamfontein and other students make use of private accommodation. Nearly 50% of the students' parents pay for their tuition fees, while other fees are paid mainly by National Student Financial Aid Scheme (NSFAS) (15.2%) followed by a family member and the bank, both 2.6%. The NSFAS loans to students increased fivefold from 1995 to 2005 (Letseka and Maile, 2008).

Table 1: Total Student Adjustment Items

Items	Mean	Median	Mode	Std. Dev
I have well-defined academic goals	1.72	2	1	0.782
I consider a university degree important	1.24	1	1	0.523
I enjoy academic work	2.23	2	2	0.911
Motivation	5.19	5	4	2.216
I keep up-to-date with academic work	2.42	2	2	0.899
I am not motivated to study	3.43	3	3	1.17
I attend most of my lectures regularly	1.59	1	1	0.836
Application	7.44	6	6	2.905
I found academic work difficult	4.12	4	4	0.979
I do not feel smart enough for the course work	3.51	3	3	1.166
I do not use study time efficiently	4.09	4	5	1.113
I have trouble concentrating when studying	4.05	4	5	1.156
Performance	15.77	15	17	4.414
I am satisfied with the quality of the courses	2.18	2	2	0.947
I am satisfied with the lectures	2.33	2	2	0.938
Academic environment	4.51	4	4	1.885
TOTAL ACADEMIC ADJUSTMENT	32.91	30	31	11.42
I am very involved with university social activities	3.55	4	4	1.13
I am adjusting well to the university	2.32	2	2	0.915
General Social Adjustment	5.87	6	6	2.045
I work well in random selected groups	2.6	2	2	1.123
I am meeting people and making friends	2.2	2	2	0.997
I do not mix well with opposite sex	2.96	3	2	1.027
I feel inferior to my fellow class mates	3.24	3	3	1.132
Social Adjustment People	11.00	10	9	4.279
I would rather be home	3.323	3	3	1.2404
Social Adjustment Nostalgia				
TOTAL SOCIAL ADJUSTMENT	20.19	19	18	7.56

Being independent has not been easy	3.91	4	3	1.232
Gets angry too easily lately	3.46	3	3	1.203
Worries a lot about university expenses	4.18	4	5	1.362
Psychological	11.55	11	11	3.80
Is not sleeping well	3.78	4	3	1.239
Feels in good health	2.44	2	2	1.0724
Spend more than 2 hours to travel to the university	2.78	2	2	1.198
Physical	9.00	8	7	3.5094
TOTAL PERSONAL EMOTIONAL ADJUSTMENT	20.55	19	18	7.31
I think a lot about dropping out of university permanently	2.58	2	2	0.929
I am pleased about attending this university	1.72	1	1	0.93
TOTAL ATTACHMENT	4.3	3	3	1.859
TOTAL ENTIRE ADJUSTMENT	77.95	71	70	28.15

The study of Sennetta et al. (2003) confirmed that no significant differences were found between black African and White participants on academic adjustment or institutional commitment. However Sennetta et al. (2003) found that black African participants reported significantly poorer levels of social adjustment, and somewhat poorer levels of personal-emotional adjustment. Further investigations found relationships between academic performance, race and additional variables hypothesised to be associated with adjustment (Sennetta et al., 2003).

Levels of academic adjustment were regressed on the set of antecedents derived from the literature, namely age, gender, race, choice of degree, the type of school the student attended prior to university (government versus private), who paid the student's university tuition fees and place of residence while studying at the university. Backward elimination was used, in order to avoid suppressor variables, and in order to derive an exploratory model of associations that were all significant within the model.

Table 2: Significant Multiple Linear Regression Analysis Associations for Academic Adjustment

	Motivation	**Application**	**Performance**	**Academic Environment**	**Total Academic Adjustment**
Constant	5.211**	4.477***	12.348***	3.047***	25.934***
Gender	.188(.092)*		.347(.072)**	-.226(-.067)*	.464(.064)*
Age		.155(.110)***	-.163(-.075)**		
Indian				.453(.107)***	

Asian	1.084(.088)**			.845(.07)**	1.585(.061)*
Coloured			-.883(-.062)*		
BCom	.302(.072)**				
BCom Law			-1.42(-.067)*		-1.806(-.057)*
Other Degree			-2.260(-.076)**		
Parent Payment		.190(.055)*	.307(.058)*		.991(.126)***
Payment Father		.331(.061)*			.765(.065)*
NSFAS	-.547(-.116)***				
Other Finance	-.322(-.087)**				
F Value	9.507***	6.8***	5.807***	5.451***	6.735***
Durbin-Watson	1.970	2.156	1.97	1.942	2.027
R-Squared	.033	.019	.029	.023	.029
Adjusted R-Squared	.03	.017	.024	.019	.024

Notes: *p< 05; **p<.01;*** p<.001

The results confirmed that females seem better adjusted in terms of motivation and performance (measures a student's success at coping with motivational and academic performance demands), but less adjusted in terms of the academic environment (coping of students adjustment to university life other than academic performance). Older students report being better adjusted in terms of application yet less well-adjusted in terms of performance. Of the different ethnic groups, Indian students report higher levels of adjustment to the academic environment. Asian students reported higher levels of motivational and performance adjustment. Coloured students reported lower levels of performance adjustment. Students doing the BCom degree were found to report high levels of motivation adjustment. However, students studying BCom Law and degrees other than Accountancy or Commerce degrees were found to report lower levels of performance adjustment. Students who had their fees paid by a parent or by a father were found to report higher levels of application adjustment. Parental payment was found to be positively associated with performance adjustment. Students who reported paying their fees using NSFAS or using other sources of finance other than bank finance or parental support were found to report lower levels of motivation adjustment.

Table 3: Social Adjustment

	General	People	Nostalgia	Total Social Adjustment
Constant	6.335***	10.751***	3.646***	21.36***
Gender	-.413(-.128)***			-.551**
Indian				-.900(-.099)**
Asian		1.256(.062)*		
African		.618(.104)***		
Coloured		1.082(.065)*		
White	-.385(-.074)*		.525(.131)***	-1.714(-.149)***
BCom Law			.567(.052)*	
Parent Payment		-.404(-.066)*		-.593(-.076)**
Payment Father				
Payment Family Member			-.461(-.057)*	
NSFAS			-.256(-.075)**	
Bank			.586(.074)**	
Hostel Residence	-.617(-.180)***		-.211(-.079)**	
Stay-Other			.560(-.054)*	
F Value	11.837***	7.022***	11.232***	11.189***
Durbin-Watson	1.952	1.98	1.921	2.032
R-Squared	.049	.025	.054	.047
Adjusted R-Squared	.045	.021	.049	.042

Notes: *p< 05; **p<.01;*** p<.001

Females were found to report lower levels of general social adjustment. Asian, African and Coloured students were found to report higher levels of people-related social adjustment. White students were found to report lower levels of general social adjustment and higher levels of nostalgia-related adjustment. Students that reported that their parents paid their fees were found to have lower levels of people-related social adjustment. Students who reported that their fees were paid by a family member or by NSFAS, or who stayed at a hostel or residence were found to have lower levels of nostalgia-related social adjustment. Student staying in a hostel or residence were also found to report lower levels of general social adjustment. Students who reported financing their studies using a bank were found to have higher levels of nostalgia-related social adjustment. Students who reported ‘other’ in terms of their residence category were found to have higher levels of nostalgia-related social adjustment.

Table 4: Personal-Emotional Adjustment (PE), Attachment (AT), and Total Student Adjustment

	Psychological PE Adjustment	Physical PE Adjustment	Total PE Adjustment	Attachment (AT)	Total Student Adjustment
Constant	12.058	6.912	16.261	2.858***	45.869***
Age				.076(.056)*	.289(.059)*
African		.944(.188)***	1.633(.180)***	-.268(-.084)**	
Indian		.719(.120)**	1.26(.117)**		
White	-.530(-.062)*				-1.005(-.055)*
Asian		.942(.055)*	1.89(.061)*	.826(.076)**	3.042(.074)**
Coloured	.878(.055)*		1.931(.076)**		
Private School	-.359(-.062)*				
Other Degree		1.693*	2.837(.054)*		
Parent Payment	-.725(-.124)***	-.432(-.083)**	-1.075(-.115)***		
Payment Other	-.895(-.155)***		-.983(-.101)**		
Stay Hostel/Residence		-1.145(-.226)***	-.927(-.101)**		
Stay Braamfontein	.635(.091)**	-.891(-.145)***		.249(.064)*	
Stay Private		-.784(-.096)**			
Stay Other		1.317(.067)*	2.461(.069)**		
F Value	8.432***	7.718***	7.130***	5.329***	4.855***
Durbin-Watson	1.952	2.108	1.983	1.976	2.051
R-Squared	.052	.053	.05	.026	.017
Adjusted R-Squared	.046	.046	.042	.021	.014

Notes: *p< 05; **p<.01;*** p<.001

Students who classified themselves into the 'Black' category were found to report higher levels of physical personal-emotional adjustment yet lower levels of attachment. Students who classified themselves into the 'Indian' category were round to report higher levels of physical personal-emotional adjustment. Students who classified themselves as 'White' were found to report having lower levels of psychological personal-emotional adjustment whereas those identifying themselves as 'Coloured' reported having significantly higher levels of psychological personal-emotional adjustment. Students from public (non-private) schools as well as those reporting that their fees were paid by parents or 'other' forms of payment were found to report lower levels of psychological personal-emotional adjustment. Students studying degrees other than those in Accountancy or Commerce were found to report higher levels of physical personal-emotional adjustment. Students who reported that their parents paid their fees were found to have lower levels of physical personal-emotional adjustment. Students staying in hostel/residence were found to have lower levels of physical personal-emotional adjustment and those residing in Braamfontein were found to have higher levels of psychological personal-emotional adjustment and attachment-related adjustment but lower levels of physical personal-emotional adjustment.

Table 5: Pearson product-moment correlations between measures of marks obtained (April and June tests) and total adjustment

		Academic Adjustment	Social Adjustment	Personal-Emotional Adjustment	Attachment Adjustment	Total Student Adjustment
April Marks	Pearson Correlation	.053*	.010	.096**	.041	.088**
	Sig. (2-tailed)	.049	.719	.000	.134	.001
	N	1380	1380	1380	1380	1380
		Academic Adjustment	**Social Adjustment**	**Personal-Emotional Adjustment**	**Attachment Adjustment**	**Total Adjustment**
June Marks	Pearson Correlation	.082**	-.039	.211**	.086**	.149**
	Sig. (2-tailed)	.002	.148	.000	.001	.000
	N	1380	1380	1380	1380	1380

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed).

The relationship between April and June marks (measured as the marks obtained in the two tests) and total student adjustment (Academic, Social, Personal-emotional and Attachment) was investigated using the Pearson product-moment correlation coefficient. The mean scores for the April test was 49.14 and for the June test 53.03. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a very strong, positive correlation between total student adjustment and both tests, April, $r = .088$, $n=1380$, $p < .05$ and June, $r = .149$, $n=1380$, $p < .05$. A further investigation between the correlation of the two tests and the four aspects of adjustments are now discussed. There was a strong positive correlation between the twelve total academic adjustments items and both tests, April $r = .058$, $n=1380$, $p < .05$ and June, $r = .082$, $n=1380$, $p < .05$: seven items had a strong positive correlation for both April and the June tests; one item, 'I consider a university degree important' had no correlation with either test; three items, 'I enjoy academic work', 'I am satisfied with the quality of the courses' and 'I am satisfied with the lectures' had no correlation with the April test but a very strong correlation with the June test and one item, 'I am not motivated to study' had a stronger correlation with the June test than the April test.

There was a no correlation between the seven total social adjustments items and both tests, April r = .010, n=1380, $p < .05$ and June, r = -.039, n=1380, $p < .05$ but after a further analysis two items indicted a correlation; one item 'I am adjusting well to the university' had a very strong negative correlation for both April and June tests and one item, 'I feel inferior to my fellow class mates' had no correlation with the April test but had a very strong positive correlation with the June test.

There was a very strong positive correlation between the six total personal-emotional adjustments items and both tests, April r = .096, n=1380, $p < .05$ and June, r = .221, n=1380, $p < .05$. Further analysis found three items 'Being independent has not been easy', 'Is not sleeping well' and 'Worries a lot about university expenses' that had a strong positive correlation for both the April and the June tests, two items, 'Gets angry too easily lately' and 'Feels in good health' had no correlation with the April test but a very strong correlation with the June test and one item 'Spend more than 2 hours to travel to the university' had no correlation with either tests.

There was no correlation between the two total attachment adjustment with the April test, r = .041, n=1380, $p < .05$ but a very strong positive correlation with the June test, r = .086, n=1380, $p < .05$. A further breakdown of the two adjustment items indicted that the one item 'I think a lot about dropping out of university permanently' had a very strong positive correlation for both the April and the June tests and the second item 'I am pleased about attending this university' had a very strong correlation with the April test and a less strong correlation with the June tests.

CONCLUSION

The purpose of this study was to investigate the concurrent and predictive validity of the Student Adaption to College Questionnaire (SACQ) scores to explore if the adaptation from school to university is evident in a sample of South African university accounting students. The following two questions were addressed; What is the current 'make up' of accounting students that could influence the adaptation of students to university attainment?' and 'What is the relationship between the adaptation of accounting students to university and academic performance by investigating the concurrent and predictive validity of the Student Adaption to College Questionnaire (SACQ) scores?'

To address the first question multiple linear regression analysis was used to determine associations between four aspects of adjustment to university (academic, social, personal-emotional and attachment) and the age, gender, race, choice of degree, the school the student attended prior to the university, university tuition fees and place of residence while studying at the university of accounting students.

The results of the SACQ indicted the scales scores of the individual items, total of each of the four aspects and the full-scale score. Older students report to be better adjusted in terms of application but not in term of performance. Female students seem better adjusted in terms of motivation and performance but less adjusted and general social adjustment. Indian students report higher levels of in terms of academic adjustment, Indian and Black students report higher levels of physical personal-emotional adjustment and Black students had lower levels of attachment. In contrast Sennetta et al. (2003) confirmed that black African participants reported significantly with lower levels of social adjustment and somewhat poorer levels of personal-emotional adjustment. White students were found to report lower levels of general social adjustment and psychological personal-emotional adjustment but higher level s of nostalgia-related adjustments. BCom degree students were found to report high levels of motivation adjustment and both Accountancy and Commerce degree students were found to report higher levels of physical personal-emotional adjustment. Students from public (non-private) schools as well fees were paid by parents or ‘other’ forms of payment were found to report lower levels of psychological personal-emotional adjustment but parental payment was found to be positively associated with performance adjustment. Student staying in a hostel or residence were also found to report lower levels of general social adjustment.

For the second question, the Pearson product-moment correlation coefficient was used to determine the relationship between April and June marks (measured as the marks obtained in the two tests) and total student adjustment (Academic, Social, Personal-emotional and Attachment using the SACQ scores). The mean scores for the April test was 49.14 and for the June test 53.03. The total academic adjustment scores indicated that accounting students are confident in having well-defined academic goals, keep up-to-date with academic goals, attend lecturers, found academic work difficult, do not feel smart enough for their course work, do not use study time effectively and have trouble concentrating when studying. These finding correlate with the findings of Byrne and Flood (2005) that accounting students enter higher education, have very positive expectations, well prepared to handle course content and want to perform very well comparing. This study further concluded that there was a very strong, positive correlation between total student and academic adjustment with both April and June tests.

Furthermore no correlation was found between the April test and the quality of the course, satisfaction with lecturers and enjoyment of academic work in relation with a very strong significance with the June test. In addition students indicated they were less motivated to study for the April test and after the April marks’ test were released student were more motivated to study due to a lower mean score obtained in the April test. No relationship was found of the social adjustment item ‘I feel inferior to their fellow class mates’ and the personal-emotional adjustment item ‘Gets angry too easily lately’ after the first test but and after the second test in June students had a very strong relationship. Students also indicated they worry a lot about university expenses and higher levels of adjustment were reported with both tests. The total attachment adjustment item ‘‘I think a lot about dropping out of university permanently’ had a very strong positive correlation for both the April and the June tests.

LIMITATIONS AND FUTURE RESEARCH

The study includes some important limitations. The SACQ was adapted for this study and did not include all the questions as per the original questionnaire of Baker and Siryk (1984). The study only includes accounting students at a single university. In spite of these limitations this study represents an important step in the ongoing debate on the adaptation of first year accounting students at an academic institution.

Future research could be conducted consisting of both the first and second semester to compare the relationships between the adjustment items. Another area of further research could be to explore other reasons why accounting student do not cope other than the listed adjustment items.

REFERENCES

Akenbor, C.O. and Ibanichuka, E. A. L. (2014), Institutional Factors Influencing the Academic Performance of Students in Principles of Accounting, *International Journal of Higher Education Management (IJHEM)*, Vol. 1 No. 1, pp.15-26

Arquero, J.L. and Rioja, C.T. (2009), How well adapted are accounting student of Bologna? A comparative analysis of learning styles of Spanish social science students, *The Spanish Journal of Accounting*, 2, pp. 125-156.

Baker, R.W. and Siryk, B. (1984), Measuring adjustment to college. *Journal of Counseling Psychology*, 31, pp. 170-189.

Boyle, R., Carter, J. and Clark, M. (2002), What makes them succeed? Entry progression and graduation in computers science, *Journal of further and higher education*, Vol. 26 No. 1, pp. 2-18.

Bryman, A. and Bell, E. (2011), Business Research Methods. 3rd Ed. Oxford University Press. Oxford.

Byrne, M and Flood, B. (2005), A study of accounting students' motives, expectations and preparedness for higher education. *Journal of Further and Higher Education*, Vol. 29 No. 2, pp. 111-124.

Dahmus, S., Bernardin, H. J. and Bernardin, K. (1992), Student Adaption to College Questionnaire. Measurement and Evaluation in Counseling and Development, Vol. 25 No.3, pp. 139-142.

Fraser, W.J. and Killen, R. (2003), Factors influencing academic success or failure of first-year and senior university students: Do education students and lecturers perceive things differently? *South African Journal of Education*, Vol. 23 No. 4, pp. 254-260.

Gul, F.A. and Fong, S.C.C. (1993), Predicting success for introductory accounting students: some further Hong Kong evidence, *Accounting Education*, Vol. 2 No. 1, pp. 22-42.

Hosal-Akman, N. and Simga-Mugan, C. (2010). An assessment of the effects of teaching methods on academic performance of students in accounting courses, *Innovations in Education and Teaching International*, Vol. 47, No. 3, pp. 251–260.

Jou, Y. H., and Fukada, H. (1995). Effects of social support on adjustment of Chinese students in Japan. *Journal of Social Psychology*, 135, pp. 39-47.

Leedy P.D. and Ormrod J.E. (2010), *Practical Research*. Pearson, Boston

Letseka, M. and Maile, S. (2008), High university drop-out rates: a threat to South Africa's future, The Human Sciences Research Council (HSRC), Policy Brief.

Ligadu, C.P., Abbas, R.H. and Han, C. (2012), Perceptions of new students' coping skills during their first year in the university: A case study, International conference the future of education.

Marburger, D.R. (2010), Does Mandatory Attendance Improve Student Performance? The *Journal of Economic Education*, Vol. 37 No. 2, pp. 148-155.

McKenzie, K. and Schweitzer, R. (2001), Who succeeds at university? Factors predicting academic performance in first year Australian university students, *Higher Education Research and Development*, 20, pp. 21-33.

Műller, H., Prinsloo, P. and Du Plessis, A. (2007), Validating the profile of a successful first-year accounting students. *Meditari Accounting Research*. Vol. 15 No.1, pp. 19-33.

Nyamayaro, P.C. and Saravanan C. (2013), The relationship between adjustment and negative emotional states among first year medical students, *Asian Journal of social Science and Humanities*, Vol. 2 No. 3, pp. 270-278.

Ozga, J.and Surhanandan, I. (1998), Undergraduate non-completion: developing and exploratory model, Higher Education Quarterly, Vol. 52 No. 2, pp.316-333.

Pitso, T. (2013), Status of Scholarship of teaching and learning in South Africa. South African, *Journal of Higher Education*, Vol. 27 No. 1, pp. 196-209.

Scott, I., Yeld, N. and Hendry, J. (2007), A case for improving teaching and learning in South African higher education. Higher Education Monitor No. 6. Pretoria; Council on Higher Education.

Sennetta, J. Finchilescua, G. Gibsona, K. and Straussa R. (2003), Adjustment of Black Students at a Historically White South African University. *Educational Psychology: An International Journal of Experimental Educational Psychology*, Vol. 23 No. 1, pp. 107-116.

Sherina, M. S., Rampal, L. & Kaneson, N. (2004), Psychological stress among undergraduate medical students. *Medical Journal of Malaysia*, Vol. 59 No. 2, pp. 207-211.

Smith, C. K., Peterson, D. F., Degenhardt, B. F. & Johnson, J. C. (2007), Depression, anxiety, and perceived hassles among entering medical students. Psychology, Health & Medicine, Vol. 12 No. 1, pp. 31-39.

Steenkamp, L.P., Baard, R.S. and Frick, B.L. (2009), Factors influencing success in first-year accounting as a South African university: A comparison between lecturers' assumptions and students' perceptions. *South African Journal of Accounting Research*, Vol 23 No. 1, pp. 113-140.

Tao, S., Dong, Q., Pratt, M. W., Hunsberger, B., & Pancer, S. M. (2000), Social support: Relations to coping and adjustment during the transition to university in the People's Republic of China. *Journal of Adolescent Research*, Vol. 15, pp. 123-144.

Tempone, I. (2001), Variation in student learning in accounting. Doctoral dissertation, Swinburne University of Technology, Melbourne, Swinburne University of Technology.

Toews, M. L., & Yazedjian, A. (2007), College adjustment among freshmen: Predictors for White and Hispanic males and females. *College Student Journal*, Vol. 41 No. 4, pp. 891-900.

Yazedjian, A., Toews, M.L. and Navarro, A. (2009), Exploring Parental Factors, Adjustment, and Academic Achievement Among White and Hispanic College Students. *Journal of College Student Development.* Vol. 50 No. 4, pp. 458-467.

Winebrenner, S. (2007), *Teaching Kids with learning difficulties in the regular classroom* Free Spirit Publishing, Minneapolis.

University of the Witwatersrand Ranked (Wits), (2014), Wits ranked top university in Africa, available http://www.wits.ac.za/newsroom/newsitems/201407/24117/news_item_24117.html (accessed 4 April 2015).

Woollacott, L., Snell, D., and Laher, S. (2013). Transitional distance: A new perspective for conceptualizing student difficulties in the transition from secondary to tertiary education, Proceedings of the 2nd Biennial Conference of the South African Society for Engineering Education, Cape Town, 11-12 June.

EDU008 A Reflection on Visual Representation of the Accounting Equation as part of the Teaching and Learning Mix for an Introductory Financial Accounting Class

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Abstract

The accounting education system is facing a multitude of challenges including questions regarding its effectiveness and reliability and these changes increase the pressure on accounting educators to find the most effectives techniques not only for developing the additional skill sets and competencies expected on accounting graduates, but to also develop the foundational skills and knowledge. Much accounting research has been dedicated to considering how to improve the learning outcome of students, specifically considering learning styles, and their match with teaching pedagogies. This paper specifically addresses one of the many techniques available to the accounting educator to assist students in understanding fundamental concepts in financial accounting; namely using a visual representation of the accounting equation. The paper reflects on the 5 year formalized longitudinal survey, of students learning and perceptions using visual representations of the accounting equation. The study found that the majority of students did perceive the visual modeling as helpful in understanding both foundational concepts as well as more complex applications. The author concludes that such a model could be a useful addition to the mix of teaching tools available to accounting educators.

1. Introduction and context

The accounting education system is facing a multitude of challenges including questions regarding its effectiveness and reliability (Fouche 2013, Carnegie & Napier, 2010, Buckhaults & Fisher 2011), especially in the era after the financial crash of 2008. This is further emphasized by the increasing expectations of the business sector for accounting professionals to fulfill broader leadership and managerial roles in a time of rapid technological change (Fouche 2013, Davidson, Slotnick & Waldman 2000), and changes the future of accounting education internationally and in South Africa (Dempsey & Stegmann 2001). All these changes increase the pressure on accounting educators to find the most effectives techniques not only for developing the additional skill sets and competencies expected of accounting graduates, but to also develop the foundational skills and knowledge. Much accounting research has been dedicated to considering how to improve the learning outcome of students, specifically considering learning styles, and the match of teaching pedagogies with such learning styles (Visser, McChlery and Vreken 2006, Hark and Shah 2007, Brown 2002, Claxton and Murrell, 1987; Coffield, Mosely, Hall & Ecclestone 2004). This paper specifically addresses one of many techniques available to the accounting educator to assist students in understanding fundamental concepts in financial accounting, namely using visual representations of the accounting equation. This paper will reflect on a 5 year formalized longitudinal data collection of students' perceptions of the use of visual representations of the accounting equation. The value of this paper in terms of its contribution to the field of accounting education, is that it is the first[1] to explore the use of this specific system of visual representation. If such a system is found to be helpful by learners, then it represents one additional tool that accounting educators could adopt within the mix of their teaching methodologies.

2. Background and relevant research

2.1.Teaching and Learning styles:

2.1.1. Match of teaching and learning styles

Learning styles are the preferred approaches to learning of a subject, while teaching styles are the preferred pedagogical approaches of lecturers. Visser, McChlery and Vreken (2006) suggest the lecturers need to adopt those teaching styles that best enable students with different learning styles to learn most effectively. Various studies have indicated that learning styles have a significant impact on student's academic success (Allinson & Hayes, 1988), and that when lecturers are aware of their students learning styles this can help in the selection of the course strategies (Sangster, 1996) and improve the learning outcomes (Butler 1998). However there is still some debate between whether matching of learning and teaching styles improve student's outcomes or whether mismatching has a more beneficial impact (Felder & Silverman 1988). Wilson & Scalise (2006) note that the congruence or "goodness of fit" between learning outcomes, instruction approach and assessment are key to the success of the learners. Biggs (1999) used the term constructive alignment to refer to this degree of symmetry. However for the purpose of this paper the potential benefits of matching (Ford & Chen 2001) will be explored. Visser, McChlery and Vreken (2006) have indicated that there is a further need for research into how teaching styles can be integrated into accounting education, and this paper addresses just one small aspect of this field of research.

Hark and Shah (2007) propose that few doctoral programs provide comprehensive coverage of adult pedagogy and the philosophy of education and instead they suggest that faculty in higher education either adopt the ways they prefer to learn or the approaches that they perceived as effective when they were students. This is despite the fact that learning styles and learning style models (Claxton and Murrell, 1987; Gregorc, 1979, 1985; Felder & Silverman, 1988; Dunn & Dunn, 1989; Flemming, 2001) have emerged as a significant pedagogical issues. It has been shown that (Claxton and Murrell, 1987; Coffield, Mosely, Hall & Ecclestone 2004) learners learn in different ways. Thus Hark and Shah (2007) suggest that if faculty just assume that students prefer the same learning styles

[1] An extensive literature review could not find papers reviewing such a system. This does not preclude the existence of such systems, in fact the author suggests they might be widely used, but the successes and limitations of such systems, needs to be fully documented, for those in accounting education to be able to consider the merits of such systems for inclusion in their own teaching toolkits.

that they are comfortable with, there could be significant proportions of their students that will not connect with their teaching as effectively as could be possible.

Thus it is suggested they faculty should not assume their teaching styles are broad enough, and Hark and Shah (2007) believe that faculty have a responsibility to expand their repertoire to reach a broader range of students.

There are been a multitude of academic studies that have challenged the traditional approaches to accounting education (Mathews, 1990; Tinker & Koutsoumandi, 1997), and Flood (2007) suggests that the focus has moved away from trying to get students to master massive amounts of technical knowledge, to rather understand the principles behind such knowledge. The focus has thus become on ability to use knowledge as well as flexibility and adaptability in their future careers (Accounting Education Change Commission (AECC) 1990). Such research also has focused on understanding students learning process to improve the outcomes (Lucas, 1996; Beattie, Collins, & Mc Innes, 1997). A discussion of learning styles would not be complete without considering Kolb's (1984) pioneering work on the learning cycle, deep-learning (Ramsdem 1992; Lucas 2000) or that teaching styles supports such deep learning (Biggs 1999; Gibbs 1992) .

Significant research has been done considering for example established indices and questionnaires (such as Kolb's Learning styles Index (1976, 1985) and Mumford's Learning Styles Questionnaire (1992)), based on the established validity of these instruments. However alternative researchers have questioned the validity of these particular instruments. This paper does not seek to not replicate this work, which would add little to knowledge in this field, but will rather consider Meta Programs.

Intrinsically linked to the study of learning style is the idea of Meta programs, which originated out of the work for neuro Linguistic Programming (NLP see later VARK) (Brown, 2005). The Meta programs explain peoples cognitive process, that is the way they think, process inputs and learning (Higgens, Wall, Falzon, Hall, Leat, Baumfield, Clark, Edwards, Jones, Lofthouse, Moseley, Miller & Murtagh 2005). Brown (2002) found that accounting students had the same dominant processes that accounting faculty did. These Meta programs were found to either positively or negatively correlate with performance (Brown & Gaff, 2004). Brown (2004) also found that these Meta programs affected student's perceptions of the quality of the instruction they received and the relationship with their professors. Brown (2002) concluded that matching of Meta programs, would improve communication between lecturers and students. This paper will consider in detail one such Meta program, namely visualization.

2.1.2. Other Prominent Learning Styles Theories

When referring to papers on learning styles and accounting education, there are several prominent theories that are most often referenced. These include:

- The Kolb Experiential Learning Theory (Kolb, 1984) postulates that knowledge is gained through processes that are experienced, and which different learners prefer, including experiencing, observation, conceptualization and experimentation. Different learning groups, such as traditional versus nontraditional will prefer different learning styles and (Kolb, 1984; Brobkaw & Merz, 2000) matching learning styles with preferences not only improved their learning experience but also their performance. It is significant to note that Visser, McChlery and Vreken (2006) used the learning styles inventory as developed by Kolb (1984). They found that the majority of students preferred a sensing style on one scale as opposed to intuition, while a significant proportion of lecturers preferred a visual style and students did not. This is significant for this study, even though a different learning model is used, their data would question the usefulness of visualization as a learning modality.
- The Gregorc Style Delineator (GSD) (Gregorc and Ward 1977, Gregorc 1979, 1985, Butler 1986) suggests that people have natural dispositions to learn along four bi-polar (opposite) mind qualities. One of these, namely Concrete- sequential (CS) including methods such as worksheets, charts and flowcharts which are techniques commonly used in accounting education today.
- The Felder- Silverman Learning / Teaching Style Model (Felder & Silverman, 1988) suggests that people have preferences for five bipolar continua that reflect the way they take in and process information, one of which is Visual – Verbal.
- The Dunn and Dunn Learning Style Model, which is measured by the Productivity Environmental Preference Survey (PEPS) (Dunn & Dunn 1989).
- The Revised Approaches to Studying Inventory (RASI) (Entwistle & Tait, 1995; Duff, 2004) looks at three approaches to studying (Hawk and Shah, 2007), including deep, surface and strategic learning.

2.1.3. VARK and NLP

The VARK model which was developed by Fleming (2001) considers four primary modes of thinking namely:

- Visual (V)
- Aural (A)
- Read / Write (R)
- Kinesthetic (K)

This model was developed from a previous model based on neuro-linguistic programming (NLP) (Eicher, 1987), and the pioneering work of Bandler and Grinder

(1975, 1979, 1982). The earlier work and true NLP does not include Read / Write as it focuses on ways on thinking, whereas VARK includes reading / Writing as this is a learning style. The basic premise of this work is that people have a primary mode of thinking, but can learn to function in other modes as well. Flemming (2001) notes that most people (41%) function in a single mode, 29% have two primary modes, 9% have three and 21% function in all four. The VARK questionnaire is available commercially (Flemming, 2001), and has been tested for reliability and validity.

People, who think (and learn) primarily in a visual mode, create pictures in their minds and can relate best to diagrams, charts, special arrangements and maps. Aural learners like discussions, lectures, stories, and often tape material to aid in their learning. Read / Write learners like books, essays, handouts, and manuals. Kinesthetic people like actually doing things like experiments, field work, making things, and having guest speakers.

Blander and Grinder (1975)note that certain disciplines and corresponding occupations lend themselves to certain learning styles. For example engineering disciplines which require charts, flow diagrams and 2D or 3D models is a very visual discipline, and is best suited to and attracts people whose primary mode of thinking is visualization. The question arises what primary modes of thinking is best suited to the disciplines of accounting and related disciplines such as financial management and auditing. The author suggests that again visual modes of thinking would favor understanding relationships between numbers, and the flow of numbers in systems. There is little hands on work, and little discussion needed. However much teaching happens in the form of lecturers, which is auditory in nature. A key component of many accounting courses and programs is practice in the form of homework and tutorials which represents reading and writing, and might be argued to be kinesthetic[2]. Thus it is suggested that the primary mode of understating accounting is visual, however the learning process is primary auditory with reading / writing as a supplement, and thus this could lead to a disconnect and frustration on the part of the learners.

This paper examines and attempt in an introductory financial accounting class to use primarily a visual mode of representation of key concepts in terms of the accounting equation[3], with auditory explanations, and supporting exercises and homework as read / write / doing. As much as the accounting framework might provide a framework for understanding recognition, measurement, and presentation and well as the tradeoff between quantitative and qualitative characteristics of data: the accounting equation also provides a useful framework for understanding components of financial accounting specifically including measurement and recording. This understanding

[2] the author suggest not, as nothing concrete that can be physically touched is ever made in tutorials

[3] It must be noted that for simplicity purposes the author used + & - signs interchangeably with Dr & Cr, the reasoning for this is discussed later in the paper.

- Promotes understanding of basic accounting procedures
- Helps address concepts often experienced as difficult by learners
- Provides an easy visual representation of the data, which is well suited to a significant proportion of learners

3. Aim and Objectives

3.1.***Aim***:

To suggest that in accounting education, using a visual representation of the accounting equation, can be useful for promoting understanding of technical concepts for accounting learners. The paper aims to demonstrate that the use of a visual representation of the accounting equation, using simple pluses and minuses, can be perceived to be beneficial by learners in aiding their understanding of core concepts as well as more complex aspects of accounting.

3.2.Objectives:

To achieve the above aim, the objectives of this paper will be:

a) Firstly to illustrate how such visual system could work, then
b) Determine if accounting learners perceive the use of such a system to be helpful in facilitating their understanding of basic as well as some more advanced accounting concepts

4. Methodology:

The analysis will be achieved by both qualitative as well as quantitative methodologies

4.1. Aim (a) "to illustrate a visual representation of the accounting equation"

An extensive literature review was conducted to find any descriptions or discussions of a visual representation of the accounting equation, however no data relevant to the basic modeling of the accounting equation as considered in this paper was found. Thus a description[4] was developed by the author. The literature review did reveal prior research on why Debits and Credits are used as opposed to a more simplistic plus and minus representation, and this is discussed in the results section.

4.2. Objective (b) "to determine learners perceptions of the use of such a visual system"

4.2.1 Qualitative:

Review of findings of assessment data, including data collected through course evaluations (through open ended questions), as well as the results of focus groups, for themes related to the match of learning and teaching styles . The results of two focus groups run at the conclusion of the five year longitudinal study, as well as

[4] Qualitative deduction

student responses to the open comments section of course evaluations for 10 semesters in the selected accounting class, were reviewed for qualitative data relevant to this study

4.1.1. Quantitative:

A longitudinal study of an introductory financial accounting class over a 5 years period (10 semesters) using a self-completing questionnaire with Likert scaled questions. The results collected by this instrument are analyzed using descriptive statistics[5], as well tested for correlation between responses and students performance. The sample size consisted of 92[6] completed surveys, collected over a 5 year period from an introductory level financial accounting class. The surveys returned represent a 36% return rate, which is considered good for a voluntary return. The sample size is limited at the university at which the data was collected, since classes are capped at 25 students, and at most one section of introductory financial accounting is offered each semester. Limitations of this data and subsequent analysis include:

- Reporting bias (perceptions of usefulness of visual models by learners, not actual usefulness)
- Incomplete or inaccurate returns
- Only one learning modality is considered, while other teaching modalities and teaching and learning styles are not considered
- There is no control group[7]

The data for the questions was analyzed for simple descriptive statistics including modes and means, as the basis for inferring the degree of preference or not, for the technique reviewed. It must be noted that a simple correlation was run between reported preferences and the student’s grades in the class. This correlation was not tested for significance, nor power, but was collected for the purpose of determining any possible relationship (not inferring causality) between preference for the visual modality and the student’s success in the course. The author suggests that a student who did not find the primary mode of explanation useful, may have struggled with the class, which might be reflected in relatively worse grades than students who prefer visual representations of the accounting concepts. Further research would need to be conducted in a more rigorous manner to deduce any causality for a definitive relationship.

[5] The author used means as opposed to modes (which were still calculated), which are more appropriate in ordinal data, as the discrete differences were in most cases too small to notice using the absolute values of modes

[6] The complete analysis of the data set has yet to be finalized, and the sample size will change by date the release of the final paper, after a final review of the completed questionnaires.

[7] The author did not want to potentially provide any inferior learning experience to any one class, but omitting visual teaching techniques

5. Results and Analysis:

5.1. The visual system

5.1.1. ***Background on the use of debits and credits***

Historically we credit Luca Pacioli and his work Summa De Arithmetica Geometria Prortioni et Proportionalita (1494) as the foundation of the current double entry system of accounting. Although Pacioli is credited as being the father of accounting he claims he was merely describing the system of accounting that was in used by merchants in Venice at that time. What is significant is the use of the terms translated as Debtor and Creditor, more commonly denoted now as debit and credit, although Pacioli specifically used the terms 'per', that is from and 'A', that is to in his journals. Peters and Emery (1978) suggest the terms debit and credit were used and not a plus (+) and minus (-), as the concept of negative numbers was not in popularity at the time by mathematicians. They suggest influences such as Omar Khayyam's (1045 to 1123) rejection of negative numbers, as well as Descartes (1596-1650) and Pascal's (1623-1662) rejection of negative numbers reflecting the thinking of the time. They suggest the first mathematician to embrace negative numbers was in fact Thomas Harriot (1560 to 1621), whose work significantly postdated that of Pacioli's work. Hence they suggest the terminology of the time was wrapped up in the thinking of the time, and how we ended up with the concepts of debits and credit (or more correctly 'Per" and "A" for increases and decreases of only positive numbers). The author suggests the concept of debit, from Debtor, makes no sense when applied to a fixed assets for example, and in the following section raises the question asked by so many students, "why not just + and –"? Perhaps the origins of the Debit and Credit make sense historically for the late 1400's, but do they make the same sense today, or is this just a naming convention, that could potentially add to the confusion of students new to accounting? Although this is beyond the scope of this paper to fully consider, in the representation of the accounting equation in the subsequent sections of this paper the author refers primarily to pluses and minuses. However students must be familiar with the concepts of debits and credits as the nomenclature of accounting so this was covered in all classes.

5.1.2. An overview of the visual representation system reviewed

The following representation of the accounting equation is not new or original[8] but is used for reference in this paper as one possible form of a visual modality for teaching and learning. Further, the paper will review two aspects[9] of financial

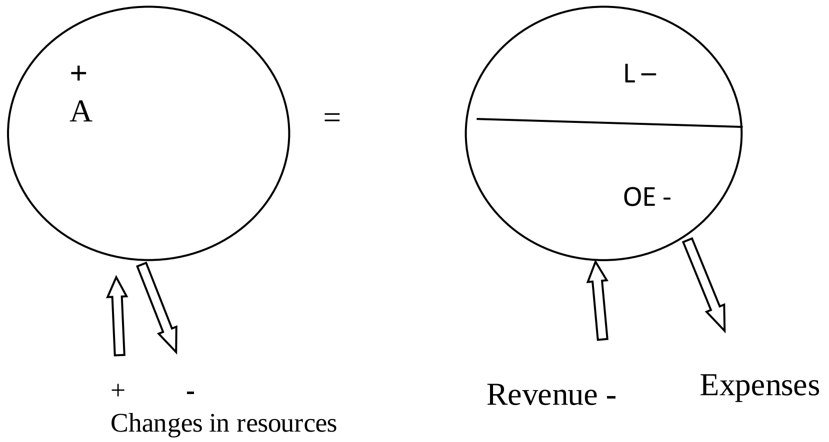
[8] The author could find no similar systems through a literature review, however it is suggested that similar systems are probably widely used.

[9] The author uses this framework to teach almost everything in financial accounting (including cash flows), and financial management (including capital budgeting, WACC and financing decisions)

accounting that students are comfortable with computing mechanically, but in the author's opinion often struggle to conceptually understand. These are:

- Group accounting i.e. consolidations, and
- Financial analysis i.e. ratios

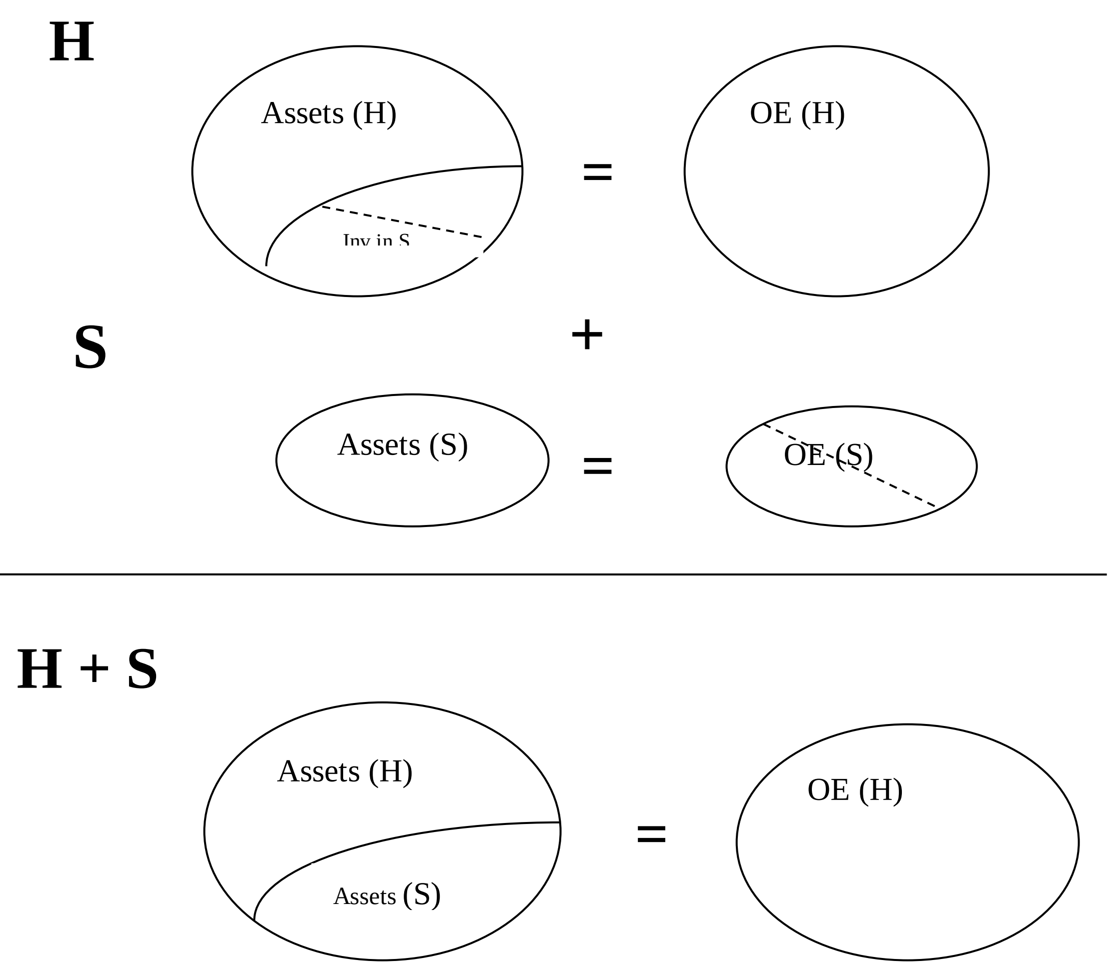
Figure 1: The accounting equation



In its simplest form the accounting equation is shown as positive assets, owners' equity as negative (the entity owes resources to the owners), and liabilities as negative (the entity owes resources to the lenders). While changes in resources are just added and subtracted directly off assets, Revenue (- as it increases the OE) and Expenses (+ as it decreases OE) are kept separate for reporting purposes until the accounting cycle is closed off, when they are combined and added to owner's equity.

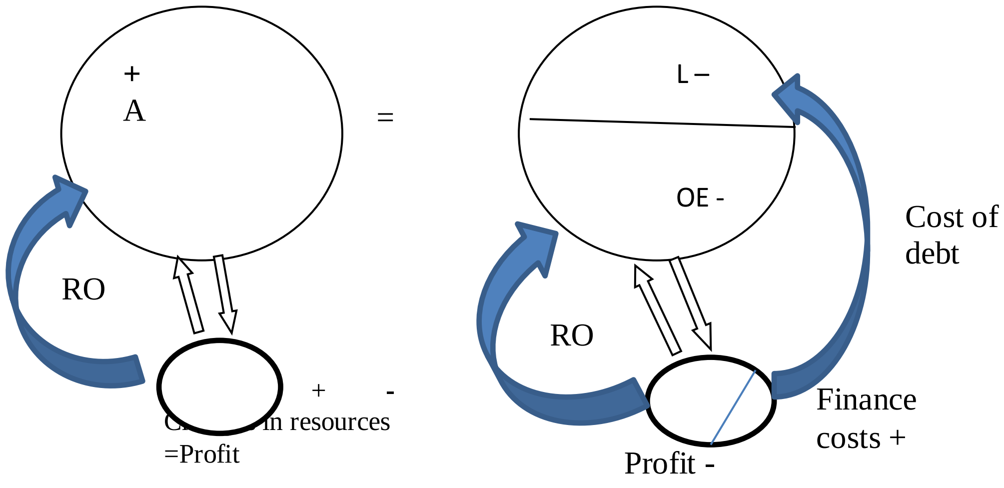
As suggested above, there are two aspects of financial accounting that can be explained visually in terms of the accounting equation as can most aspects of accounting as opposed to just a methodology such as analysis of equity, or formulas, which are considered below.

Figure 2: Group Accounting



In the above diagram, the consolidation process is shown as cancelling out investment in S with the equity of S, to produce the consolidated (combined) result. Note, this can be adapted for goodwill, minority interests, subsequent post acquisition earnings etc.

__Figure 3: Financial Analysis__



Using such a visual diagram students can see what we are measuring by Return on Assets (ROA) and Return on Equity (ROE) and it is clear why the latter is calculated after deducting finance costs. Such a diagram can be further modified to distinguish between operating versus other assets, as well as different classes of equity. Profit can be shown as the net of revenue and expenses. Liquidity and solvency can also be shown through this diagram.[10]

5.2. Perception of the use of the visual system

5.2.1. Qualitative Analysis

5.2.1.1. Focus Groups

At the conclusion of the 5 year review two focus groups were run using students who had completed the accounting. These groups contained 7 and 6 students respectively, and were facilitated by trained student peer advisors, to avoid any reporting bias that a faculty member would have introduced. The focus groups yielded little data that is relevant to this study, other than most students showing a distinct preference to teaching styles in this course compared to a different required undergraduate course in the same discipline.

5.2.1.2. Course Evaluations: Open ended Student comments

Since these questions were open ended and did not specifically require students to respond to teaching styles and techniques, the bulk of the data received related to:

- Students enjoyment of the class
- The usefulness of the class

[10] As noted several times in this paper such a visual modality is potentially very helpful explaining a multitude of concepts both in financial accounting and financial management, with other visual representations (not necessarily based on the accounting equation) being helpful in managerial accounting.

- The difficulty, workload and speed of the class
- Whether they found the online practice / homework helpful

However students did report conflicting results, namely:

- Some reported finding the diagrams as helpful, while
- Others found the diagrams to be confusing

Clearly these results do not answer the research question of this paper.

5.2.2. Quantitative Analysis

5.2.2.1. The accounting equation

No	Question	Mean	Mode	Correlation
3.1	I found I could understand what the bubble[11] diagrams meant / represented	3.71	4	0.09
3.2	I found the bubble diagrams helpful to understand what the business owned and its interactions and obligations to outside parties (owners, lenders, other businesses)	3.79	4	0.11
3.2	I found the bubble diagrams helpful to differentiate between the assets of the business and the owner's equity (and liabilities)	3.71	4	0.12
3.4	I found the bubble diagrams helpful to distinguish between income / expenses and the related cash flows	3.60	4	0.20
3.5	Overall I found the bubble diagrams helpful to understand the accounting equation	3.57	4	-0.03
3.6	I found the bubble diagrams confusing and don't know what they meant	2.29	2	-0.13
3.7	I found going through examples gave me a better feel than the diagrams did for the accounting equation	4.03	4	-0.01
3.8	I found the bubble diagrams useful to understand the Balance sheet	3.31	4	0.11
3.9	I found the bubble diagrams useful to understand the Income statement	3.38	3	0.18

Overall the modes and means indicate that most of the students did find the bubble diagrams useful in explaining the accounting equation, the components of the financial statements including the income statement and the balance sheet, with positive correlations to their grades. The modes for those students who didn't understand them was only 2 with a negative correlation to their grades which is as expected.

[11] Bubble diagrams were used to describe the visual representation of the accounting equation as shown in section 2.5

Interesting is that although the mode of students who felt that doing examples was more helpful than the diagrams, this did not show a positive correlation to their grades, perhaps suggesting that it does not really help them as much as they thought.

5.2.2.2.Group Accounting

No	Question	Mean	Mode	Correlation[12]
4.1	I found the bubble diagrams helpful to understand the basic consolidation process	3.65	4	0.07
4.2	I found the bubble diagrams helpful to understand the cancelling out of investment in subsidiary with the owner's equity of the subsidiary	3.69	4	0.23
4.2	I found the bubble diagrams helpful to understand the creation of goodwill	3.63	3	0.24
4.4	I found the bubble diagrams helpful to understand the concept of minority interests	3.70	4	0.12
4.5	I found the bubble diagrams helpful to understand post acquisition increases in reserves and the allocation thereof	3.36	3	0.12
4.6	I did not find the diagrams helpful to understand consolidations in general	2.54	2	-0.12
4.7	I found the worksheet (analysis of equity) more helpful than the diagrams	3.92	4	-0.13
4.8	I do not understand consolidations	12.00	2	-0.26

As this class is just an introductory level class, students are just taught the basic worksheet for consolidations. Overall the means and modes indicate the major portion of the students did find the diagrams useful in helping explain the process of consolidation, with positive correlations to their grades. The modes for those students that did not find them useful was 2 (a lesser proportion of the class), with a negative correlation to their grades. It is interesting that although there was a strong response from students indicating they preferred the worksheets to the diagrams this had a negative correlation to their grades, suggesting that this did not really help them understand and apply the knowledge as effectively. Although the modes for those students who claimed to not understand the process was only 2, the answers to this question did have a negative correlation to their grades as expected.

[12] In the first draft of this paper the statistical significance of the correlations was not tested or reported. The initial analysis was computed on excel, however the data is now being run of SPSS version 14, and will be reported in the final paper, and will include the determination of significance and the power of the result.

5.2.2.3.Financial analysis

No	Question	Mean	Mode	Correlation
5.1	I found the visual links between the income statement and balance sheet in the bubble diagrams helpful in understanding what the ratios are telling	3.86	4	0.01
5.2	I found the visual links within the income statement (e.g. for gross profit margin, interest cover) helpful in understanding what the ratios are telling[13]	3.95	4	0.01
5.3	I found the timeline diagram helpful in understanding the cash cycle and working capital management	3.86	4	0.28
5.4	I do not understand ratios	1.92	2	-0.32
5.5	I find it easier to learn ratios by formulae than to try understanding the diagrams	3.62	4	0.08

Although the majority of students found the visual links and diagrams helpful, these responses did not have a very strong correlation with their grades except in the case of the cash cycle, which was not actually using the diagrams of the accounting equation. Not surprisingly students who claimed not to understand this section had a negative correlation with their grades. Students who said they preferred to just learn the formulas did have a positive, but small, correlation to their grades.

6. Discussion

The findings of the qualitative analysis were inconclusive, and did not provide any useful data as to whether the use of visual representations of the accounting equation were helpful to students to their understanding of accounting concepts. However for the understanding of basic transactions to more complicated concepts like consolidations or financial analysis the quantitative data analysis did indicate the students perceptions that the diagrams were helpful in understanding these accounting concepts, with means in the mid to high 3's (on a scale from 1 to 5), and modes of 4. Despite this the students indicated that practice examples were even more helpful (with a mean above 4). Student's positive perceptions showed positive correlations to their grades. Students who indicated that the visual representations were not helpful, showed negative correlations to their grades. Thus for students who perhaps preferred other learning modalities, the use of visual representations had a negative relation to their performance. Thus it is suggested that educators should attempt to use a wide variety of techniques to match all learning styles.

[13] as also represented in more complex bubbles

7. Conclusion and Recommendations

Overall the findings of this paper indicate that the majority of students do find visual representations of the accounting equation helpful in understanding various aspects of accounting, and this is supported by positive correlations to their grades, suggesting that it does really help them. Even where many students did indicate that they found examples or worksheets more useful, the correlation of these responses to their grades was in fact zero or negative, suggesting that even though they may have been more comfortable with these learning techniques they did not necessarily help them understand the work better. Students who found the work generally confusing had a negative correlation with their performance. Thus the author can conclude that either using a visual representation of the accounting equation as a teaching technique is an effective tool for teaching accounting, and / or that the majority of students in the accounting classes, prefer visual processing as a mode of learning.

The author suggests that despite evidence to suggest that a major portion of learners use visual processing, instructors should endeavor to engage the whole class. Hawk and Shah when considering Meta processing suggest (2007):

- The big picture for global learners
- Diagrams, flowcharts and writing on the board for visual,
- Speaking out load for aural
- Step by step for sequential
- Combination of theory and numbers for abstract and concrete learners

This study does however come with many limitations, as students are getting not just visual but, auditory, kinesthetic, and reading/ writing instruction. Further as has been noted in this paper there are several other prominent learning styles theories, and the instructor would have been teaching students sequentially, starting with the global picture of each section and using a combination of theory and practical examples (which most students liked) in the classes. Hence positive correlations with grades could have been caused by any of these factors which are not possible to isolate.

Future research could isolate performance not just in the course as a whole, but in each of the sections, for definitive correlation[14]. Further various instruments could be used (VARK etc.) to determine the students learning preferences, then correlate these against their responses. Stronger qualitative research techniques as used by Bargate (2012), could also help inform the usefulness of such visual modelling of the accounting equation to promote student learning.

[14] Testing for power, and significance in order to be able to conclude on any correlations found.

8. References

Allinson, C& Hayes, J. (1988). The learning styles questionnaire: an alternative to Kolb's inventory? Journal of Management Sciences, 25, 269-281

American Accounting Association (AAA) Committee on the Future Structure, Content and Scope of Accounting Education (The Bedford Committee). (1990). Future accounting education: Preparing for the expanded profession. Issues in Accounting Education, 1, 307–312.

Bargate, K (2012). The readability of Managerial Accounting and Financial Management textbooks. Meditari Accounting Research. 20(1), 3-21.

Bandler, R. & Grinder, J. (1975). The structure of Magic. Palo Alto: Science and Behavior Books

Bandler, R. & Grinder, J. (1979). Frogs into Princes. Moab: Real People Press

Bandler, R. & Grinder, J. (1982). Reframing. Moab: Real People Press.

Beattie, V., Collins, B., & Mc Innes, B. (1997). Deep and surface learning: A simple of simplistic dichotomy? Accounting Education: An International Journal, 6(1), 1–12.

Biggs, J. (1999). Teaching for Quality Learning at University. Buckingham: SRHE and Open University Press.

Brokaw, A.J. & Merz, T.E. (2000). The effects of student behavior and preferred learning style on performance. Journal of Business Education, 1, 44-53.

Brown, N. (2002). Meta program patterns in accounting educators at a UK business school. Accounting Education: An International Journal, 11(1), 1-13.

Brown, N. (2004). What makes a good educator? The relevance of Meta programs. Assessment and evaluation in Higher Education, 29(5), 515-533.

Brown. N. & Graff, M. (2004). Student's performance in business and accounting subjects as measured by assessment results: an exploration of the relevance of personality traits identified using Meta programs. The international Journal of Management Education, 4(1), 3-18.

Brown, N. (2005). Meta programs for identifying thinking preferences and their impact on accounting students educational experience. Journal of Accounting Education, 23, 232-247

Buckhaults, J &Fisher, D. (2011). Trends in accounting education: decreased accounting anxiety and promoting new methods. Journal of Education for Business, 86, 31-35

Butler, K.A. (1986). Learning and teaching style in theory and practice. Columbia: Learners Dimension.

Butler, K.A. (1988). How kids learn: What theorists say. Learning, 17, 30-43.

Carnegie, G. & Napier C. (2010). Traditional accountants and business professionals: Portraying the accounting profession after Enron. Accounting, Organizations and Society. 35(3), 360-376.

Claxton, C.S. & Murrell, P.H. (1987). Learning styles. Washington, DC: George Washington University.

Codfield, F.J., Moseley, D.V., Hall, and E & Ecclestone, Learning styles: What research has to say in practice? London: Learning skills Research Centre.

Davidson, R. A., Slotnick, S.A. & Waldman, D.A. (2000). Using linguistic performance to measure problem solving. Accounting Education, 9(1), 53-66

Dempsey, A. & Stegmann, N. (2001). Accounting I: Attracting and retaining learners. SAICA conference.

Duff, A. (2004). Approaches to learning. The revised approaches to studying inventory. Active Learning in Higher Education, 5(1)

Dunn, R. & Dunn, K. (1989). Learning style inventory. Lawrence, K.S: Price Systems

Eicher, J. (1987). Making the message clear. Portland: Metamorphous Press

Entwistle, N.J. & Tait, H. (1995). The revised approaches to studying inventory. Edinburgh, UK. University of Edinburgh Centre for Research on Learning and Instruction.

Felder, R.M. & Silverman, L.K. (1988). Learning styles and teaching styles in engineering education. Engineering Education, 78(7), 674-681.

Fleming, N. D. (2001). Teaching and learning styles: VARK strategies. Christchurch, New Zealand: N.D. Fleming.

Flood, B. (2007). The relationship between learning approaches and learning outcomes: A study of Irish accounting students, Accounting Forum 32, 225–239

Forche, J.P. (2013). A renewed Call for change in Accounting Education Practices. SAAA Conference proceeding, Cape Town.

Ford, N. & Chen, S.Y. (2001). Matching /mismatching revisited: an empirical study of learning and teaching styles. British Journal of Educational Technology, 32(1), 502

Gregorc, A.F. (1979). Learning / Teaching styles: Their nature and effects. NASSP Monograph, October, 19-26

Gregorc, A.F. (1985). Inside Styles: Beyond the basics. Maynard, MA: Gabriel Systems.

Gregorc, A.F. & Ward, H.B. (1977). A new definition for individual: implications for learning and teaching. NASSP Bulletin, 401(6), 20-23.

Hawk, T.F. & Shah, A.J. (2007). Using Learning Style Instruments to Enhance Student Learning, Decision Sciences Journal of Innovative Education, 5(1), 1-19.

Higgens, S, Wall, K, Falzon, C, Hall, E, Leat, D, Baumfield, V, Clark, J, Edwards, G, Jones, H, Lofthouse, R, Moseley, D, Miller, J, Murtagh, L. (2005) Learning to learn in schools, phase 3 evaluations.Http://www.ecls.ncl.ac.uk/121/main/files/L2Lyear1Report.pdf

G. Gibbs, G. (1992), Improving student learning through course design. 529–538. Oxford: The Oxford Centre for Staff and Learning Development.

Kolb, D. (1976). Learning style inventory: technical manual. Boston: McBer.

Kolb, D. (1984). Experiential Learning: Experience as the source of learning and development, Englewood-Cliffs, NJ: Prentice Hall.

Kolb, D. (1985). Learning style inventory. Boston: McBer.

Lucas, U. (1996). Student approaches to learning – a literature guide. Accounting Education: An International Journal, 5(1), 87–98.

Lucas, U. (2000). Worlds apart: Students' experiences of learning introductory accounting. Critical Perspectives on Accounting, 11, 479–504.

Mathews, R. (1990). Accounting in higher education: Report of the review of the accounting discipline in higher education. Canberra: Australian Government Publishing Services.

Mumford & Honey (1992). The Manual of Learning Styles. Maidenhead: Ardingley House.

Pacioli, L. (1494). Summa De Arithmetica Geometria Prortioni et Proportionalita.

Peters, R.M., & Emery, D.R. (1978). The roles of negative numbers in the development of Double Entry Bookkeeping. Journal of Accounting research. Vol16(2), 424-426

Ramsden, P. (1992). Learning to teach in higher education. London: Routledge.

Sangster, A. (1996). Objective test, learning to learn and learning styles. Accounting Education, 5(1), 131-146.

Tinker, T., & Koutsoumandi, A. (1997). A mind is a wonderful thing to waste: "Think like a commodity", become a CPA. Accounting, Auditing, & Accountability Journal, 10(3), 454–467.

Visser, S., McChlery S. and Vreken, N. Learning versus teaching styles in the Accounting Sciences in the United Kingdom and South Africa: A comparative Analysis: Meditari

Wilson, M. & Scalise, K. (2006). Assessment to improve learning in higher education: the BEAR assessment system. Higher Education, 52, 635-663.

EDU009 Accounting Education in Nigeria Universities and the Changing Demands of the Accounting Profession

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Abstract

This study presents the result of a survey on the required core and common courses for undergraduate accounting education as perceived by accounting educators, practitioners, employers and students in Nigeria. Respondents generally agreed to a series of core and common courses that are important to the training of undergraduate accounting students, although some differences manifest among the respondent groups regarding the perceived importance of those core and common courses. The findings also showed that the respondents have identified certain courses that need to be incorporated in the mandated Benchmark Minimum Academic Standards so that Nigerian accounting graduates will acquire the required skills to meet the market demand and deal with the challenges of discharging their professional responsibilities. Therefore it is satisfied that undergraduate accounting education curriculum reform in Nigeria is absolutely necessary.

Key words: Accounting Education, Nigerian Universities, Current Status, Future Prospects

Introduction

There have been numerous calls for changes in the accounting curricula of the universities to reflect the needs and market demand in a changing business environment (Humpery, 2005; Amr-Kotb, 2013). Prior studies have pointed out the changing nature of accounting work over time (e.g, Jeacle, 2008). In the past, accounting conventions mainly emphasized quantitative recording, financial calculation and historical accounting for stewardship of resources (Parker, 2001; Sauser, 2000). Today accountants are more involved than before in consulting and business advisory services due to the increasing demand for financial and non-financial information and business advice. The changes in the role of the accounting functions are driven by the characteristics of the modern global business environment (Albrecht & Sacks, 2000; Mohamed & Lashine, 2003). Universities should accordingly incorporate the market expectations to their accounting programs in order to ensure that accounting graduates are equipped with knowledge and skills required by the market. However, there are increasing criticisms that accounting education has lagged behind developments in the changing business environment (Carr, et al, 2006; Courtis & Zaid, 2002).

In Nigerian, University accounting education has lagged behind and failed to prepare graduates adequately to deal with the challenges of discharging their professional responsibilities and the employers have to spend substantial time and resources to train newly recruited accountants. Reports on the Observance of Standards and Codes (ROSC, 2011), observed that accounting education in Nigeria has been under-developed because of less-developed educational system, there has been a lack of sufficient educational facilities e.g outdated text books for training of accountants and the accounting curricula is mostly restricted to accounting technicalities and basic procedural aspect of auditing. Thus, a gap exists between the acquired and required knowledge and skills for accountants due to the rapid changes in the market environment and the slow changes in the curriculum.

Using a questionnaire, this study seek the opinion of accounting educators, accounting practitioners, accounting students and employers of accounting graduates on their views on the required courses that an undergraduate accounting student needs to take in order to meet the increasing demand for accounting services and to acquire the needed knowledge and skills to compete globally. Insight from these groups should be useful because of the growing number of universities in Nigeria that offer accounting degree programs and the globalization of financial reporting. Additionally, the Nigeria economy has changed significantly because of economic reforms implemented in the last five decades. The return to democracy in 1999 was accompanied by a fundamental re-orientation of economic policy, expressed in Nigeria's "home-grown'' National Economic Empowerment and Development Strategy (NEEDS). The accounting profession is emerging and playing an increasingly important role in Nigeria, furthermore, Nigeria's economy is being integrated into the world market at an increasing rate, in particular, following Nigeria's membership to the Word Bank, International Monetary Fund, World Trade Organization and other African Regional Associations. Changes in Nigeria's business environment have brought a demand for more accountants equipped with a wide set of skills, which has stimulated the need for accounting curriculum reform.

Nigeria's present move towards economic reforms, new demands for accounting services have risen. A great amount of new skills is now considered necessary for accountants. Thus, the findings of the study would be of benefit to the university accounting degree program design. University accounting students may also benefit from this study as the market demand is a good indicator for them to improve their knowledge and skills base during undergraduate accounting studies. The findings would also add to the growing accounting education literature dealing with the improvement of university curricula and market expectation of accounting graduates particularly in Nigeria.

Problem Statement

Given the current focus on strengthening the accounting profession following the financial disasters particularly in the U.S and the more recent global financial crisis, the importance of developing and enhancing university accounting education has been repeatedly discussed (e.g., IFAC,2007;Carnegie & Napier, 2010). In Nigeria, the National Universities Commission (NUC) and Professional accreditation' have been used to monitor accounting programs in higher educational institutions. As such, this is considered as a symbol which indicates that the accounting programs excel and meet some standardized quality. However, universities cannot rely on NUC and professional accreditation alone to promote their accounting programs. It is important to note that the market drives the profile, responsibilities, and career options of accountants in the business world (Jackling & De Lange, 2009; Sauser, 2000). One of the responsibilities of universities is therefore to ensure that accounting graduates are equipped with the knowledge and skills identified by the market as desirable for accounting profession.

However, Report on the Observance of Standards and Codes (ROSC, 2011), Published by the World Bank observed uneven quality in the university conducted accounting education in Nigeria. The accounting curricula used in Nigeria is not harmonized among universities and is generally not current with International Education Standards. Nigerian universities have not made efforts to establish common minimum requirements for courses on accounting and the accounting curricula are mostly restricted to accounting technicalities. Furthermore, most accounting text books lack adequate focus on current international accounting standards. Thus, a gap exists between the acquired and required knowledge and skill for accountants due to the rapid changes in the market environment and the slow changes in the curriculum.

Objective of the Study

Accounting education has been under attack for many years resulting from rapid technological advances and growing market globalization (Lin et al, 2005). The function of today's accountant has changed from mere book-keeping of business operations to the provider and interpreter of diversified information to various internal and external users of financial information (Albrecht and Sack, 2000). Such developments require expanding the knowledge and skills of accountants to meet the changing demands stemming from the new business environment. Several studies have examined the issue of what should be the knowledge and skills components of today's accounting education programs that can satisfy the demands for training future accountants. Consensus has emerged and efforts have been made to implement accounting education reforms in other countries in recent years (AAA, 1998; Gill, 1998; Albrecht and Sack, 2000; Forristal, 2002).

The major objective of the study is to assess the adequacies or otherwise of the accounting education training offered by Nigerian universities in relation to the changing demands of the accounting profession. The specific objectives are:

- To assess the adequacy or otherwise of the curriculum content used for the training of accountants in Nigerian universities as provided in the BMAS by the NUC
- To assess the adequacy and relevance of knowledge and skills acquired to the changing demands of the accounting profession.

Literature Review

The accounting education curricula is changing rapidly and requires a constant review of how best to present accounting information and encourage learning (Albrech and Sack, 2000). Universities are expected to react to the changes taking place in the business environment through updating relevant curricula. In Nigeria, university educators are not completely free to design the content of the subject they teach. There are several factors influencing decisions about curricula change such as the government accreditation through the National Universities Commission (NUC) which provides Benchmark Minimum Academic Standards (BMAS) for undergraduate's degree programs in Nigerian Universities and the Professionals Accounting Educators Accreditation (i.e Professional Bodies). In addition, there are a number of internal factors that also influence curricula choice and affect changes for example the university mission, academic fashion, available resources (financial, competent staffs, materials etc) and staff research and teaching interest (Wilhelm, 2004; Malgwi, et al, 2005).

However, prior studies have raised questions about accreditation processes in higher educational institutions and argue that such processes represent a power struggle between academics and accrediting bodies (Lightbody, 2010). Further accreditation has been described as a constraint on the innovation in accounting programs (Lowrie, 2008). Therefore it is seen that since universities focus on satisfying the requirements of the accreditation guidelines, they often find that there is no room in the program to include any valuable and innovative change. It is therefore augured that the credibility of the accreditation system is debatable.

Previous studies have indicated the need for the accounting education change to reflect among other things the implication of changing demands of businesses e.g International Federation of Accountants (IFAC) (1994), identifies that university accounting education curricula should include subjects designed to provide students with understanding of global issues affecting society and business environment. Evans (2012), identified that accountants and accounting students requires improved knowledge and skills in using Information Technology system. They argue that by delivering effective up-to-date education, accounting educators within the university system may also need to develop e-business content in their accounting curricula as a tool to help them retain their superiority as a source of well-educated recruits into the profession. Jeckling and Calero (2006) emphasized on the importance of university curricula content to reflect the needed knowledge and skills required for an increasing sophiscated and changing business environment. In a related study, Grayson (2004) opined that jobs outcomes are connected to some extent to what graduates might learn in universities and therefore argues that university accounting curricula should reflect changes to meet job demands. Other accounting education studies have examined how accounting faculties can be motivated e.g Adhikari, et al, (1999), and what should be taught in classrooms (Ashcroft et al, 2008).

On the other hand, prior studies have provided significant influence of professional accreditation system on accounting education, e.g Lightbody (2010), found that Australian university accounting graduates are allowed to obtain associate membership after completing the accredited accounting program without having to undertake further foundation level exams provided such university align their accounting programs with the professional accreditation guidelines.

Process of Accounting Education in Nigeria

The process of accounting education in Nigeria emphasizes university based training and internship with professional bodies after successful passing of prescribed professional examinations. The apparent demand for accounting education, as evidenced by the number of students has continued to grow significantly since Nigerian universities started offering undergraduate accounting program and most of these universities offer postgraduate program in accounting that is Master of Science (Msc) Accounting and Doctor of Philosophy (PhD) Accounting.

Since 1948 when university education started in Nigeria with the establishment of University College Ibadan, accounting education did not start as university course until 1960 when University of Nigeria Nsukka was established. At the beginning of 1962 there were only four full time universities offering accounting programs. The development of the economy and creation of more states led to increase in business activities which result to the establishment of eight universities in 1975 all with accounting departments. The number of universities in Nigeria has increased substantially in 1988 with the establishment of eight more universities, so has the number of universities offering degree program in accounting increased. Currently, Nigeria has 33 federal universities, 31 states universities and 34 private universities. This study will focus on federal universities in Nigeria due to the following reasons: first these universities are under the supervision of National Universities Commission an agency of the federal ministry of education which regulates university education in Nigeria. Second, admission into these universities is centralized and based on a nation-wide examination administered by the Joint Admission and Matriculation Board (JAMB). Table 1: provides list of federal universities in Nigeria.

The most significant challenge for an accounting department is to decide which specific courses should be required for the degree. This is largely an issue of breath versus depth, but they observe the basic minimum standard established by the National University Commission which regulate university education in Nigeria. Many accounting academics prefer student to take wider range of accounting and non-accounting courses as there are arguments to support the idea that future accounting professionals would benefit from a wider liberal arts programs. (See for example, Gardner, 2005; Berkowitz, 2006), On the other hand accounting departments are under pressure to provide depth of coverage of accounting concepts and procedures through quite specific accounting courses. Furthermore, it has been observed that today's accountants are more involved in consulting and business advisory services than before due to the increasing need for financial and non financial services and they are also expected to work in diverse business areas such as: marketing; organizational planning and control; production; logistic; human resources management; entrepreneurship; general management (Sauser, 2000; Parker, 2001; Carnegie and Napier, 2010).

Table 1: Names of Federal Universities and Dates of Establishment as at December 2014

No	Universities	Year Founded
1	Abubakar Tafawa Belewa University, Bauchi	1988
2	Ahmadu Bello University, Zaria	1962
3	Bayero University, Kano	1975
4	Federal University of Technology, Akure	1975
5	Federal University of Technology, Owerri	1981
6	Federal University of Technology, Minna	1982
7	Federal University of Technology, Yola	1988
8	Obafemi Awolowo University, Ile-Ife	1962
9	University of Agriculture, Abeokuta	1988
10	University of Agriculture, Makurdi	1988
11	University of Abuja	1988
12	University of Nigeria Nsukka	1960
13	University of Lagos	1962
14	University of Ibadan	1947
15	University of Benin	1970
16	University of Calabar	1975
17	University of Ilorin	1975
18	University of Jos	1975
19	University of Maiduguri	1975
20	University of Port-Harcourt	1975
21	Usmanu Danfodiyo University, Sokoto	1975
22	Federal University, Dutse	2011
23	Federal University, Dutsi-ma	2011
24	Federal University, Kashere	2011
25	Federal University, Lafia	2011
26	Federal University, Wukari	2011
27	Federal University, Oye-Ekiti	2011
28	Federal University, Otuoke	2011
29	Federal University, Ndufu-Alike	2011
30	Federal University, Lokoja	2011
31	Federal University, Birnin-Kebbi	2013
32	Federal University, Gusau	2013
33	Nigerian Defense Academy, Kaduna	1988

Source: Compiled by the researcher

Research Methodology

To facilitate the analyses, the study used survey questionnaire to collect data. The survey instrument was adopted from Razaee et al, 1997 and Lin et al 2005. A modification was made in the survey instrument to suite the study needs. The survey instrument contains three sections. The first section of the questionnaire provides background and demographic information of the respondents. The second section asked the respondent of their perception of curriculum content of an accounting degree program and to express the degree of importance they place on a variety of courses related to accounting degree education. The selected topics were compiled after a detailed review of the Benchmark Minimum Academic Standards for Undergraduate Programs in Nigeria Universities Issued by the National Universities Commission and were ranked in importance on a five-point Likert scale ranging from “very important” to “unimportant”. The third section contain a list of courses that seeks the respondent view on which they think should be incorporated in the Benchmark Minimum Academic Standards (BMAS).

The questionnaire was distributed to accounting educators, practitioners, students, and employers. Educators include faculty members in the sample universities. Practitioners include public accountants at private firms, professional accountants working at various enterprises and government officials in charge of accounting work. Students sample consist of student majoring in accounting at the sample universities. Employers include those enterprises and government agencies that required/employed the services of accounting graduates. From each individual university the researcher selected an accounting department head and four faculty members designated as teaching accounting courses. The questionnaire was hand delivered to 15 accounting educators and 260 accounting students at the sample universities because they are within the reach of the researcher. The questionnaire was also hand delivered and mailed randomly to 48 managing partners of Big four and national accounting firms and a random sample of 60 chief financial officers.

Results

Following the analyses employed by Lin et al, (2005), the study grouped survey questions relating core and common courses. Table 2 presents the descriptive statistics for the survey results. The mean and rank for each core and common courses are listed in the panel 1 A-B respectively. From the first column in Table 2, it can be sum that the respondents established that financial accounting, taxation costs and management accounting, auditing and financial management as the five most important core courses. Business communication, business mathematics, use of English, economic theory and entrepreneurship study were ranked as the most important common courses.

Table 2 also presents the mean and rank scores for the educators, practitioners, employers and students groups. For the core courses components certain differences manifest in the perceived importance scores and their ranking among the four groups. Regarding the five most important core courses accounting educators and students respondents ranked financial accounting as the most important core course, although, financial accounting was ranked as the third most important core course by the practitioners and employer. In addition employers and students respondents ranked cost and management accounting as the second most important core course but it is perceived as third and fourth in importance by educators and practitioners. Furthermore, certain variances manifest in importance of ranking of other core courses e.g analysis for business decisions, production management, management information system, and business policy among the four groups of respondents. The four groups mean and rank scores on the least important core courses actually exist: production management and business policy were perceived as the lowest by all the four groups.

Regarding the common courses educators and students respondents are consistent in identifying the two most important common courses that is business mathematics and business communication. However, the employers and practitioners respondents gave more weight to business law and entrepreneurship study. The four groups of respondents ranked introduction to philosophy and logic, history and philosophy of science and elements of government as the least important among the common courses.

Table 2: Descriptive statistics and appropriate rankings of survey questions

Topics	**Educators (*n* = 15)**		**Practitioners (*n* = 48)**		**Employer's (*n* = 60)**		**Students (*n* = 260)**		**Overall (*n* = 383)**	
Panel 1, A: Core courses	**mean**	**rank**	**mean**	**rank**	**mean**	**rank**	**mean**	**rank**	**mean**	**rank**
Financial accounting	4.75	1	4.67	3	4.49	3	4.74	1	4.66	1
Cost & management accounting	4.56	3	4.33	4	4.52	2	4.57	2	4.49	3
Taxation	4.64	2	4.76	1	4.64	1	4.56	3	4.65	2
Auditing	4.51	4	4.71	2	4.13	5	4.33	4	4.42	4
Public sector accounting	3.88	6	3.66	7	4.16	4	4.21	5	3.97	6
Financial management	4.22	5	3.74	6	4.12	6	4.13	6	4.05	5
International accounting	3.70	7	3.99	5	3.54	8	3.79	7	3.75	7
Production management	2.83	11	2.56	11	2.76	11	3.13	10	2.82	11
Management information system	3.26	8	3.36	8	3.63	7	3.46	8	3.42	8
Business policy	2.92	10	2.79	10	3.13	9	3.26	11	3.02	10
Analysis for business decision	3.13	9	3.31	9	2.86	10	3.38	9	3.17	9
Panel 1, B: Common Course	**mean**	**rank**	**mean**	**rank**	**mean**	**rank**	**mean**	**rank**	**mean**	**rank**
Business mathematics	3.98	1	3.62	3	3.30	6	3.10	6	3.50	2
Business statistics	3.76	3	3.13	7	2.96	8	2.92	8	3.19	7
Business communication	3.83	2	3.87	1	3.92	1	3.49	2	3.77	1
Business & commercial law	3.46	5	3.56	4	3.44	4	3.07	7	3.36	6
Entrepreneurship study	3.20	7	3.33	6	3.61	2	3.43	3	3.39	5
Economic theory (micro & macro)	3.37	6	3.67	2	3.54	3	3.19	5	3.44	4
Introduction to computer	3.12	8	2.86	8	3.14	7	3.22	4	3.08	8
Introduction to philosophy and logic	2.82	10	2.56	10	2.26	11	2.47	11	2.52	11
History and philosophy of science	2.96	9	2.64	9	2.56	10	2.82	9	2.74	9
Elements of government	2.56	11	2.32	11	2.78	9	2.66	10	2.58	10
Use of English	3.59	4	3.41	5	3.39	5	3.55	1	3.48	3

The survey results indicated that respondents recognized the importance of a series of core courses and common courses for the training of future accountants in Nigeria. The respondents held steady views of the top five most important core courses. As indicated in

Table 2, the perceived important core courses are mainly the traditional accounting courses whereas most of the multi-disciplinary core courses have received relatively lower scores. This result may suggest that the importance of broader core courses in accounting education is fully recognized by the respondents except the production management. In addition, the mean and rank scores for core courses are considerably higher than for the common courses, this may signifies that the emphasis of current university accounting education in Nigeria is upon core courses, while the common courses elements have received less attention in particular the introduction to philosophy and logic, history and philosophy of science and elements of government are not adequately recognized by the respondents.

Table3: Descriptive statistics and appropriate ranking of survey questions

Topics	**Educators (n = 15) mean**	**rank**	**Practitioners (n = 48) mean**	**rank**	**Employers (n = 60) mean**	**rank**	**Students (n = 260) mean**	**rank**	**Overall (n = 383) mean**	**rank**
International Accounting Standards Education (IFRS&IPSAS)	4.41	1	4.62	3	4.23	3	4.58	1	4.46	1
Corporate Governance Issues	3.98	4	4.06	4	4.27	2	4.18	3	4.12	3
Accounting Ethics	4.38	2	4.76	1	4.33	1	4.12	4	4.39	2
Assurance Services	3.56	5	4.65	2	4.22	4	3.96	5	4.09	4
Accounting Information System	4.12	3	3.48	5	3.76	5	4.33	2	3.92	5
Issues in International Taxation	2.58	8	2.77	8	2.43	8	2.98	7	2.69	8
International Financial Management	2.72	7	2.83	7	2.67	6	2.91	8	2.78	7
Project Management Financing	2.44	9	2.56	9	2.12	9	2.34	9	2.36	9
Accounting Case Study	3.42	6	2.89	6	2.47	7	3.76	6	3.13	6

Results pertaining to the perceived responses of the educators, practitioners, employers and students groups on the needs to incorporate new additional courses in the mandated (BMAS) are presented in Table 3. From the table it can be seen that at the aggregate level all the four groups of respondents have identified International Accounting Standards Education, Accounting Ethics Education and Corporate Governance Issues as the three most important courses to be incorporated in the Nigerian undergraduate accounting degree program. Table 3, also presents the mean and rank scores for the four groups for individual courses, which shows certain variances exists. Practitioners rank International Accounting Standards Education as the most perceived important course, although it was ranked second and third as the most important by students and educators groups. Corporate governance issues was recognized by employers respondents as the first most important course but it rank 4th by practitioners and educators respondents. Accounting ethics was perceived as the most important courses by practitioners and employers groups but it was not given the same weight from the students group. On overall the four respondents groups rank International financial management, issues in international taxation and project finance management as least perceived important courses.

This study thus, argues that university accounting education in Nigeria is concentrating on content-mastery core courses. The study therefore suggest the needs in light of globalization and changing business environment in the world and based on the respondents responses for reforms in Nigeria's universities accounting curricula especially in the area of International Accounting Standards (IFRS and IPSAS), to meet with the current International Education Standards, other areas that need to be incorporated in the accounting curricula are corporate governance issues to provide future accountants with broader perspectives to manage corporations, accounting ethics especially with the collapse of Arthur Anderson in US which is as a result of accountants negligence, accounting information system and assurances services because the current course content of auditing emphasized more on basic procedural aspects of auditing ignoring the assurance services aspects to meet the needs of the market demand in changing business environment and to enable Nigerian future accountant to compete globally.

Conclusion

This study used a questionnaire to examine the perceived importance of core and common courses for accounting education in Nigeria. The results indicated that the respondents generally agreed on a number of core and common courses that should be developed in Nigerian undergraduate accounting education. The views about the importance of the required core and common courses for accounting undergraduates students as perceived by Nigerian accounting educators, practitioners, employers, and students are reasonably similar, although some differences manifest in the perceptions of the four groups of respondent. The findings indicated that the core base of accounting education in Nigeria is still quite narrow. In addition, common courses development remains a relatively weak area that must be strengthened significantly in Nigeria accounting education. The study believed that the current state of accounting education in Nigeria could not satisfy the development of the needed required courses for the undergraduate accounting degree program. This study suggest that for the introduction of International Accounting Standards education, corporate governance issues, accounting ethics, accounting information system, and assurance services as mandatory in the Benchmark Minimum Academic Standards for Undergraduate Programs in Nigerian Universities to enable Nigerian accounting graduates acquire the needed knowledge to meet the market demand.

The overall lower scores for the respondent's assessment of whether the specified common courses are being provided by the existing accounting programs suggest that the present state of accounting education lag substantially behind the demands for training future accountants. Thus accounting education reform is absolutely necessary in Nigeria. Therefore Nigerian accounting educators must fully understand what is demanded for accounting graduates by the accounting profession, and redesign accounting curriculum to deliver effectively the required core and common courses in accounting education. However, with other researches, this study also had potential limitations which provide venues for further research. The focus of this study was on Federal Universities in Nigeria. These universities are under greater regulatory pressure than the private universities. Thus the results obtained from the data may not be generalized to include private universities because private universities may have the options to introduce more courses to suite the aims for which they were established. Further studies could be extended to cover undergraduates accounting curriculum contents of these private universities.

References

Accounting Education Change Commission (1990). Objective of Education for Accountants: Position Statement Number One. *Issue in Accounting Education*, 5, 307–312.

Adhikari, A., Flanigan,M., and Tondkar, R. (1999). A Survey of International Accounting Education in the US and some other Countries. *Journal of Accounting Education*, 17, {{175–189.

Albrecht, W., & Sack, R. (2000). Accounting Education: Charting the Course through a Perilous Future, *Accounting Education Series*, 16. Sarasota, FL: American Accounting Association.

American Accounting Association (AAA). (1986). Committee on the Future Structure, Content and Scope of Accounting Education (The Bedford Committee). Future accounting education: Preparing for the expanded profession. *Issues in Accounting Education*, 1(1), 168–195.

Amr K, Clare, R and Greg, S, (2013). E-business in Accounting Education in the UK and Ireland: Influences on Inclusion in the Curriculum. *The International Journal of Management Education.* 1–13

Ashcroft, P., G. Chevis and L.M. Smith (2008) Faculty Perspectives on International Accounting Topics. *Advances in Accounting, Incorporating Advances in International Journal*, 24(1), 139–144.

Berkowitz, P, (2006).Liberal *Education, then and now Policy Review,* 140 (December/January), 47–67.

Burnett, S. (2003). The Future of Accounting Education: A Regional Perspective. *Journal of Education of Business*. 78(3), 129–136.

Byrne, M and Flood, B, (2003). Defining the Present and Shaping the Future: The Changing Nature of Accounting Education in Ireland. *Journal of Accounting Education*. 21, 197-213.

Carnegie, G, and Napier, C, (2010). Traditional Accountants and Business Professionals: Portraying the Accounting Profession after Enron. *Accounting, Organizations and Society*, 35(3), 360–376.

Carr, S., Chua, F., and Perera, H. (2006). University Accounting Curricula: The Perceptions of an alumni group. *Accounting Education: An International Journal*, 15(4), 359–376.

Celik, O and Ecer, A, (2009). Efficiency in Accounting Education: Evidence from Turkish Universities. *Critical Perspective on Accounting*. 20, 614-634.

Courtis, J. K., & Zaid, O. (2002). A Early Employment Problems of Australian Accounting Graduates: An Exploratory Study. *Accounting Forum*, 26(3), 321–339.

Evans, E., Burritt, R., and Guthrie, J. (Eds.), (2012). Emerging Pathways for the next Generation of Accountants. Sydney and the Centre for *Accounting, Governance and Sustainability*; Adelaide: The Institute of Chartered Accountants in Australia; University of South Australia.

Forristal, T. (2002). CAP Forum: The Future of Accounting Education: The Response of Charted Accountants. *Canadian Accounting Perspectives*, 1(1), 80–88.

Gardner, H, (2005). Beyond Markets and Individuals: A Focus on Educational Goals. In R. Hersh (Ed.), *Declining by Degrees: Higher education at risk*. New York: Palgrave Macmillan.

Gill, J. (1998). *Accounting for Teaching and Learning in the 21st Century*. Charted Accountants Journal of New Zealand, 77(7), 38–45.

Grayson, J. (2004). Social Dynamics, University Experiences, and Graduates' Job Outcomes. *British Journal of Sociology Education*. 25(5), 609–627.

Humphrey, C. (2005). In Aftermath of Crisis: Reflections on the Principles, Values and Significance of Academic Inquiry in Accounting: Introduction. *European Accounting Review*. 14(2), 341–351.

International Federation of Accountants (IFAC). (1994). *Discussion paper: 2000 and Beyond. A Strategic Framework for Prequalification Education for the Accountancy Profession in the year 2000 and Beyond*. New York: IFAC.

International Federation of Accountants (IFAC). (2007). *International Education Practice Statement 2: Information Technology for Professional Accountants*. New York: IFAC.

Jackling, B., & Calero, C. (2006). Influences on Undergraduate Students' Intentions to Become Qualified Accountants: Evidence from Australia. *Accounting Education*, 15(4), 419–438

Jackling, B., & De Lange, P. (2009). Do Accounting Graduates' Skills Meet the Expectations of Employers? A Matter of Convergence or Divergence. *Accounting Education*, 18(4), 369–385.

Jeacle, I. (2008). Beyond the Boring Grey: The Construction of the colorful Accountant. *Critical Perspectives on Accounting*, 19(2), 1296–1320.

Kort, A, Roberts, C and Stoner, G, (2013). E-business in Accounting Education in the UK and Ireland: Influences on Inclusion in the Curriculum. *The International Journal of Management Education*. 1-13.

Lightbody, M. (2010). *The Impact of Accreditation on Accounting Education in 2010*. The Institute of Chartered Accountants in Australia and Centre for Accounting, Governance and Sustainability, University of South Australia.

Lin, Z. J., & Deng, S. (1991). Educating Accounting in China: Current Experience and Future Prospects. *The International Journal of Accounting*. 27(2), 164–173.

Lin, Z.J, Xiong, X and Liu, M, (2005). Knowledge Base and Skill Development in Accounting Education: Evidence from China. *Journal of Accounting Education*. (23), 149-169.

Lowrie, A. (2008). The Relevance of Aggression and the Aggression of Relevance: The Rise of the Accreditation Machine. *International Journal of Educational Management*, 22(4), 352–364.

Malgwi, C., Howe, M., and Burnaby, P. (2005). Influences on Student Choice of College Major. *Journal of Education for Business*, 80(5), 275–282.

Mohamed, E. K. A., and Lashine, S. H. (2003). Accounting Knowledge and Skills and the Challenges of a Global Business Environment. *Managerial Finance*, 29(7), 3–16.

Ocampo-Gomez, E and Ortega-Guerrero, J.C, (2013). Expanding the perspective and Knowledge of the Accounting Curriculum and Pedagogy in other Locations: The Case of Mexico. *Critical Perspective on Accounting*. 24, 143-153.

Pan, P and Perera, H, (2012). Market Relevance of University Accounting Programs: Evidence from Australia. *Accounting Forum*. 36, 91-108.

Parker, L. D. (2001). Back to the Future: The Broadening Accounting Trajectory. British *Accounting Review*, 33(4), 421–453.

Rezaee, Z, Szendi, J and Elmore, R.C (1997). International Accounting Education: Insights from Academicians and Practitioners. *The International Journal of Accounting*. 32(1), 99-117

ROSC, (2011). Report on the Observance of Standard and Codes (Nigeria). *Accounting and Auditing*. Published June 6, 2011, by a team of the World Bank.

Sauser, L. D, (2000). The CPA Profession: Responding to a Changing Environment. S. A. M. *Advanced Management Journal*, 65(2), 36–40.

Tang, Y. (1997). The Recent Accounting Development and Internationalization of Accounting Education in China. *Issues in Accounting Education*. 12(1), 219–227.

Uche, C.U, (2002). Professional Accounting Development in Nigeria: Threats from the Inside and Outside. *Accounting Organizations and Society*. 27, 471-496.

Wilhelm, W. (2004). The Relative Influence of Published Teaching Evaluations and other Instructor Attributes on Course Choice. *Journal of Marketing Education*, 26(17), 17–30.

APPENDIX A: QUESTIONNAIRE ON ACCOUNTING EDUCATION IN NIGERIA

This questionnaire is designed to investigate the present situation of undergraduate accounting education curriculum in Nigeria. A series of core and common courses that are relevant to the program are listed below. Please indicate the importance of covering each topic in an undergraduate accounting degree program by circling the appropriate number where 1= the least important, 5= the most important. Data collected in this questionnaire is for research purpose and the researcher is committed to maintain the confidentiality of your responses.

Responds Profile: (Please tick an appropriate bracket)
A. Your current occupation is:
Educator { } Practitioner { } Employer { } Student { }
B. Length of experience:
If you are a student, please tick your status as: level 1 { } level 2 { } level 3 { } level 4 { }
If you are not a student, please tick length of your job: 1-5 years { } 6-10 years { } 11-15 Years {
C. Your gender: Male { } Female { }

Core Courses	Least Important				Most Important
Financial Accounting	1	2	3	4	5
Cost and Management Accounting	1	2	3	4	5
Taxation	1	2	3	4	5
Auditing	1	2	3	4	5
Public Sector Accounting	1	2	3	4	5
Financial Management	1	2	3	4	5
International Accounting	1	2	3	4	5
Production Management	1	2	3	4	5
Management Information System	1	2	3	4	5
Business Policy	1	2	3	4	5
Analysis for Business Decisions	1	2	3	4	5
Common Courses					
Business Mathematics	1	2	3	4	5
Business Statistics	1	2	3	4	5
Business Communication	1	2	3	4	5
Business and Commercial Law	1	2	3	4	5
Entrepreneurship Studies	1	2	3	4	5
Economic Theory (Micro and Macro)	1	2	3	4	5

Introduction to Computer Studies	1	2	3	4	5
Introduction to philosophy and Logic	1	2	3	4	5
History and Philosophy of Science	1	2	3	4	5
Use of English	1	2	3	4	5
Element of Government	1	2	3	4	5

Section C. Rank in order of importance which of the following courses you think should be included in the Benchmark Minimum Academic Standards for accounting undergraduates degree program. Least important Most important

a. International Accounting Standards Education	1	2	3	4	5
b. Corporate Governance Issues	1	2	3	4	5
c. Accounting Ethics	1	2	3	4	5
d. Accounting Information System	1	2	3	4	5
e. Auditing and Assurance Services	1	2	3	4	5
f. International Financial Management	1	2	3	4	5
g. Issues in International Taxation	1	2	3	4	5
h. Project Management and Financing	1	2	3	4	5
i. Case Analysis	1	2	3	4	5

Thank you for your participation.

EDU010 Addressing accounting education challenges through experiential teaching methodologies: possible benefits, examples of successful implementation and key-considerations

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Abstract

The recent worldwide recession has served to place the focus not only the accounting profession, but also on the educational system that supports this profession. A growing body of research has highlighted that this educational system has failed to deliver entry-level accountants who are equipped with the necessary skills and competencies to cope with the ambiguous challenges that awaits them in the world of business. Both the profession and the educational system are challenged by various factors such as changing business environments and the integration of information technology into virtually all aspects of life and business processes. Current criticisms need to be addressed and future criticisms prevented if accounting education is to survive the turn of the century. It is in difficult times like these that accounting educators are called to step up and face the various challenges facing accounting education with new and innovative teaching methodologies. One theory from which such methods might stem is the theory of experiential learning and although a great deal of research has been done on the subject of using experiential learning theory in accounting education, not much of the findings have found real world application. This study explores whether specific challenges facing accounting education, as revealed by the literature review, may be addressed through the specific potential benefits which may be derived from effectively implemented experiential teaching methodologies, as revealed by the literature review. The value of this study is evident in that it provides accounting educators with a practical starting point of a list of considerations to be accounted for, when attempting to practically transfer the research in this area of accounting education into the classroom.

Introduction

Various circumstances have served to place the focus on the accounting sector (and therefore also on the accounting education sector). These factors include, but are not limited to:

- Corporate scandals, the credit crisis and the worldwide recession, with the auditing profession often being perceived as the first at fault in public corporate failures, resulting in a decrease of public trust (Drake, 2011; Van Peursem et al., 2013, Howieson et al. 2014, Raghavan and Thomas, 2014).

- The failure of the educational system to deliver entry-level accountants who are equipped with the necessary skills and competencies to cope with the ambiguous challenges that awaits them in the world of business (Albrecht and Sack, 2000; Gabbin, 2002; Cheng, 2007, Barac, 2009; Vasarhelyi, Teeter &Krahel, 2010 and Heliar, Monk & Stevenson, 2009)

- Business environment changing due to globalization (Drake, 2011; Fouche, 2013) and the tendency of the auditing and accounting firms to address this change by diversifying into various fields outside the field of auditing and tax has increased the need for more broadly-skilled accountants (Collett, 2000; Carnegie & Napier, 2010; Mohapatra, Popova, & Xu, 2013; Raghavan & Thomas, 2014)

- Business environments changing due to the integration of information technology into virtually all aspects of life, the world of business and the world of education ((Belfo & Trigo, 2013; Mohapatra, Popova & Xu, 2013; Koo & Yang, 2014; Sudhir & Talukdar, 2015;Rhodes, 2013, Merchant et al., 2014, Papageorgiou, 2014).

- Researchers reporting that the accounting profession and qualification may not survive the turn of the century if criticisms and calls for change are not adhered to (Albrecht & Sack, 2000; Wessels, 2004; and Kassim, 2014)

- A large body of research on the use of experiential learning theory to rejuvenate accounting education, which hasn't found much real world application (Apostolou et al. 2013; Fouché, 2013)

This study explores whether specific challenges facing accounting education, as revealed by the literature review, may be addressed through the specific potential benefits which may be derived from effectively implemented experiential teaching methodologies, as revealed by the literature review.

Since the focus has been placed on accounting education by the various factors mentioned above, it is especially concerning that Buckhaults and Fisher (2011) reports that accounting education has been on the decline. Much research has been done in response to the various criticisms and challenges facing accounting education, however a survey by Diller-Haas (2004) of accounting programmes in the New York City metropolitan area indicated that 71% of the accounting programmes still followed a traditional curriculum, while Woronoff (2009) again highlighted the failure of universities to move the emphasis of assessment from technical competence towards actual skills. The profession has picked up on this and is still complaining that graduates cannot perform simple tasks despite having a vast array of theoretical knowledge to do so (Rudman &Terblanche, 2011).

SAICA (2012) has responded to the dilemma in its new Competency Framework where it specifically states that students only begin to understand knowledge when they examine it in relation to a practical experience, and suggests that students should be taught within the real-life environment of the specific subject. As this new framework focuses on pervasive qualities and skills including Ethics and Professionalism, Personal Attributes and Professional skills as well as specific competencies, it may address some of the criticism (Fouché, 2013). The onus is now, more than ever, on the accounting educators to follow the lead in ushering in a new era in accounting education where entry-level accountants are equipped to take on the many challenges in the modern day business environment.SAICA is not the only professional body who is moving in this direction. The new AACSB guidelines (AACSB, 2013) clearly advocate the role of using experiential learning in business school curriculum to meet the learning needs of business students by firstly actively involving them in the educational experience and secondly ensuring that experience leads to a set of meaningful outcomes (Burch , Heller & Freed, 2014)

Accounting educators need to face the challenge of facilitating learners in the process of acquiring the skills called for in such a manner that they will be able to apply them in the real world (Coetzee & Oberholzer, 2009). This is a task for which the traditional accounting education approach, where the emphasis is on a transfer of a body of knowledge, has been found to be inadequate (American Accounting Association, 1986; Rowlands et al., 1998). One of the tools accounting educators may choose to utilize in attempting to achieve this goal, is experiential learning.

Experiential learning or active learning, as it is sometimes called may be the way to rejuvenate accounting education (Fowler, 2006) and there is evidence that experiential methodologies may, at least to some extent, be used to address some of the concerns regarding current accounting education (Botha, 2014). There is also evidence that it has the potential to create learning outcomes equivalent to those gained by actual work experience (Rudman &Terblance; 2011) and may therefore serve to bridge the gap between practice and the classroom.

It has to be noted however that, although accounting educators have taken heed of the criticisms against accounting education as is evidenced by the amounts of research, including 291 articles in only six journals in the period 2010 to 2012 alone, done on the subject of curriculum, assurance of learning and instruction, educational technology, faculty issues and students in accounting education (Apostolou et al. 2013), responses from both the business world and the accounting profession indicate that this research has not found much practical application (Fouché, 2013; Howieson et al., 2014). The findings from the literature support the perception that accounting education still has a focus on the transfer of knowledge with only sporadic innovation (Fouché, 2013). In fact, at most what has occurred is sporadic innovation, while the basic build of accounting education has remained untouched (Merino, 2006; Mashayekhi & Mohammadi, 2014).

Contribution of this study

It has become very clear that accounting educators have the responsibility to adapt their programs, teaching styles and modes of delivery to the ever evolving inter-disciplinary nature of the accounting profession, if quality graduates who are able to deal with this ever evolving world in a way that will increase public trust is to be produced by the accounting education sector (Raghavan & Thomas, 2014). It is also clear that there has been a vast amount of research conducted in this area (Apostolou et al, 2013). The problem, however, is that this research has not found much practical application (Fouché, 2013). Accounting education needs to be rejuvenated and researchers have cited the experiential learning theory as a possible way of doing this (Fowler, 2006). This study contributes to the world of accounting education by exploring the specific possible benefits of experiential teaching methodologies and linking these to the specific challenges facing accounting educators, through the study of various examples of successfully implemented experiential methods, so that the desired cause and effect relationship between a specific experiential teaching method and a specific challenge/ desired outcome, becomes clear. The value of this study lies in the practical guidance it provides to accounting educators and researchers who want to implement and reap the benefits of effectively implemented experiential teaching methodologies in order to address the challenges and criticisms facing current accounting education. The aim of the study is to aid accounting educators in the practical transferral of the existing body of research to the classroom.

Research Problem

In light of the recent recession and other public and corporate failures, the focus has again shifted towards the accounting profession and therefore also accounting education. The challenges facing accounting educators are increasing with the demands posed by the modern-day profession and the environment in which it operates. The demands from the profession are increasing along with a continued criticism that these demands are not being met by current accounting education. Much research has been done in the fields of improved methodology, subject content, and needed skills. Responses from both the business world and the profession, however, indicate that this research has not found much *practical application* (Albrecht & Sack 2000; Dempsey & Stegman, 2001; Merino 2006, Fouché, 2013).

Research Objectives

In order to address this primaryobjective, the following secondary objectives are set:

- Review literature regarding the specific challenges facing modern-day accounting education
- Review literature regarding the potential benefits of experiential teaching methodologies
- Analyse the literature above in order to construct a table of cause and effect relationships which indicate clearly which benefits of experiential teaching may address which challenges facing accounting education

Literature Review

In order to be able to interpret how the challenges facing accounting education today may be addressed through the implementation of experiential teaching methodologies it is first necessary to gain an understanding of 1) the various criticisms and challenges facing modern-day accounting education, 2) examples where experiential teaching methodologies where effectively implemented in accounting and related tertiary education and 3) the potential benefits of experiential teaching. A literature review is therefore performed.

Current challenges and criticisms facing accounting education

There is a gap between the classroom and the real world (Stewart & Dougherty, 1993; Weil, Oyelere, Yeoh, & Firer, 2001) and between accounting practice and accounting education (Stainbank, 2003; Mashayekhi & Mohammadi, 2014). Lecturers are challenged to bridge the academic and the practical (Ravenscroft & Williams, 2004; Drake, 2011; Mashayekhi & Mohammadi, 2014) and to equip entry-level accountants with an understanding of what it means to be a member of the profession (PWC, 2003). Research reports failure in this area (Drake, 2011; Mashayekhi & Mohammadi, 2014).

Recent research also indicates that accounting education is failing to produce entry-level accountants whose performance in the workplace is satisfactory, even though they have satisfactory levels of theoretical knowledge (Coetzee & Oberholzer, 2009; Helliar, Monk, & Stevenson, 2009). The SAICA competency framework calls for the future accountants to have pervasive qualities and skills including Ethics and Professionalism, Personal Attributes and Professional skills as well as specific competencies including Strategy, Risk Management and Governance, Accounting and External Reporting, Auditing and Assurance, Financial Management, Management Decision Making and Control and Taxation (SAICA, 2012). The workplace needs accountants that have the capacity for inquiry, abstract logical thinking, critical analysis and who can apply theoretical knowledge in complex, ill-defined practical situations where the best answer is difficult to identify (AECC, 1990; PWC, 2003), yet there is evidence that the tertiary educational system has failed to meet this need (Dombrowski, 1993; Coetzee & Oberholzer, 2009). It is noted that academic studies are not intended to provide a full scope of practical experience as in traineeship, but some type of practical learning needs to take place, even if it is only simulated, if the failures of accounting education, is to be addressed (Rudman &Terblanche, 2011).

The way that accounting education is lectured might be to blame for the above mentioned failures. Too much lecturing is done (Siegel et al., 1997; Maltby, 2001) and the emphasis is on passing theoretical examinations (Botha, 2001; Grisoni, 2002; PWC, 2003). There is a great focus on technical content due to the prescribed syllabi of professional bodies such as IFAC, SAICA, CICA, AICPA, CIMA and ICAEW (Fouché, 2013; Howieson et al., 2014). Students react by spending most of their time on passively memorizing content and virtually no time on developing the skills, lifelong learning attitude and deeper understanding that the public practice seeks from entry-level accountants (Diller-Haas, 2004; Maltby 2001; SAICA, 2000). Students favour surface learning to deep learning (Clikeman, 2012) in order to beat the system, instead of focusing on getting to grips with the underlying concepts. Students generally lack practical experience of the workplace (Clikeman, 2012); the very element which is needed in order to adequately transfer knowledge of the theoretical concepts to students (Arens et al., 1970; May, 1992; Ferguson, Richardson and Wines, 2000; Sadler and Erasmus, 2005). Even though various elements of effective teaching methodologies are sometimes present, the focus of accounting education is still on subject content and the teaching methodologies are content driven. This results in a growing gap between what accountants do and what accounting lecturers teach (Mashayekhi & Mohammadi, 2014). Granted, a high level of technical knowledge has served to bring a high regard to South African accountants and specifically Chartered Accountants, but has also left little room for skill development and experimentation in teaching methodologies (Fouché, 2013). The professional accounting bodies, like IFAC, SAICA, CICA, AICPA, CIMA and ICAEW may need to play a more active role in this regard, as they set the technical knowledge requirements. One of the reasons for the immense focus on technical knowledge may well be a content overload in the prescribed syllabi of the various institutes. (Fouché, 2013).

Various factors impact on the current day accounting education environment and need to be considered by the accounting lecturers who are educating the future generation of prospective accountants. These factors include, but are not limited to the impact of information technology developments on the public practice's environment (PWC, 2002; Wessels, 2004; Omoteso, 2012; Mohapatra, Popova, & Xu, 2013; Bell, Knechel & Payne, 2011; Yang & Koo, 2014) and on the type of students in classes. Accounting lecturers are challenged to motivate students who grew up with television, internet and social media as the primary and authoritative sources of knowledge (Penny, Frankel & Mothersill, 2012) and of whom most have not chosen to study accounting because of ability or affinity towards the sector, but for vocational reasons related to future extrinsic rewards. Students often have negative, stereotypical perceptions of accounting (Mladenovic, 2000; Maltby, 2001) and are acutely aware of the hefty course load (Steenkamp & Von Wielligh, 2011).But, inherent learning difficulties of accounting education also result from more than the quantity of material. It is also the complexity of the material and the need of novice accountants to process many interrelatd elements of information simultaneously in order to understand the content, which generates excessive levels of working memory laod (Blayney et al., 2010).

From the above literature review it is evident that the challenges facing modern-day accounting education may be divided for purposes of summary into the following themes:

TABLE 1
Challenges to auditing education

Challenges Identified	Literature
There is a growing gap between what happens in practice and what is taught in the classroom.	(Stewart & Dougherty, 1993; Weil, Oyelere, Yeoh, & Firer, 2001; Stainbank, 2003; PWC, 2003; Ravenscroft & Williams, 2004; Drake, 2011; Mashayekhi & Mohammadi, 2014)
Students lack an understanding of what it means to be a member of the profession	(PWC, 2003; Drake, 2011; Mashayekhi & Mohammadi, 2014)
Entry-level accountants lack the skills necessary to apply theoretical knowledge and to address the challenges of the workplace	(Coetzee &Oberholzer, 2009; Helliar, Monk, & Stevenson, 2009; SAICA, 2012)
Teaching methodologies in accounting education are content focused resulting in the only learning occurring being a transfer of a body of knowledge	(Siegel et al., 1997; SAICA, 2000; Maltby, 2001; Diller-Haas, 2004)
Assessment methods again enforces that it is enough for students to only experience the transfer of a body of knowledge as part of the learning process	
The educational process lacks the opportunity for students to learn from practical experience	(Arens et al., 1970; May, 1992; Ferguson, Richardson and Wines, 2000; Sadler and Erasmus, 2005; Rudman &Terblanche, 2011)
The curriculum is overloaded in both the amount and complexity of technical knowledge that needs to be gained by students during the educational process	(Blayney et al., 2010; Steenkamp & Von Wielligh, 2011; Fouché, 2013; Howieson et al., 2014)
Students tend to have negative stereotypical perceptions of accounting as a subject and are not inherently motivated	(Mladenovic, 2000; Maltby, 2001)
Student backgrounds includes an overexposure to technology and are not easily motivated	(Penny, Frankel &Mothersill, 2012)
Students tend to favour surface learning to deep learning and therefore does not progress towards lifelong learning	(Clikeman, 2012)

Experiential learning theory

There are various learning theories that may be applied in tertiary education. These include, but are not limited to behaviourist, cognitivist, humanist, social learning and constructivist theory. Of all of these learning theories experiential learning theory, as a subset of social learning theory was first introduced by Kolb in 1984. This theory maintains that learning occurs as the individual moves through the cycle of concrete experience (the real world;

feeling), reflective observation (thinking), abstract conceptualisation (figurative presentation) and active experimentation (doing). In traditional auditing education, the catalyst of concrete experience is missing. Therefore, there exists a gap in which an experiential learning method/aid could be used to complete the cycle. It is therefore possible that experiential teaching can be used as the much needed "bridge between the classroom and real world" (Weil et al., 2001) in order for students to establish the frame of reference in which future theoretical knowledge will be 'anchored'. In this way, students will not only benefit from the experiential learning experience, but future theoretical lectures might also be comprehended more effectively.

Definition of experiential theory

Confucius,450 B.C., once said: "Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand." This quote very much embodies the pedagogical foundation of experiential teaching.

Experiential learning theory defines learning as "the process whereby knowledge is created through the transformation of experience" (Passarelli & Kolb, 2011).This process involves students going through stages of concrete experience, abstract conceptualization, reflective observation and active experimentation and not necessarily in that order (Passarelli & Kolb, 2011)

Passarelli & Kolb (2011:4) defines experiential learning theory as "a dynamic view of learning based on a learning cycle driven by the resolution of the dual dialectics of action/reflection and experience/abstraction". Penny, Frankel & Mothersill (2012:1) also defines experiential learning theory as an "effective pedagogical tool for engaging students as they construct conceptual and practical knowledge in real life situations."Moore (2010:1) explains it well when he states that while experiential education takes a number of forms "they all involve students in activities that look rather different from more traditional classroom-based methods". And while this is not the only pedagogically sound theory that has been researched in an attempt to improve and enhance traditional methodologies, educational psychologists of differing schools agree that experience is a vital component of successful learning (Marriott, 2004).

Experiential teaching methods have been used successfully in the fields of civil engineering (Malone, 1980; Ebner & Holzinger,2002), MBA education (Hall, 2006; Gaskin & Berente, 2011) and accounting education (Rudman & Steenkamp, 2011; Fouche, 2013; Botha, 2014;).Since the turn of the millennium, business schools have also employed the use of business games and simulations to help teach students marketing, strategy, collaboration, and other useful real-world skills in a risk-free and quasi-experiential environment (Gaskin & Berente, 2011). Numerous universities offering medical education has developed entire curriculums around experiential learning (specifically Problem-based-learning and simulations (Hansen, 2006; Lippert, Dieckmann & Oestergaard, 2009) and much research has been done highlighting the benefits of this (Scalese, Obeso & Issenberg, 2008; Lippert, Dieckmann & Oestergaard, 2009).

Possible Benefits

Much research has been done on the reported possible benefits of experiential teaching both by the researchers mentioned in the literature review above and by others. The findings of this research is reported below:

In the area of skill development, experiential teaching methods have been reported by various researchers to develop critical and logical thinking skills (Haywood, 2004; Rudman & Terblanche, 2011), as well as flexible knowledge, analyzing abilities, effective problem-solving skills (Hmelo-Silver, 2004; Hansen, 2006) and judgement skills (Libby, 1991). Students get the opportunity to practice these new skills in a risk free environment in order to transfer learning to the workplace (Swink, 1993).

When the experiential method also encompasses a social aspect, effective collaboration and communication as well as leadership skills are developed (Libby, 1991; Hansen, 2006; Hmelo-Silver, 2004; Mierson & Freiert, 2004). An opportunity for co-operative learning to take place is provided while students learn to develop various personal skills by experiencing working in a team (Stainbank, 2003; Rudman &Terblanche, 2011).

The experiential methods can also be designed in order to develop abilities and key competencies which would not be developed through classroom teaching alone (Bhattacharjee & Shaw, 2001), such as the key competencies called for by SAICA's new competency framework (SAICA, 2012).

Regarding one of the big challenges facing accounting education, namely student learning approaches, experiential teaching methodologies place the focus on a deeper understanding (Rudman &Terblanche, 2011; Butler & Von Wielligh, 2012), contextualization (PwC, 2003; Rudman &Terblanche, 2011) and self-directed (Hmelo-Silver, 2004), and life-long learning (Hansen, 2006). When the content of the experiential teaching method is also made available to students via the integration of information technology, a depth of coverage which would not be possible in limited classroom time becomes possible (McIntyre & Wolff, 1998).

There is evidence that the active engagement required by experiential teaching methodologies enhances knowledge retention (Mierson and Freiert; 2004). There is also evidence that learning is much higher in a motivated state (one of the potential benefits of experiential teaching methodologies is that students may be motivated by the experience) (Brehm & Self, 1989; Holzinger & Maurer, 1999; Holzinger et al., 2001). Students are allowed to move away from memorizing content (Kebritchi & Hirumi, 2008) and towards practicing theoretical applications and skills in a real-world context (Boyce et al., 2001; Kreber, 2001;

Maltby, 2001; Rudman & Terblanche, 2011). This aids them in developing a frame of reference in which future theoretical knowledge becomes understandable and visualisable (Siegel et al., 1997; Ballantine & Larres, 2004; Steenkamp & Rudman, 2007; Rudman &Terblanche, 2011), thereby effectively establishing a 'bridge' between the classroom and real world" (Weil et al., 2001).

This "bridge" is another reported benefit of experiential teaching methodologies. Students have the opportunity to gain a more realistic perception of the skills and abilities needed to achieve success in their chosen profession (Drake, 2011; Butler & Von Wielligh, 2012). Students develop an understanding of the real world and the skills necessary to deal with its ambiguity (Libby, 1991; Maltby, 2001). These skills, such as problem solving and judgment skills also serve as a bridge between degree study and professional life (Milne & McConnell, 2001). An added benefit is that all of the above happens in a 'risk-free' environment where real life consequences have not yet come into play therefore allowing greater exploration and learning than would be possible in the real workplace (Malik & Howard, 1996; Silva et al., 2011).

Research supports that experiential teaching methodologies increases students' motivation to learn (Milne & McConnell, 2001) and increase students' desire to engage in critical thinking (Haywood, 2004). Routine and boring subjects may be turned into enjoyable activities which engages students and generates positive attitudes among them (Betz, 1995; Malik & Howard, 1996; Prensky, 2001). When students receive immediate feedback on their actions and decisions, this invites exploration and experimentation (Kirriemuir, 2002) and students' attitude towards the accounting profession may be improved or their certainty regarding their choice of career may be confirmed (Butler & Von Wielligh, 2012). It helps to motivate students because of interest in and comprehension of materials (Libby, 1991) relative to the 'monotony' of some other coursework (Waddell &McChlery, 2009). Interactive material may well address the lack of excitement in accounting (Fouché, 2006). As an added incentive a prize can be given to increase motivation (Stainbank, 2003). The result of all of the above may well be that students become intrinsically motivated (Hmelo-Silver, 2004). In addition, active learning methods could also increase students' motivation to study in advance and prepare for class (Cook & Hazelwood, 2002).

An important potential benefit of experiential learning methodologies is that, while they address key competencies, skill deficiencies and facilitate students getting to grips with the workplace and its environment, they may also serve to improve students' academic performance. Marriott (2004) also indicates that including simulations in the learning process may increase students' academic performance, while Hines (2005) adds that performance in tests can also improve. This is because, and various educational psychologists agree on this, experience enhances learning (Marriott, 2004). Work experience affords students the opportunity to develop insight into the concept at hand as well as overall thinking skills such as the ability to think critically and logically (Rudman &Terblanche, 2011). When information technology is used effectively in conjunction with experiential teaching, the lecturers workload may also be decreased (McEacharn, 2005) as all functions and feedback is computerized and pre-programmed.

From the above literature review it is evident that the possible benefits of experiential teaching methodologies may be divided for purposes of summary into the following themes:

TABLE 2
Possible benefits of experiential teaching methodology

Possible benefits	Literature references
Aids in skill development	(Libby, 1991 Libby, 1991; Bhattacharjee& Shaw, 2001; Stainbank, 2003; Haywood, 2004; Hmelo-Silver, 2004; Mierson&Freiert, 2004; Hansen, 2006; Rudman &Terblanche, 2011)
Provides an opportunity to practice the application of theory and skills	(Swink, 1993; Howard, 1996; McIntyre & Wolff, 1998; Malik &; Silva et al., 2011)
Moves students away from rote learning and towards deep learning and lifelong learning	(Hmelo-Silver, 2004; Hansen, 2006; Kebritchi&Hirumi, 2008; Rudman &Terblanche, 2011, Butler & Von Wielligh, 2012)
Introduces students to the real world of work	(Libby, 1991; Kreber, 2001; Williams, Kelly, & Yee, 2001; Maltby, 2001; PwC, 2003; Rudman &Terblanche, 2011)
Student perceptions of the subject is changed favourably	(Betz, 1995; Malik & Howard, 1996; Prensky, 2001; Waddell &McChlery, 2009; Butler & Von Wielligh, 2012)
Students become motivated	(Brehm & Self, 1989; Holzinger& Maurer, 1999; Holzinger, Pichler, Almer, & Maurer, 2001; Milne & McConnell, 2001; Cook & Hazelwood, 2002; Haywood, 2004 Hmelo-Silver, 2004)
The teachers workload is decreased	(McEacharn, 2005)
Academic performance of students are improved	(Marriott, 2004; Mierson and Freiert; 2004; Hines, 2005)
Acts as a bridge between the classroom and the real world	(Milne & McConnell, 2001, Weil et al., 2001 Drake, 2011; Butler & Von Wielligh, 2012)
Student's understanding of the theoretical concepts may increase when the have a framework of practical or simulated practical experience	(Siegel et al., 1997; Ballantine &Larres, 2004; Steenkamp & Rudman, 2007; Rudman &Terblanche, 2011)

How the possible benefits of experiential learning may address the challenges facing accounting education

The table below draws from the literature review above and addresses one of the research objectives of this study, namely "Analyse the literature above in order to construct a table of cause and effect relationships which indicate clearly which benefits of experiential teaching may address which challenges facing accounting education".

TABLE 3

Possible benefits of experiential learning vs. challenges facing accounting education

Challenge facing accounting education	Benefit of experiential learning theory which may address this challenge
There is a growing gap between what happens in practice and what is taught in the classroom.	• Acts as a bridge between the classroom and the real world
Students lack an understanding of what it means to be a member of the profession	• Introduces students to the real world of work
Entry-level accountants lack the skills necessary to apply theoretical knowledge and to address the challenges of the workplace	• Aids in skill development • Provides an opportunity to practice the application of theory and skills
Teaching methodologies and assessment methods in accounting education are content focused resulting in the only learning occurring being a transfer of a body of knowledge	• Student's understanding of the theoretical concepts may increase when the have a framework of practical or simulated practical experience
The educational process lacks the opportunity for students to learn from practical experience	• Provides an opportunity to practice the application of theory and skills
The curriculum is overloaded in both the amount and complexity of technical knowledge that needs to be gained by students during the educational process	• Academic performance of students are improved
Students tend to have negative stereotypical perceptions of accounting as a subject	• Student perceptions of the subject is changed favourably
Student backgrounds includes an overexposure to technology and are not easily motivated	• Students become motivated
Students tend to favour surface learning to deep learning and therefore does not progress towards lifelong learning	• Moves students away from rote learning and towards deep learning and lifelong learning

Conclusion

From the above it is clear that modern-day accounting education is faced by various challenges resulting from the economic climate as well as business environment changes which has lead to the progression in information technology developments and integration into everyday life, as well as a new generation of students who act, think and learn differently from the students a few decades ago. Various shortcomings and criticisms of accounting educations has also been exposed and it is clear that both researchers, academics and professional practice demands of accounting educators to step up to deliver the new generation of entry-level accountants who have the necessary skills and knowledge to face modern-day business challenges, who are able to work and communicate effectively in teams and solve difficult ambiguous problems in the best way possible. It is also clear that traditional accounting education methodologies have failed to do this and keep failing (Mashayekhi & Mohammadi, 2014) even though a vast amount of research reports that the academia is aware of the problems and researchers has suggested new and innovative approaches to address these challenges through improved teaching methodologies (one of these being experiential learning theory, as discussed in this paper). The reported potential benefits of effectively implemented experiential methodologies are many and as shown by this study, correspond in many ways directly in counteracting the problems and challenges of modern-day accounting education. In conclusion therefore, experiential teaching methodologies has the power to address the challenges facing modern day accounting education as reported in research, but the onus is on accounting educators to effectively and practically implement these methods in their classrooms and courses in order to reap the benefits and combat the challenges facing accounting education.

Recommendations

It is recommended that accounting educators take it on themselves to find new and innovative ways of harvesting the vast amount of research done on the subject of experiential teaching methodologies in accounting education by practically implementing these methods in their classrooms and courses and in doing so, shift the focus from transferring bodies of knowledge to students to complementing the transferal of knowledge with the transference of skills and tools for application. In this way, students should be encouraged to move away from rote learning of theory towards understanding and being able to apply the theory to address ambiguous real world situations. Accounting educators should focus on producing entry-level accountants which are ready to face the real world and satisfy the many demands of the professional world. If this does not happen, and the calls for change are continued to be ignored the statement of Albrecht and Sack (2000) that accounting education may not survive the future becomes more and more true. A lack of public trust (Raghavan and Thomas, 2014, failure to deliver competent entry-level accountants to the professional practice and the decline in new entrants into the accounting education sector in South Africa, may well lead to the accounting profession losing ground to other qualifications.

Possible areas of future research include identifying a set of best practice criteria which should be kept in mind when accounting educators decide to practically implement an experiential teaching methodology. Future research could also include reports on practical limitations and challenges that accounting educators came across when implementing the experiential teaching methodologies as well as their results, measured in the different areas of expected potential benefits. A longitudinal study may also be performed in order to track whether students who took part in the experiential teaching methodologies do perform better in various areas in public practice at entry level because of taking part in the experiential teaching methodology.

References

Accounting Education Change Commission.(1990). *Position and issues statements of the accounting education change commission*. From http://aaahq.org/AECC/pdf/position/pos1.pdf (Retreived 8 February, 2015)

AACSB 2013, "The Promise of Business Doctoral Education–Setting the Pace for Innovation, Sustainability, Relevance, and Quality", .

Albrecht, W. & Sack, R. 2000, "Accounting Education", *Charting the Course Through a Perilous Future, Sarasota, Florida: American Accounting Association,* .

Apostolou, B., Dominey, J.W., Hassell, J.M.,. & Watson, S.F. 2013, "Accounting education literature review (2010–2012)", *Journal of Accounting Education,* vol. 31, no. 2, pp. 107-161.

Arens, A.A., May, R.G. &Dominiak, G. 1970, "A simulated case for audit education", *The Accounting Review,* vol. 45, no. 3, pp. 573-578.

Ballantine*, J.A. &Larres, P.M. 2004, "A critical analysis of students' perceptions of the usefulness of the case study method in an advanced management accounting module: the impact of relevant work experience", *Accounting Education,* vol. 13, no. 2, pp. 171-189.

Barac, K. 2009, "South African training officers' perceptions of the knowledge and skills requirements of entry-level trainee accountants", *Meditari Accountancy Research,* vol. 17, no. 2, pp. 19-46.

Bell, T. B., Knechel, W. R., & Payne, J. L. 2011, "Audit risk attributes in computerized environments", *Review of Business Information Systems (RBIS),*vol. 3, no. 2, pp. 27-40.

Belfo, F., & Trigo, A. 2013, "Accounting Information Systems: tradition and future directions", *Procedia Technology*, vol. 9, pp. 536-546.

Betz, J.A. 1995, "Computer games: Increase learning in an interactive multidisciplinary environment", *Journal of Educational Technology Systems,* vol. 24, no. 2, pp. 195-205.

Bhattacharjee, S. & Shaw, L. 2001, "Evidence that independent research projects improve accounting students' technology-related perceptions and skills", *Accounting Education,* vol. 10, no. 1, pp. 83-103.

Blayney, P., Kalyuga, S. &Sweller, J. 2010, "Interactions between the Isolated-Interactive Elements Effect and Levels of Learner Expertise: Experimental Evidence from an Accountancy Class", *Instructional Science: An International Journal of the Learning Sciences,* vol. 38, no. 3, pp. 277-287.

Botha, N. 2014, *Measuring student perceptions about the use of a computer programme as a teaching aid in Auditing,* .

Botha, W.J.J. 2001, "Pre-qualification education of registered accountants and auditors in South Africa: Perspectives on whether the education process is normatively justifiable", *Meditari Accountancy Research,* vol. 9, no. 1, pp. 33-59.

Boyce, G., Williams, S., Kelly, A. & Yee, H. 2001, "Fostering deep and elaborative learning and generic (soft) skill development: the strategic use of case studies in accounting education", *Accounting education,* vol. 10, no. 1, pp. 37-60.

Brehm, J.W. & Self, E.A. 1989, "The intensity of motivation", *Annual Review of Psychology,* vol. 40, pp. 109-131.

Buckhaults, J. & Fisher, D. 2011, "Trends in accounting education: decreasing accounting anxiety and promoting new methods", *Journal of Education for Business,* vol. 86, no. 1, pp. 31-35.

Burch, G.F., Heller, N.A. & Freed, R. 2014, "Back to the basics: Developing a student engagement survey to evaluate the role of experiential learning on student engagement", *Developments in Business Simulation and Experiential Learning,* vol. 41.

Butler, R. & Von Wielligh, S. 2012, "Using guest lecturers to address the gap between theory and practice in auditing studies at a South African university-a case study", .

Carnegie, G.D. & Napier, C.J. 2010, "Traditional accountants and business professionals: Portraying the accounting profession after Enron", *Accounting, Organizations and Society,* vol. 35, no. 3, pp. 360-376.

Cheng, K. 2007, "The Curriculum Design in Universities from the Perspective of Providers in Accounting Education.",*Education,* vol. 127, no. 4, pp. 581-590.

Clikeman, P.M. 2012, "J&K Fitness Supply Company: Auditing Inventory", *Accounting Education,* vol. 21, no. 2, pp. 161-170.

Coetzee, S., &Oberholzer, R. 2009,“The tax knowledge of South African trainee accountants: A survey of the perceptions of training officers in public practice” ,*Accounting Education: An International Journal*, vol. 18 no 4/5, pp. 421–441.

Collett, N.J. 2000, "Innovation or renovation: effective project design for accounting and MBA students", *Accounting Education*, vol. 9, no. 1, pp. 67-92.

Cook, E.D. & Hazelwood, A.C. 2002, "An active learning strategy for the classroom—“who wants to win… some mini chips ahoy?”", *Journal of Accounting Education*, vol. 20, no. 4, pp. 297-306.

Davidson, R.A., Slotnick, S.A. & Waldman, D.A. 2000, "Using linguistic performance to measure problem-solving", *Accounting education*, vol. 9, no. 1, pp. 53-66.

Dempsey, A. & Stegmann, N. 2001, "Accounting I: Attracting and retaining learners", *a Conference of the South African Institute of Chartered Accountants on*.

Diller-Haas, A. 2004, "Time to change introductory accounting", *The CPA Journal*, vol. 74, no. 4, pp. 60-62.

Drake, J. 2011, "Adding Value to Audit Education through ‘Living’Cases", *Accounting Education: an international journal*, vol. 20, no. 2, pp. 203-222.

Ebner, M. &Holzinger, A. 2002, "E-Learning in Civil Engineering: The experience applied to a lecture course in Structural Concrete", *Scientific Journal of Applied Information Technology (JAPIT)*, vol. 1, no. 1, pp. 1-9.

Ferguson, C.B., Richardson, G.D. & Wines, G. 2000, "Audit education and training: the effect of formal studies and work experience", *Accounting Horizons*, vol. 14, no. 2, pp. 137-167.

Fouché, J. P. 2006,“*Programme development for first year accounting in South African higher education”*,(Unpublished PhD thesis).North-West University, Potchefstroom.

Fouché, J. 2013, "A Renewed Call for Change in Accounting Education Practices", .

Fowler, L. 2006, "Active learning: an empirical study of the use of simulation games in the introductory financial accounting class", *Academy of Educational Leadership Journal*, vol. 10, no. 3, pp. 93-103.

Gabbin, A.L. 2002, "The Crisis in Accounting Education; the CPA's Role in Attracting the Best and the Brightest to the Profession", *Journal of Accountancy*, vol. 193, no. 4, pp. 81.

Gaskin, J. &Berente, N. 2011, "Video game design in the MBA Curriculum: An experiential learning approach for teaching design thinking", *Communications of the Association for Information Systems,* vol. 29, no. 1, pp. 103-122.

Grisoni, L. 2002, "Theory and practice in experiental learning in higher education", *The International Journal of Management Education,* vol. 2, no. 2, pp. 40-52.

Hansen, J.D. 2006, "Using problem-based learning in accounting", *The Journal of Education for Business,* vol. 81, no. 4, pp. 221-224.

Haywood*, H.C. 2004, "Thinking in, around, and about the curriculum: The role of cognitive education", *International Journal of Disability, Development and Education,* vol. 51, no. 3, pp. 231-252.

Helliar, C. V., Monk, E. A., & Stevenson, L. A. 2009,. “The development of trainee auditors’ skills in tertiary education”, *International Journal of Auditing*, vol13, no. 3, pp. 185–202.

Hines, L. 2005, "Interactive learning environment keeps Modesto students engaged: The classroom performance system provides four district junior high math and science classes with a wireless, collaborative, instant-response learning solution", *THE Journal (Technological Horizons in Education),* vol. 33, no. 2, pp. 40.

Hmelo-Silver, C.E. 2004, "Problem-based learning: What and how do students learn?",*Educational psychology review,* vol. 16, no. 3, pp. 235-266.

Holzinger, A. & Maurer, H. 1999, "Incidental learning, motivation and the Tamagotchi Effect: VR-Friends, chances for new ways of learning with computers", *Computer Assisted Learning (CAL),* vol. 99.

Holzinger, A., Pichler, A., Almer, W. & Maurer, H. 2001, "TRIANGLE: A Multi-Media test-bed for examining incidental learning, motivation and the Tamagotchi-Effect within a Game-Show like Computer Based Learning Module", *World Conference on Educational Multimedia, Hypermedia and Telecommunications*, pp. 766.

Howieson, B. 2003, "Accounting practice in the new millennium: is accounting education ready to meet the challenge?",*The British Accounting Review,* vol. 35, no. 2, pp. 69-103.

Howieson, B., Hancock, P., Segal, N., Kavanagh, M., Tempone, I., Kent, J., 2014, "Who should teach what? Australian perceptions of the roles of universities and practice in the education of professional accountants",*Journal of Accounting Education,* vol. 32, pp. 259-275.

Johnston, R.P. 2005, "A Tour of Tomorrow's Technology: Don't Let the Future Sneak Up on You", *Journal of Accountancy,* vol. 200, no. 4, pp. 95.

Kassim, C.K. 2014, "Accounting Education Change: Improving the Quality of Accounting Graduates", *J. Appl. Environ. Biol. Sci.*, vol. 4, no. 6S, pp. 1-7.

Kebritchi, M. &Hirumi, A. 2008, "Examining the pedagogical foundations of modern educational computer games", *Computers & Education*, vol. 51, no. 4, pp. 1729-1743.

Keys, B. & Wolfe, J. 1990, "The role of management games and simulations in education and research", *Journal of management*, vol. 16, no. 2, pp. 307-336.

Kirriemuir, J. 2002, "The relevance of video games and gaming consoles to the higher and further education learning experience", *Techwatch report TSW*, vol. 2.

Kreber, C. 2001, "Learning experientially through case studies? A conceptual analysis", *Teaching in higher education*, vol. 6, no. 2, pp. 217-228.

Libby, P.A. 1991, "Barriers to using cases in accounting education", *Issues in Accounting Education*, vol. 6, no. 2, pp. 193-213.

Lippert, A., Dieckmann, P. &Oestergaard, D. 2009, "Simulation in medicine", *NotfallRettungsmedizin*, vol. 12, no. 2, pp. 49-52.

Malik, S.D. & Howard, B.J. 1996, "How Do We Know Where we’ re going if we don’ t Know Where We Have Been: A Review of Business Simulation Research", *Developments in Business Simulation and Experiential Learning*, vol. 23.

Malone, T.W. 1980, "What makes things fun to learn? Heuristics for designing instructional computer games", *Proceedings of the 3rd ACM SIGSMALL symposium and the first SIGPC symposium on Small systems*ACM, , pp. 162.

Maltby, J. 2001, "Second thoughts about'Cases in Auditing'", *Accounting Education*, vol. 10, no. 4, pp. 421-428.

Marriott, N. 2004, "Using computerized business simulations and spreadsheet models in accounting education: a case study", *Accounting Education*, vol. 13, no. sup1, pp. 55-70.

Mashayeki, B. & Mohammadi, R. 2014, "The perceived gap between academics and professionals about accounting education system in Iran ", *Science Journal of Education*, vol. 2, no. 1, pp. 12-21.

McDuffie, R.S. & Smith, L.M. 2006, "Impact of an audit reporting expert system on learning performance: a teaching note", *Accounting Education: an international journal*, vol. 15, no. 01, pp. 89-102.

McEacharn, D.M. 2005, "Game play in the learning environment: who wants to be an accountant? lawyer? economist?", *Accounting Education*, vol. 14, no. 1, pp. 95-101.

McIntyre, D.R. & Wolff, F.G. 1998, "An experiment with WWW interactive learning in university education", *Computers & Education,* vol. 31, no. 3, pp. 255-264.

Merchant, Z., Goetz, E. T., Cifuentes, L., Keeney-Kennicutt, W., & Davis, T. J. 2014, “Effectiveness of virtual reality-based instruction on students' learning outcomes in K-12 and higher education: A meta-analysis”, *Computers & Education*, vol. 70, pp. 29-40.

Merino, B.D. 2006, "Financial scandals: Another clarion call for educational reform-A historical perspective", *Issues in Accounting Education,* vol. 21, no. 4, pp. 363-381.

Mierson, S. &Freiert, K. 2004, "Problem-based learning", *Training and Development,* vol. 58, no. 10, pp. 15-17.

Mladenovic, R. 2000, "An investigation into ways of challenging introductory accounting students' negative perceptions of accounting", *Accounting Education,* vol. 9, no. 2, pp. 135-155.

Mohapatra, P. S., Popova, V., &Xu, L. 2013, “Training auditors in strategic systems auditing using online computerised systems: can prior schema affect auditors’ knowledge acquisition?”, International Journal of Critical Accounting, vol. 5, no. 5, pp. 453-468.

Moore, D.T. 2010, "Forms and issues in experiential learning", *New Directions for Teaching and Learning,* vol. 2010, no. 124, pp. 3-13.

Passarelli, A.M. & Kolb, D.A. 2011, "6 The Learning Way: Learning from Experience as the Path to Lifelong", *The Oxford Handbook of Lifelong Learning,* , pp. 70.

Papageorgiou, E. 2014, “The integration of computerised accounting in the accounting curriculum as an educational learning curve for students entering the business world” South African Computer Journal, vol 52, pp. 71-81.

Penny, K., Frankel, E. &Mothersill, G. 2012, "Curriculum, Climate and Community: A Model for Experiential Learning in Higher Education", *Valencia: INTED2012 Proceedings,* .

Prensky, M. 2001, "Digital natives, digital immigrants part 1", *On the horizon,* vol. 9, no. 5, pp. 1-6.

Pretorius, J. 2001, "The higher education business-can it cope with international challenges?", *South African Journal of Higher Education*, vol. 15, no. 2, pp. p. 74-79.

PricewaterhouseCoopers, L. 2003, *Educating for the public trust: The PricewaterhouseCoopers position on accounting education,* PricewaterhouseCoopers.

Public Accountants and Auditors Board (PAAB), 1994,*Report on the Future of Accounting Education in South Africa*. Johannesburg: PAAB.

Raghavan, K. & Thomas, E.R. 2014, "Instability, Innovation and Accounting Education", Journal of Accounting and Finance, vol. 14, no. 2, pp. 76-83.

Ravenscroft*, S. & Williams, P.F. 2004, "Considering accounting education in the USA post-Enron", *Accounting Education,* vol. 13, no. sup1, pp. 7-23.

Rhodes, R. 2013, “Lecturers changing andragogy during implementation of integrated information and communication technology (IICT) in accounting education”. *International Conference: The Future of Education.*

Rowlands, J., Prinsloo, K. & Van Vuuren, L. 1998, "The new structure of the accounting profession in South Africa: some implications for accounting education", *South African Journal of Higher Education,* vol. 12, no. 2, pp. 1998.

Rudman, R.J.T.,J. 2011, "Practical role-play as an extension to theoretical audit education : a conceptualising aid", *Southern African Journal of Accountability and Auditing Research,* vol. 11, pp. 63-74.

Sadler, E. & Erasmus, B. 2005, "The academic success and failure of black chartered accounting graduates in South Africa: A distance education perspective", *Meditari Accountancy Research,* vol. 13, no. 1, pp. 29-50.

Scalese, R.J., Obeso, V.T. &Issenberg, S.B. 2008, "Simulation technology for skills training and competency assessment in medical education", *Journal of general internal medicine,* vol. 23, no. 1, pp. 46-49.

Siegel, P.H., Omer, K. & Agrawal, S.P. 1997, "Video simulation of an audit: an experiment in experiential learning theory", *Accounting Education,* vol. 6, no. 3, pp. 217-230.

Silva, P.S., Trigo, A. &Varajao, J. 2011, "Simulation technology for enhanced learning: VAT simulator for Portuguese accounting students", *Computer Modelling and Simulation (UKSim), 2011 UkSim 13th International Conference on*IEEE, , pp. 355.

South Africa, 2008, Companies Act 61 of 2008. Pretoria: Government Printer.

South African Institute of Chartered Accountants, 2000,*Education requirements for Part I and Part II of the qualifying examination and the public practice examination of the Public Accountants' and Auditors' Board*. Johannesburg: Author.

South African Institute of Chartered Accountants, SAICA, 2008, *Report on the Financial Management, Accounting and Auditing Skills Shortages in South Africa*. From (Retrieved February 2, 2015).

South African Institute of Chartered Accountants, 2012, CA(SA) Training programme – Prescribed competencies. From https://www.saica.co.za/Portals/0/Trainees/documents/CA%20SA%20Training%20Programme%20Competencies%20August%202012.pdf (Retrieved 5 February, 2015)

Stainbank, L. 2003, "Using an annual report as a group project in accounting education", *Meditari Accountancy Research*, vol. 11, no. 1, pp. 151-166.

Steenkamp, L.P.V.W.,S.P.J. 2011, "The perceptions of trainee accountants of the usefulness of an audit simulation at university level", *Southern African Journal of Accountability and Auditing Research*, vol. 11, pp. 9-21.

Steenkamp, L. & Rudman, R. 2007, "South African students' perceptions of the usefulness of an audit simulation", *Meditari Accountancy Research*, vol. 15, no. 2, pp. 23-41.

Stewart, J.P. & Dougherty, T.W. 1993, "Using case studies in teaching accounting: A quasi-experimental study", *Accounting Education*, vol. 2, no. 1, pp. 1-10.

Sudhir, K., & Talukdar, D. 2015, "Productivity Versus Transparency: Information Technology Adoption in Emerging Markets" From http://cowles.econ.yale.edu/P/cd/d19b/d1980.pdf

Swink, D. F. 1993, "Role-play your way to learning" *Trading and Development*, vol. 47, no. 5, pp. 91–97.

Van Peursem, K. A., Monk, E. A., Wilson, R. M., & Adler, R. W. (Eds.). 2013, "Audit Education". *Routledge.*

Vasarhelyi, M.A., Teeter, R.A. &Krahel, J. 2010, "Audit education and the real-time economy", *Issues in Accounting Education*, vol. 25, no. 3, pp. 405-423.

Waddell, K. &McChlery, S. 2009, "Beyond Enron: Introducing the risks of financial mismanagement to business and management students-a case study approach", *The international journal of management education*, vol. 8, no. 1, pp. 11-22.

Weil, S., Oyelere, P., Yeoh, J. & Firer, C. 2001, "A study of students' perceptions of the usefulness of case studies for the development of finance and accounting-related skills and knowledge", *Accounting Education*, vol. 10, no. 2, pp. 123-146.

Wessels, P. 2004, "Information technology and the education of professional accountants", *Meditari Accountancy Research*, vol. 12, no. 1, pp. 219-234.

Woronoff, M. 2009, "What law schools should teach future transactional lawyers: Perspectives from practice", *UCLA School of Law, Law-Econ Research Paper*, , no. 09-17.

Yang, M. H., & Koo, T. L. 2014,“The impact of information technology adoption on internal controls adaptation”, *International Journal of Business and Systems Research*, vol. 8, no. 1, pp. 14-33.

EDU014 Achievement of institutional success rate targets: the Diploma in Accountancy learning programme at the Nelson Mandela Metropolitan University

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Abstract
Transformation in the Republic of South Africa (RSA) as well as the low success rates in academic learning programmes remain unsolved matters of concern for the RSA Government and thus University Management. As part of a larger research project, this paper aims to conceptualise different teaching approaches; describes the current teaching practice model at the Nelson Mandela Metropolitan University's Diploma in Accountancy learning programme; and gauges the success rates achieved with this current teaching practice model with the NMMU's constitutional target success rate.

In order to achieve these objectives a comprehensive literature review was performed, primary data on the current teaching practice model was collected by means of research instruments and an analysis of the NMMU's success rates for the Diploma in Accountancy accounting modules was performed. The results of the paper reveal that a *teacher-centred* teaching approach is largely followed and that the institutional success rate of 75% is not achieved through the use of the current teaching practice model.

Key words: Blended learning, success rates, students-centered approach, teacher-centered approach, teaching approach.

1 BACKGROUND

A key strategic objective for the transformation of higher education in South Africa that remains unfulfilled, is to enable academic success for more graduates with the skills and competencies that meet the needs of the country (CHE 2013a:27; CHE 2013b:4). The lack of academic transformation could be attributed to the under-preparedness of school-leavers (articulation gap) to fulfil in the academic demands of higher education (CHE 2013a:28; Ogude, Kilfoil & Du Plessis 2012:22). In addition, a study by Scott, Yeld and Hendry (2007:2) referred to the under-preparedness of staff at higher education institutions as a potential reason for the dearth in competent graduates.

A number of exogenous and endogenous factors, for example language, status of residential area and access to technology, are identified in published literature as possible reasons for the national problem stated above (Du Plessis, Müller & Prinsloo 2005; Müller, Pretorius, Prinsloo & Uys 2007; Roos 2009; Strydom, Basson & Mentz, 2012). The challenge of poor student success is complex and multi-layered (Scott *et al.* 2007). In South African higher education institutions student success rates are regarded as an area of concern that should be addressed, amongst others, through innovative teaching methods (Steenkamp, Baard & Frick 2009). The Council of Higher Education (CHE) believes that the key to a higher success rate in higher education, and thus in improving throughput rates, lies in strengthening teaching and learning – placing a burden on the providers of higher education in South Africa (Strydom, Basson & Mentz, 2012:i).

According to Strydom *et al*. (2012:i) headcount enrolments at South African higher education institutions during the 2005-2009 academic years increased by 14%, while student success rates only increased by 2%. Furthermore, Letseka and Maile (2008:1) stated that in 2001 the Republic of South Africa (RSA) had a graduation rate of 15% – one of the lowest in the world. The South African Department of Higher Education and Training's 2013 annual statistical report on 2011 data, confirmed the graduation rate of 15%, even though the University of Cape Town warns of a lack of understanding of how this rate is being calculated (Mtshali, 2013). This paper uses the term *success rate*, which is defined as the percentage of passed credits divided by enrolled credits. The question that remains unanswered is: how do we change our structures, cultures and practices to ensure improved success rates?

A requirement of the Higher Education Qualifications Sub-Framework (HEQSF) (RSA 2013:43) is that all tertiary programmes need to conform to the requirements of the HEQSF. The HEQSF requires redesigning of some academic programmes. This provides tertiary institutions with an opportunity to reassess their current teaching approaches and explore relevant and innovate teaching methods through which learning can be enhanced to negate poor student success. In its quest to enhance the quality of higher education, the Government has identified "teaching and learning" as the core function of higher education that is in great need of immediate attention and improvement (CHE 2013b:4).

This paper forms part of a research project initiated to address the possible shortcomings of current teaching approaches in the Diploma in Accountancy learning programme at the Nelson Mandela Metropolitan University (NMMU).University of Technology (TUT

The NMMU's accounting diploma learning programmes are all located at its Port Elizabeth Second Avenue Campus. The majority of the students enrolled in these learning programmes offered are from previously disadvantaged communities or can be classified as first-generation students. The improvement of success rates is especially important in the context of the NMMU's *Vision 2020* (NMMU 2015b). One of the strategic objectives of the NMMU, based on *Vision 2020, is to* (NMMU 2015b) "… create and sustain a responsive learning environment conducive to excellence in teaching and learning and fostering holistic student success."

In the context of the background provided above, the objectives of this paper are to, conceptualise different teaching approaches; describe the current teaching practice model applied at the NMMU Second Avenue Campus; and discuss the success rates obtained through the current teaching practice model for the financial accounting modules at the Second Avenue Campus of the NMMU.

2 LIMITATIONS AND RESEARCH METHODOLOGY

The research of this paper is limited to students who are registered for the accounting modules on the Second Avenue Campus of the NMMU; the workload level and success rates of the accounting modules are not compared to the workload level and success rates of other modules in the Diploma in Accountancy learning programme; and the reasons why lower than expected success rates are currently achieved are not investigated.

The objectives of this paper were effected by using various research methods such as literature review and data analysis. In order to gather primary data, research instruments such as an information sheet and e-survey questionnaire (available on request). The research methodology of the paper will be described in the sections that follow.

Literature review

A comprehensive review of published literature on teaching methods relevant to accounting programmes was performed. The literature reviewed informed the design and development of the research instruments used for collecting the primary data.

Analysis of success rates

Secondary data on the pass rates of accounting modules for four academic years (2011 to 2014) were obtained from the NMMU Management Information Systems Unit. An analysis of these pass rate data is presented in Table 2.

Primary data collection

Primary data were collected by means of information sheets and questionnaires populated by lecturing staff of identified modules. All lecturing staff (13 staff members) provided information in respect of the particular module/s they are involved with. The current teaching approach and lecturer profiles were described based on this data.

3 TEACHING APPROACHES

Several studies that were done world-wide, as well as in South Africa, found that employer expectations with regard to capabilities of university graduates are not met (Griesel & Parker 2009; Kavanagh & Drennan n.d.). A lack of problem solving skills, real life experiences of the business world and basic accounting skills are capabilities that university graduates lack when entering the workplace (Polyacskó 2009).

Laurillard (2012) and Nordin, Embi and Yunus (2010:131-132) states that the effectiveness of learning is achieved through a combination of the following components: *student-centred*, *knowledge-centred*, *assessment-centred* and *community-centred*. Finding alternative teaching approaches [blended learning] are recognised as important as a result of technology changes and modernisation of the educational science (Brown, Collins, & Duguid 1989; Collins 1990; Brown, Ash, Rutherford, Nakagawa, Gordon & Campione 1993; Cobb 1994; Duffy &

Cunningham 1996). These are inculcated into the different teaching approaches addressed in the discussions below.

A modern teaching approach which is “meaningful and purposeful” should consist of learning theory, learning activities, student/lecturer interaction, assessment and student support (Bonk & Cunningham1998). The three teaching approaches that this paper focusses on are *teacher-centred*, *student-centred* and *technology-based* (as a form of blended learning) and are described below.

Teacher-centred teaching approach

The teacher-centred teaching approach is the most commonly used approach for transferring knowledge from teacher to student (Cuban 1983:162; Shaw 2013; Smit, de Brabander & Martens 2013:3). The student has to listen and follow the instructions given by the teacher. This teaching approach has proven to have a negative learning outcome that leads to low success rates (Slabbert, De Kock & Hattingh 2011). Student involvement is non-existent, potentially resulting in the student losing interest. The teacher-centred approach stresses that the teacher mainly conveys the knowledge or expertise (“talk and ask questions”) to the group of students and there is little interaction (“talk or questions being asked”) coming from the student (Scuh 2004:835).

Advantages of the teacher-centred approach includes lecturers providing unpublished or not readily available material available; and determines the aims, content, organisation, pace and direction of the teaching. In addition, the teacher clarifies [explains] the material, complements and highlights learning preferences, arouses interest in a subject and facilitates large-class communication (Ylänne, Trigwell, Nevgi & Ashwin 2006:294).

Disadvantages of this approach are that students are placed in a passive rather than an active role (Cuban 1983:162; Smit, *et al.* 2013:3); encourages one-way communication and requires a considerable amount of unguided student study time outside of the classroom to enable understanding and long-term retention of content (Slabbert, *et al.* 2011) and; the teacher has to master effective communication skills.

Differing substantially form the teacher-centred approach is the student-centred approach through which student engagement [participation] is encouraged as an important component. The student-centred teaching approach is discussed in the following section.

Student-centred teaching approach

Several authors (Harden and Crosby 2000:335; Kember 1997; Lea, Stephenson & Troy 2003; Rogers & Allender 1983:188) define the student-centred approach as placing emphasis on student engagement [participation] in the teaching process. The main focus of this approach is on the needs, skills and interest of the student (McCombs & Whisler 1997). Therefore, the learning process scale places more responsibility on the student than on the teacher. O’Neil & Mc Mahon (2005:31) highlights that the student is allowed to learn by practicing, making them more aware of what they are busy with and the motivation behind it. Students feel comfortable to communicate with the teacher, which helps with the transferring and retention of knowledge and skills.

The advantages associated with this approach is that students gain academic knowledge and skills; grow emotionally and spiritually (Quinlan 2014:33); develop experimental learning and problem-solving skills (Ormrod 1999:412); learn how to engage with and co-construct knowledge (Schweisfurth 2001:425); and students feel respectful, excited and interested in the learning process (Lea *et al*. 2003).

Disadvantages include inadequately prepared teachers that are theory-orientated (Westbrook, Shah, Durrani, Tikly, Khan & Dunne 2009; Altinyelken 2010); inadequate availability of content and time (Tatto 1991; Vavrus 2009); and new teachers do not have a model to base their practice on (Haser & Star 2009).

Other factors that affect the implementation of this approach are the high student-teacher ratios and availability of resources and infrastructure. O'Neill, Moore and McMullin (2005:33) found that the belief systems of staff and students and the fear that independent learning may take away the social aspect of the learning process are further critiques of the approach.

The more modern and technology based approach is referred to as blended learning – blending traditional teaching approaches such as the teacher-centred and student-centred approaches with the use of technology. The following section discusses the technology based teaching approach as an alternative.

Technology based teaching approach

Technology and the use thereof in education is becoming increasingly important globally. Students are familiar with the use of Information Communication Technology (ICT), such as cellular telephones (cell phones), tablets and laptop computers, which creates the possibility that e-learning could replace the traditional teaching approach (Attewell 2005:7; Favell 2014). Cell phones, in particular, are owned by 96% of the world population (International Telecommunications Union (ITU) 2013). According to Statistics South Africa (2012: 65), 89% of the South African population have access to cell-phones [technology].

Several authors (Berkowitz, Kung & Eisenberg 2013:1; El-Mowafy, Kuhn & Snow 2013:1; Herrington, Schrape & Singh 2012: iii; Smirnova 2008; Traxler 2010) emphasise the importance of incorporating technology in teaching approaches. Technology provides additional support to the teaching environment for both teachers and students. The students' technical skills, productivity and success rates could increase as access to technology is available on a 24/7 (24 hours per day, seven days per week) basis.

Technology could be incorporated (blended) with the conventional teaching approaches. Successful blended learning technologies such as the Virtual Learning Environment (Andergassen, Behringer, Finlay, Gorra & Moore 2009; Bark & Kush 2009), Web 2

Technologies (Ward, Moule & Lockyer 2009), social media platforms like Twitter ® and Facebook ® (Andrade, Castro & Ferreira 2012; Lam 2012) and the Internet (Hain & Back 2008) are available for use in alternative teaching techniques.

Blended learning have been implemented successfully by several universities, such as Stanford University, University of Tennessee, London Metropolitan University, the Bolton Institute State and public university campuses in the USA (Bowen, Chingos, Lack & Nygren 2012; Boyle, Bradley, Chalk, Jones, & Pickard 2003:176; Singh & Reed 2001).

Advantages of blended learning include knowledge provision; social interaction; and access to self-directed and relevant experiential learning (Dzakiria, Don & Abdul Rahman 2012; Singh & Reed 2001). In addition Dziuban, Hartman and Moskal (2004) assert that blended learning increases students' information literacy, improves student flexibility and learning outcomes. Furthermore students participate actively, increase responsibility, learn more effectively, have easy access to learning material and are in control of their own learning (Gecer & Dag 2012:440-441).

According to Köse (2010:2796) blended learning improves the academic achievements of students. Vincini (2006) and Duncan (2005:78,87) defines clickers as an electronic device that looks similar to a remote control and is often refer to as classroom response systems (CRS). The hand-held device is used by the students to respond on multiple-choice or polling questions in the classroom. The teacher poses a question, where by the students react by choosing an option. All the answers are then tallied by the CRS and the results are projected back. In several studies (Duncan 2005:78, 87; Patterson, Kilpatrick & Woebkenberg 2010; Zhu 2007) the use of clickers have been proven to increase student involvement, participation and class attendance. According to Horn (n.d.) blended learning can increase student control over the time, place, path, and/or pace of learning; increased communication between student and teacher; improved life skills regarding Information Technology; and prepare learners for the work environment and independent learning (self-study and self-revision).

The disadvantages of blended learning include the fact that no access to the internet [connection] results in no access to material (Gecer & Dag 2012:440). Further, as stated by Staker and Horn 2012, online communication is complex and therefore teachers need training to successfully apply it in the teaching process. Finally, Kenney and Newcombe (2011) conclude that lecturers need to re-design modules which is time consuming and that teachers have a lack of motivation and skills to use technology optimally (blended learning) for education purposes.

4 THE ACCOUNTING TEACHING APPROACH APPLIED ON THE DIPLOMA ACCOUNTANCY PROGRAMME AT THE NMMU

The approach followed when teaching accounting to diploma students are outlined based on data information sheets that were completed by the lecturers involved and responsible for the modules. In addition to the module information sheets, official timetables, module outlines and the Faculty of Business and Economic Sciences' Prospectus (NMMU 2015a) were consulted to ensure that accurate and complete information are used to describe the current teaching practice model. The information sheets were distributed to lecturers and coordinators of the specific first, second and third year accountancy modules and each respondent was asked to complete the information sheet according to current teaching practice models.

The information sheet requested the number of students in class; time spent [duration] on instruction (formal classroom lecturing, number of sessions per week, length of time of sessions, tutorial sessions, supplemental instruction and blended learning); formative and summative assessment methods; study and lecturing material; and further teaching activities and/or interventions used.

Formal Instruction

In respect of Financial Accounting I, students receive approximately three hours' formal instruction (two sessions of 80 minutes each and one session of 35 minutes) per week. The students are divided into groups of approximately 60 students. According to Kandya (2013) a maximum number of students that should be in a class is 40 – a student to lecturer ratio of 40:1. As a result and for the purposes of this paper, a class size of more than 50 students is regarded as a *large class*. The first session takes the form of a classroom lecture in which the syllabus content is explained. The lecturer provides class examples and students attempt a few exercises and allocated homework to be discussed during the next session. The additional two sessions are utilised as tutorial sessions where the lecturer assists students with marking of homework assignments, discusses examination techniques and facilitates informal group discussions. Feedback is provided to students after each assessment. A similar teaching approach is followed for the second and third year accounting modules. In these years, formal instruction consists of two contact sessions totalling 2.67 hours (80 minutes per session) per week. Again, the cohort of students is divided into groups not exceeding 60 students.

Lecturer consultation times range between two and three hours per week. First and second year accounting students may also attend supplementary instruction (SI) sessions facilitated by senior students. Attendance of the SI sessions is not compulsory.

Assessment Activities

First year accounting students are not assessed by means of class tests (formative assessment), however, their class attendance and submission of homework assignments contribute towards their admission [to examination] mark. The admission mark forms part of the final mark. First year accounting students are required to complete at least two summative assessments (semester tests) that comprise the largest proportion of their admission mark.

The second and third year groups are provided with two formative assessments (class tests). These assessments are designed to allow the students the opportunity to assess their understanding of the content and does not carry any weighting towards the admission mark.

The students are required to complete at least two summative assessments (semester tests) that comprise the admission mark.

For all three years a three hour examination paper with total marks of 100 is written. The final mark for the module consists of the admission mark (40%) plus the examination mark (60%). Table 1 provides a summary of the combination of assessment marks towards the final mark for the accounting modules of the three academic years.

Table 1: Calculation of admission and final mark

Activity	**Year 1 (%)**	**Year 2 (%)**	**Year 3 (%)**
Homework and Attendance	1.6	0	0
Semester Test 1	19.2	20	20
Semester Test 2	19.2	20	20
Admission Mark	40	40	40
Examination Mark	60	60	60
Final Mark	100	100	100

Textbooks and lecturing material

Students are required to purchase a hard copy textbook which is also available at the library. When asked how often the textbook is used in class, on a Likert-type scale ranging from 1 to 5 (1 = never; 5 = always) the first year lecturers perceived a mean score of 2 while second and third year lecturers reported a mean score of 3. Hard copy lecture notes are given to all the students and the notes are made available electronically via SharePoint (the NMMU's intranet site).

In the context of the objectives of the paper, the following section provides a discussion of the success rates for the accounting modules that form part of the curriculum of the Diploma in Accounting at the NMMU.

The current teaching approach followed by the lecturers encompasses elements of all three approaches in the previous section. Limited use of blended learning takes place through electronic distribution of lecture materials. Students that make use of SI session could experience a student-centred approach as it stimulates student engagement. Due to the large class sizes and relative under-preparedness of students a teacher-centred approach is followed in teaching these groups.

5 PASS RATES

A pass rate (success rate) is defined as the percentage of enrolled students that pass their courses (number of students that pass the course divided by the number of students that enrolled for the course) (Barnard 2015). Table 2 depicts the pass rate averages for the first, second and third year diploma accountancy modules at the NMMU from 2011 to 2014.

Table 2: The Nelson Mandela Metropolitan University's Diploma in Accountancy accounting module success rates: 2011 to 2014

Academic Year	Four year average	2011	2012	2013	2014
1st Year	67.6%	70.0%	66.0%	67.5%	66.9%
2nd Year	58%	50.9%	51.9%	67.7%	63.7%
3rd Year	71.8%	72.5%	76.8%	67.3%	70.7%
Three year average	66.0%	64.5%	64.9%	67.5%	67.1%

The average success rates for the three academic years of study (first, second and third year) range from 64.5% to 67.5% revealing an average of 66.0% for the three years combined. The average pass rate for the second year accounting module is the lowest at 58.6% and the third year success rate is the highest at 71.8%, mainly as a result of a substantial increase in 2012 to an annual success rate of 76.8%. These averages are consistently and substantially lower than the NMMU's (institutional) target success rate of 75% (Minne, 2013).

A number of reasons could exist for variations in the success rates in respect of the annual success rates per module as well as in the different academic years of accounting modules. One possible reason that specifically relates to the Diploma in Accountancy at the NMMU, could be the difficulty experienced by students to adapt to higher volumes of work in the second year accounting module – students might find it hard to manage higher work volumes resulting in lower success rates. As a result, second year students that are successful stand a better chance of being successful in the third year accounting module.

Many factors influencing the success of students at higher education institutions have been identified in published literature, for example poor schooling, lack of fluency in the language of instruction, inadequate access to financial support and student support services (Strydom *et al.*, 2012:i). Investigating the reasons for specific success rates achieved falls outside of the scope of this paper.

7. CONCLUSION

The objectives of this paper were firstly to conceptualise different teaching approaches; secondly, to describe the current teaching practice model; and thirdly to discuss the success rates obtained through the current teaching practice model for the diploma learning programme financial accounting modules at the NMMU. From the literature consulted during the literature review and from the discussions of the primary data collected in previous sections of this paper, it can be concluded that the accounting modules in the diploma in accountancy of the NMMU are taught largely according to the *teacher-centred teaching* *approach* – high student to lecturer ratios; transfer of knowledge from lecturer to students in a formal environment. It is only in exceptional instances that characteristics of the student-centred teaching approach are found to be present.

This limited use of the student-centred approach could be as a result of inadequately prepared school leavers entering the diploma learning programmes, or due to a lack of knowledge of lecturing staff in respect of the application and implementation of such an approach. The use of technology [blended learning] does also not form a material part of the current teaching approach used in accounting modules. The use of blended learning could alleviate challenges faced by students who cannot afford to buy text books or are not able to regularly attend classes.

The discussion of the literature and data gathered reveal that the current teaching practice model of the NMMU for the first to third year Diploma in Accountancy accounting modules, does not sufficiently equip students to meet their institutional target success rate of 75%.

In light of the discussions of the findings and the conclusion above, further research should be conducted on the possibility of an inclusive teaching practice model In order to improve the success rates of students at the NMMU, research should be conducted on the profile of the students that typically enrol for diploma learning programmes in order to tailor make a teaching practice model for students with a particular profile. The use of blended learning as an additional teaching approach should also be subjected to research.

REFERENCES

Altinyelken, H. 2010 Curriculum change in Uganda: teacher perspectives on the new thematic curriculum. *International Journal of Educational Development*, 30:151-161.

Andergassen, M., Behringer, R., Finlay, J., Gorra, A. & Moore, D. 2009. Weblogs in Higher Education – why do Students (not) Blog? *Electronic Journal of e-Learning*, 7(3): 203-215.

Andrade, A., Castro, C. & Ferreira, S. A. 2012. Cognitive communication 2.0 in Higher Education: to tweet or not to tweet? *Electronic Journal of e-Learning*, 10(3):293-305.

Attewell, J. 2005. *Mobile technologies and learning.* [Online]. Available: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.124.7027&rep=rep1&type=pdf. [Accessed 17 October 2009].

Bark, J. & Kush, J. 2009. GEARS a 3D Virtual Learning Environment and Virtual Social and Educational World Used in Online Secondary Schools. *Electronic Journal of e-Learning*, 7(3):215-224.

Barnard, A. 2015. (annemarie@mbat.biz), "NMMU Report on students life and campus learning community 2009", E-mailed to: jaco.barnard@nmmu.ac.za, 17 February 2015.

Berkowitz, S. J., Kung, J. W. & Eisenberg, R. L. 2013. *Resident iPad Use: Has It Really Change the Game?* American College of Radiology, pp. 1-5.

Bonk, C., & Cunningham, D. 1998. *Searching for learner-centred, constructivist, and socio-cultural components of collaborative educational learning tools.* [Online]. Available: http://publicationshare.com/docs/Bon02.pdf [Accessed 23 December 2013].

Bowen, W. G., Chingos, M. M. & Lack, K.A. & Nygren, T.I. 2012. Interactive Learning Online at Public Universities: Evidence from Randomized Trials, s.l.: ITHAKA.

Boyle, T., Bradley, C., Chalk, P., Jones, R. & Pickard, P. 2003. Using Blended Learning to Improve Student Success Rates in Learning to Program. *Journal of Educational Media*, 28(2-3):165-178.

Brown, A. L., Ash, D., Rutherford, M., Nakagawa, K., Gordon, A., & Campione, J. C. 1993. *Distributed expertise in the classroom.* In G. Salomon (Ed.), Distributed cognitions: Psychological and educational considerations: 188–228. New York: Cambridge University Press.

Brown, J. S., Collins, A. & Duguid, P. 1989.Situated cognition and the culture of learnig. *Educational Researcher*, 18(1):32-42.

CHE see Council for Higher Education

Cobb, P. 1994. Where is mind? Constructivist and sociocultural perspectives and Training (DHET). 2013. Statistics on mathematical development. *Educational Researcher*, 23(7):13-20.

Collins, A. 1990. *Cognitive apprenticeship and instructional technology.* In L. Idol & B. F. Jones (Eds.), Educational values and cognitive instruction: Implications for reform: 119-136. Hillsdale, NJ: Lawrence Erlbaum Associates

Council for Higher Education (CHE). 2013a. A proposal for undergraduate curriculum reform in South Africa: The case for a flexible curriculum structure. Pretoria: CHE.

Council for Higher Post-School Education. 2013b. Framework for Institutional Quality Enhancement in the Second Period of Quality Assurance. Institutional Audits Directorate, December 2013. Pretoria: CHE.

Cuban, L. 1983. How did teachers teach? *Theory into Practice*, 22(3):160-165.

Du Plessis, A., Muller, H. & Prinsloo, P. 2005. Determining the Profile of the successful first year accounting student. *South African Journal of Higher Education* 19(4): 684-698.

Duffy, T. M., & Cunningham, D. 1996. *Constructivism: Implications for the design and delivery of instruction.* In D. H. Jonassen (Ed.), Handbook of research on educational communications and technology: 170-198. New York: Scholastic.

Duncan, D. 2005. Clickers: A New Teaching Aid with Exceptional Promise. *Astronomy Education Review*, 5(1):70-88.

Dzakiria, H., Don, M. S. & Abdul Rahman, H. D. 2012. Blended Learning (BL) as pedagogical alternative to teach business communication course: Case Study of UUM Executive diploma program. *Turkish Online Journal of Distance Education*, 13(3).

Dziuban, C. D., Hartman, J. L. & Moskal, P. D., 2004. Blended Learning. EDUCAUSE, 30 March, (7):1-12.

El-Mowafy, A., Khun, M. & Snow, T. 2013. *A blended learning approach in higher education: A case study from surveying education.* IN Proceedings of the 22nd Annual Teachning Learning Forum, Perth, pp. 1-11.

Favell, A. 2014. *MobiThinking*. [Online]. Available: http://mobithinking.com/mobile-marketing-tool/latest-mobile-stats/a [Accessed 25 April 2014].

Gecer, A. & Dag, F. 2012. A Blended Learning Experience. *Educational Sciences: Theory & Practice*, 12(1):438-442.

Griesel, H. & Parker, B. 2009. *Graduate Attributes: A baseline study on South African graduates from the perspective of employers*, Pretoria: Higher Education in South Africa and South African Qualifications Authority.

Hain, S. & Back, A. 2008. Personal Learning Journal – Course Design for Using Weblogs in Higher Education. *The Electronic Journal of E-learning*, 6(3):189-196.

Harden, R. M., & Crosby, J. R. 2000. The good teacher is more than a lecturer. *Medical Teacher, 22*.

Haser, C., Star, J. 2009. Change in beliefs after first year of teaching: the case of Turkish national curriculum context. *International Journal of Educational Development*, 29:293-302.

Herrington, A., Schrape, J. & Singh, K. 2012. *Engaging students with learning technologies*, s.l.: Curtin University.

Horn, M. B. n.d. *Blended Learning*. [Online]. Available: http://www.christenseninstitute.org/blended-learning/ [Accessed 10 February 2014].

ITU World telecommunication. 2013. The world in 2013: ICT Facts and Figurs, Geneva: International Telecommunication Union.

Kandya, R. 2013. *Ideal student-teacher ratio still a mirage.* Available from:

http://timesofindia.indiatimes.com/city/mangaluru/Ideal-student-teacher-ratio-still-a-mirage/articleshow/21968486.cms [Accessed: 28 february 2015]

Kavanagh, M. H. & Drennan, L. n.d. *What skills and attributes does an accounting graduate need? Evidence from student perceptions and employer expectations,* Queensland: s.n.

Kember, D. 1997. A reconceptualisation of the research into university academics' conceptions of teaching. *Learning and instruction*, *7*(3), 255-275.

Kenney, J. & Newcombe, E. 2011. Adopting a blended learning approach: Challenges encountered and lessons learned in an action research study. *Journal of asynchronous learning network* 51(1):45-57.

Köse, U. 2010. A blended learning model supported with Web 2.0 technologies. *Procedia Social and Behavioral Sciences*, 2:2794-2802.

Lam, L. 2012. An Innovative Research on the usage of Facebook in the Higher Education context of Hong Kong. *Electronic Journal of E-Learning*, 10(4):377-386.

Laurillard, D. 2012. *Teaching as a Design science: developing reliable knowledge of learning technology*. [Online]. Available: http://clt.lse.ac.uk/events/networked_diana_laurillard_101012.pdf [Accessed 30 April 2014].

Lea, S. J., Stephenson, D. & Troy, J. 2003. Higher Education Students' Attitudes to Student Centred Learning: Beyond 'educational bulimia'. *Studies in Higher Education*, 28(3):321-334.

Letseka, M. & Maile, S. 2008. *High university drop-out rates: a threat to South Africa's future*. HSRC Policy Brief. Human Sciences Research Council.

McCombs, B. L., & Whisler, J. S. 1997. *The Learner-Centered Classroom and School: Strategies for Increasing Student Motivation and Achievement. The Jossey-Bass Education Series*. Jossey-Bass Inc., Publishers, 350 Sansome St., San Francisco, CA 94104.
Minne, K. (2013) (Kelly.Minne2.@nmmu.ac.za), "2013 – 2015 Strategic Plan: Faculty Business and Economic Sciences", E-mailed to: jaco.barnard@nmmu.ac.za, 17 February 2015.
Mtshali, N. 2013. Maths, Science Teachers Not Up to Scratch. *IOL News*.

NMMU *see* Nelson Mandela Metropolitan University

Nelson Mandela Metropolitan University (2015a) Diploma in Accountancy. [Online]. Available: http://www.nmmu.ac.za/Courses-on-offer/Degrees,-diplomas---certificates/Details.aspx?appqual=YP&qual=3806&faculty=1400 (Accessed 23 February 2015).

Nelson Mandela Metropolitan University (2015b) Vision 2020. [Online]. Available: http://newmy.nmmu.ac.za/Pages/Vision2020.aspx (Accessed 23 February 2015).

Nordin, N., Embi, M. & Yunus, M. 2010. Mobile Learning framework for lifelong learning. *Procedia Social and Behavioural Sciences*, 7(C):130-138.

O'Neill, G., Moore, S., McMullin, B. (Eds). Dublin:AISHE. 2005. Student centred learning: What does it mean for students and lecturers? *Emerging Issues in the Practice of University Learning and Teaching*, 1:33.

Ogude, N., Kilfoil, W. & Du Plessis, G. 2012. An institutional model for improving student retention and success at the University of Pretoria. *The International Journal of the First Year in Higher Education,* 3(1):21-34.

Ormrod, J E (1999) *Human learning (3rd edition),* Sydney, New South Wales: Merrill, Prentice Hall Australia Pty Ltd.

Patterson, B., Kilpatrick, J. & Woebkenberg, E. 2010. Evidence for Teaching Practice: The impact of clickers in a large classroom environment. *Nurse Education Today*, 30:603-607.

Polyacskó, O. 2009. *European Working Conditions Observatory*. [Online]. Available: http://www.eurofound.europa.eu/ewco/2008/11/HU0811019I.htm [Accessed 29 April 2014].

Quinlan, K.M. 2014. Leadership of teaching for student learning in higher education: What is needed? *Higher Education Research & Development*, 33:1, 32-45.

RSA *see* Republic of South Africa

Republic of South Africa (RSA). 2013. The Higher Education Qualifications Sub-Framework (HEQSF). Government notice no. 36721, 2 August 2013. Pretoria: Government Printer.

Republic of South Africa (RSA). 1997. Higher Education Act, 1997 (Act 101 of 1997) [Online]. Available: http://www.acts.co.za/ed_higher_ed/index.htm [Accessed 25 May 2010].

Rogers, C. R., & Allender, J. A. 1983. *Freedom to learn for the 80's* (Vol. 40). Columbus, OH: Merrill.

Roos, S. 2009. Factors affecting Southern African students' success in CIMA examinations. *Meditary Accountancy Research,* 17(1):49-67.

Schweisfurth, M. 2001. Learner-centred education in Comparative study: Impact of family, school, and student factors on student achievements in reading in developed (Estonia) and developing country contexts: From solution to solution?(Azerbaijan) countries. *International Journal of Educational Development*, 31:425-432.

Scott, I., Yeld, N. & J. Hendry. 2007. *A Case for Improving Teaching and Learning in South African Higher Education*. Research paper prepared for the Council on Higher Education, October 2007. University of Cape Town: Centre for Higher Education Development.

Scuh, K.L. 2004. Learner-centred Principles in Teacher-centred Practices? *Teaching and Teacher Education*, 20:833-846.

Shaw, C. 2013. *Learning and Teaching hub.* [Online]. Available: www.theguardian.com/higher-education-network/2013/mar/12/new-teaching-models-higher-education [Accessed 27 April 2014].

Singh, H. & Reed, C. 2001. *A White Paper: Achieving Success with Blended Learning*, s.l.: American Society for Training & Development.

Slabbert, J. A., De Kock, D. M. & Hattingh, A. 2011. *The Brave 'New' World of Education: Creating a Unique professionalism*. Cape Town: Juta.

Smirnova, L., 2008. *Technology Enhanced Teaching and Learning for Student (and Teacher) Success.* [Online]. Available: http://www.nyu.edu/frn/publications/defining.success/Smirnova.html [Accessed 30 April 2014].

Smit, K., de Brabander, C.J. & Martens, R.L. 2013. Student-centred and teacher-centred learning environments in pre-vocational secondary education: Psychological needs and motivation. *Scandinavian Journal of Education Research*, 26:1-18.

Staker, H. & Horn, M. B. 2012. Classifying K–12, s.l.: Innosight Institute.

Statistics South Africa, 2012. Census 2011, Pretoria: Statistics South Africa.

Steenkamp, L. P., Baard, R. S. & Frick, B. L. 2009. Factors influencing success in first -year accounting at a South African university: A compromise comparison between lecturers' assumptions and students' perceptions. *South African Journal of Accounting Research* 23(1): 113-140.

Strydom, J. F., Basson, N. & Mentz, M. (2012) *Enhancing the quality of teaching and learning: using student engagement data to establish a culture of evidence*. South African Survey of *Student Engagement.* Pretoria: CHE.

Tatto, M.T. 1991. Reconstructing teacher education for disadvantaged communities. *International Journal of Educational Development*, 17(4):405–415.

Traxler, J. 2010. Students and Mobile devices. ALT-J, *Research in Learning Technology*, 18(2):149-160.

Vavrus, F. 2009. The cultural politics of constructivist pedagogies: teacher education reform in the United Republic of Tanzania. *International Journal of Educational Development*, 29:303–311.

Vincini,P.J. 2006. [Online]. Available: https://wikis.uit.tufts.edu/confluence/pages/viewpage.action?pageId=705 [Accessed 19 February 2015].

Ward, R., Moule, P. & Lockyer, L. 2009. Adoption of Web 2.0 Technologies in Education for Health Professionals in the UK: Where are we and why? *Electronic Journal of e-Learning*, 7(2):165-172.

Westbrook, J., Shah, N., Durrani, N., Tikly, C., Khan, W., Dunne, M. 2009. Becoming a teacher: transitions from training to the classroom in the NWFP, Pakistan. *International Journal of Educational Development*, 29:437-444.

Ylänne, S.L., Trigwell, K., Nevgi, A. & Ashwin, P. 2006. How approaches to teaching are affected by discipline and teaching context. *Studies in Higher Education*, 31(3): 285-298.

Zhu, E. 2007. *Teaching with Clickers*. [Online]. Available: http://tccl.rit.albany.edu/knilt/images/f/fe/Zhu_Teaching_with_Clickers.pdf [Accessed 3 February 2014].

EDU015 Design and evaluation of a capstone course for accounting students: aligning an academic course with the competency required by the professional body

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Abstract
A capstone course was introduced at a South African University in 2012. It is compulsory for all students studying towards becoming chartered accountants.

The primary concern of this paper is to improve this capstone course for accounting students by making use of Action Research techniques. In the first part of this paper, the context, research problem and rationale for the study, are presented. The literature review explores the nature of capstone courses and the suitability of Action Research as a tool for reflective accounting education practitioners.

The data collection methodology of student evaluations, tutor and lecturer focus groups, is then discussed. The findings suggest that students believe that pervasive skills are being developed although with different degrees of success amongst the educational innovations included in this capstone course. The development of the capstone course through Action Research techniques has also been documented so as to help accounting education practitioners interested in developing a capstone course.

Keywords: Capstone course, Action Research, Innovation, Collaborative Educational Practice, Accounting

Section I: Introduction

This paper describes the design and evaluation of a capstone course for accounting students. It evaluates the development of pervasive skills amongst students and also evaluates the perceived value of various innovative educational initiatives. The evaluation of the course over the past three years has been conducted using the tool of Action Research. In the first part of this study the context is presented whilst the literature review explores the nature of capstone courses and the suitability of action research as a research methodology for the reflective accounting academic practitioner.

Section II: Context

a. **Why did was a capstone course introduced?**

The introduction of the new competency based framework by the South African Institute of Chartered Accountants (SAICA) resulted in the University conducting an extensive mapping exercise to determine the extent to which the College of Accounting was meeting the new requirements (SAICA 2010). There were two significant issues that needed to be addressed.

The first issue was the need to enhance the pervasive skills of the students. SAICA has defined pervasive skills as those relating to ethics and professionalism, personal attributes and professional skills. These pervasive skills have been identified as being important by SAICA and are included in the new competency based framework. (SAICA, 2010) Additionally, since assessment often drives student behaviour, SAICA has changed the nature of the final qualifying exam from 2014 onwards and it will now be an Assessment of Professional Competence (APC). (SAICA, 2011) The APC will consist of a case study and the assessment will be focussed, in particular, on students' ability to demonstrate professional competence as opposed to technical competence (SAICA, 2014). Some of the pervasive skills required for the APC will be the ability to research an industry, analyse complex business scenarios as well as clear communication skills. (SAICA, 2010)

The second issue identified was the need to cover more Management Accounting and Finance material at an undergraduate level.

b. What is the capstone course?

Given the need to enhance the pervasive skills of students as well as the desire to cover more Management Accounting and Finance content, the decision was taken to introduce a new course at the final year undergraduate level. The decision had the support of the College of Accounting across the respective disciplines and a working group was tasked with designing the course. It is important to acknowledge that the College of Accounting agrees with van Acker and Bailey (2011:71) when they say that "Generic skills are too multi-layered and complex to simply be taught in one or even a few courses.". The onus for developing all the pervasive skills cannot be placed on the capstone course but needs to be carried by all the courses in combination.

The design of the capstone course was informed by existing academic literature and also shaped by the ideas generated by the working group. The working group had a list of Management Accounting and Finance content that had been identified by the mapping exercise as needing to be reinforced. It was the feeling of the team that the course didn't need to introduce a lot of new content but rather needed to apply knowledge already acquired to practical business scenarios. Corporate Governance topics were therefore added as it was felt that these were best tested in an integrated manner. The focus of the working group then shifted to designing assessments that would test pervasive skills and that would not be too onerous to grade from a resource perspective given the large class expected (over 450 students). The focus on assessment was agreed as the next step in the design process for several reasons. The first reason was that there was a fear of an additional course placing too great an assessment burden on the students during their crucial final year of studies. The second reason was that students would be especially anxious about assessment and would need to receive clarity on assessment because no prior assessment practices could be referred to. As Ramsden (1992:187) points out "From our students' point of view, assessment always defines the actual curriculum.", and so the design thereof was a crucial element that the group needed to address. The teaching model was then aligned to prepare students for these assessments. That meant that tutorials would be on an equivalent standard to prepare them for assessments and that the lecture material would need to be geared towards greater integration and inclusion of business issues faced by South African companies. Additionally ideas to enhance pervasive skills, like a Johannesburg Stock Exchange (JSE) share trading competition and tutorial presentations by students, were then added to the course design.

c. How is the capstone course structured?

The capstone course is a full year course but with only two 45 minute lectures a week. Tutorials lasting 90 minutes each are presented every second week. Two hour tests are conducted in April and June and the final exam is in September to avoid the final exam timetable being too crowded at the end of the year. The final assessment task is a teamwork project that is performed throughout the year and completed in October.

Section III: Literature Review

The literature review consists of two areas of focus. The first area consists of the literature related to capstone courses. It will focus on definitions of a capstone course and then look at the objectives of capstone courses. This will then allow for an understanding of what is trying to be achieved by a capstone course and therefore what would be a good theoretical framework to implement if attempting to improve a capstone course.

The second area of this literature review will focus on action research, the methodology that will be used to evaluate the capstone course. The definition of action research and its appropriateness for the task will be explored.

What is a capstone course?

There are many definitions of a capstone course. Crunkilton, Cepica and Fluker (1997:3) regard it as “A planned learning experience requiring students to synthesize previously learned subject matter content and to integrate new information into their knowledge base for solving simulated or real world problems”. Holdsworth, Watty and Davies (2009:2) also offer a definition, “The term ‘capstone’ is widely used to describe a course or experience that provides opportunities for a student to apply the knowledge gained throughout their undergraduate degree. This involves integrating graduate capabilities and employability skills, and occurs usually in the final year of an undergraduate degree.”

As pointed out by Bailey, van Acker and Fyffe (2012:4),”In practice, our research found varied notions of what capstones are, and considerable variation in the extent to which these subjects reflect their intended purposes as defined in the literature.” The approach taken by Bailey, J., van Acker, E. and Fyffe, J. (2012:4) was therefore to focus on defining the features of a capstone course as follows:

“In essence, a capstone subject gives students the opportunity to:

- Integrate the knowledge they have gained and to see how it all fits together.

- Consolidate the key skills they will require in their professional lives, including:
  - the ability to collaborate and work effectively in a team;
  - the capacity to communicate effectively; and
  - the ability to think critically and to reconcile theory with practice.
- Apply their knowledge in exploring an issue or solving an authentic problem, in a way that simulates professional practice.
- Reflect on and evaluate their actions and experiences, to equip them to be reflective practitioners and citizens.
- Develop their professional identity and confidence to participate in the workforce."

Jervis and Hartley (2005) published a study focused on an accounting capstone course. The reason for introducing the capstone course was very similar to this study. It was in response to an American accounting body advocating the development of lifelong learning skills. In their review of the literature they found no previous studies that had focussed on an accounting capstone course. They generated a six step process that they believe will help to develop a capstone course regardless of the discipline. The major difference between the Jervis and Hartley course and the capstone course studied is the difference in class size. The capstone course studied has over 450 students per year whereas the other course has student numbers between 15 and 20. The approach taken is therefore seminar based where students are encouraged to participate and this is not easily replicable in the large lecture venues required by the capstone course studied.

As Holdsworth, Watty and Davies (2009:9) point out that "The conclusions that Jervis and Hartley (2005) arrive at do not presume that their model of capstone course development is a perfect solution, as each university has its own constraints and curriculum foci. It is however a reasoned starting point for new capstone development."

The case for the need to reflect on the capstone course is also made more acute when reflecting on the literature that surfaces the challenges of presenting a capstone course. A problem that is particularly relevant is that large class sizes limited opportunities for discussion as well as engagement with tasks and pervasive skill development (Jervis and Hartley 2005). The large class size also compounds a further challenging factor which is that the workload for academics developing a capstone course is considerable. The additional tasks can include case study and research question development. The marking load is also considerable with several or frequent oral presentations and project assignments in addition to the usual assessments. (Jervis and Hartley 2005)

What does Action Research offer a reflective accounting academic who is looking to improve a capstone course?

Action research is described by McNiff and Whitehead (2006:7) as "a form of enquiry that enables practitioners everywhere to investigate and evaluate their work". What makes action research distinctive is that it is undertaken by the practitioner rather than a professional researcher. McNiff and Whitehead (2006:46) correctly point out that "Practitioners should be regarded as competent professionals whose practical knowledge is key to developing human capabilities, their own and other people's".

Action research has the potential to bring together the dual benefit of improving teaching practice and student learning. As van der Westhuizen (2008:1301) stated "The personal significance of this research is that I have learnt to improve my practice and student learning simultaneously". McNiff and Whitehead (2006:65) argue that "most books on professional education simply do not mention the idea of theory generation, or that practitioners should get involved in it. The subject rarely exists as a subject for discussion" and so there could appear to be dividing wall between practitioner and researcher. Proponents of action research however point out that such a dividing wall does not need to exist. Action research is commonly employed in classroom research as a process for practitioners to explore the efficacy of teaching and learning (Arhar, Holly & Kasten, 2001).

The action research cycle spiral is depicted as **Figure 1**. It starts with a **plan** which is a set of interventions designed to improve on what is already happening. These interventions are then **acted** upon and the effects are **observed**. **Reflection** then takes place and forms the basis for further planning. The spiral shape indicates that the action research cycle is intended to be a succession of cycles as opposed to a once-off event. (Kemmis and Mc Taggert, 1988) There are slight variations on this process. Stringer (2013) advocates a Look, Think and Act approach. This involves building an idea of what is going on and gathering information (Look) and then interpreting and explaining (Think) and then resolving issues and problems that were observed (Act).

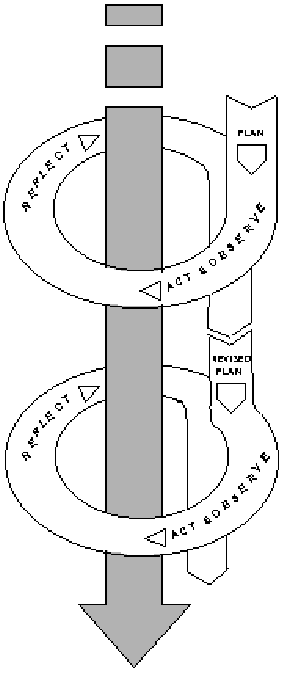


Figure 1: The Action Research spiral (Kemmis and Mc Taggert, 1988:11)

Recently Kiener, Ahuna and Gray Tinnesz (2014) made use of action research to document the development of critical thinking in a capstone course. The study focussed on a capstone course that was implemented for the first time at a small private Midwestern university in the United States of America. The course was a compulsory undergraduate professional program capstone course. The class comprised of six students and therefore is materially different to the large class size of the capstone course in this study. The aspect of the study which was the most encouraging was that the process of action research enabled the researchers not only to study the development of the students but it also created a lens to review their entire curriculum. As Kiener, Ahuna and Gray Tinnesz (2014:119) point out, "Action research provides an excellent means to study curriculum in the context in which it is occurring. It also allows for immediate reflection and modifications to the teaching process to maximize learning. Systematically studying the capstone course provided information on student development but equally importantly it provided information on the entire program."

This would suggest that Action Research is an approach that enhances both student development and reflection on the entire program. Given the requirement to meet the SAICA competency framework, a tool that enhanced reflection on program development would be beneficial.

Coetsee (2011:97) writing in the South African Journal of Accounting made the point that "Many accounting academics are calling for a move away from mainstream accounting research to other research frameworks to develop a greater pool of accounting knowledge.". Action research should be considered by accounting researchers in South Africa. It appears to largely be utilised in education (Downhower, Melvin & Sizemore, 1990; Nihlen, 1992) as well as amongst health professionals (Mubuuke and Leibowitz, 2013; Kember, 2001) and there is no reason to think that it could not equally be applied by accounting practitioners and researchers. McNiff, Lomax and Whitehead (2003:4) have also pointed out that the scope of action research "has broadened to include virtually all professions"

What is attractive about action research is the emphasis that it places on the iterative process of planning, acting, observing and then reviewing before starting the cycle again. This means that evaluation is not regarded as an event but rather a process.
Action research also encourages the use of multiple perspectives. Jacobs, Brandt and Kruger (2006:228) write that a "A community of practice is the bedrock of powerful learning environments in which action and learning, improvisation and experimentation, tacit and explicit knowledge feed on each other". When trying to evaluate the effectiveness of a capstone course it is important that not only the views of the students are taken into consideration. Likewise it would be unwise to only listen to tutors or the academic staff involved. The collaborative process encouraged by action research helps to surface multiple perspectives that can be used to improve the capstone course.
It is a challenging undertaking to evaluate the effectiveness of a capstone course no matter what tools are used to accomplish the task. What is appealing about action research is that the process is understandable and transparent. The action research process can be quickly understood and the documentation of each step allows others to read about the problems

identified, see which interventions have been attempted and then read what has been said by participants. That does not mean that everyone will have the same views but the transparent nature of action research allows for great scrutiny. If practitioners want to be regarded as competent at evaluating their impact in the classroom, they need to be open to scrutiny. As McNiff and Whitehead (2006:70) state “Practitioners have to make their evaluation processes visible, show that these are rigorous and robust, and produce strong evidence to show that they as practitioner-researchers are competent and capable.”. Gronhaug and Olson (1999:13), when exploring the merits and challenges of action research, stated that “in order to legitimate action research, detailed recording of observations and events to allow for detailed re-examination of reported findings is needed”. The rationale and research design that follows will hopefully meet these requirements and also point out some limitations.

Rationale

The capstone course studied is new and although it was designed by a team with the best of intentions, there no doubt are areas for improvement. The majority of the courses taught on the undergraduate chartered accountant programme have been developed over decades through much trial and error. It would therefore be expected that this new course would also need to be refined through applying the principles of Action Research.

As course convenor for the capstone course, there is a personal desire to improve the course every year. SAICA has also shown a great interest in the course and there is the potential for other universities to implement the course or a modified version of it. The University of Zululand, University of Witwatersrand and Walter Sisulu University are all for instance implementing a version of the course from 2015 onwards and it is hoped that this study will help to ensure that they are able to learn from our mistakes. Universities that are accredited by SAICA to train chartered accountants are mandated to develop the pervasive skills amongst their students. As van Acker and Baily (2011:74) stated, “Staff are at times confused and unsure about their role in producing graduates with professional skills. However, capstone courses are a key strategy for embedding graduate skills in the undergraduate business curriculum. Thus close attention needs to be paid – sector-wide, institutionally, at program level and course level – in order to heighten awareness of such courses, and of their key role in embedding graduate skills.” There is a great need to share knowledge in this area and it is hoped that by researching the capstone course and making information available, academics at other institutions can engage with our efforts and offer additional insights or questions that could result in further improvement to the course.

Another reason for the study is that students were initially very resistant to the addition of another course to their final year of undergraduate studies. Clearly listening to the concerns of the students and redesigning the course would hopefully over time decrease this resistance. It is important that the capstone course has a positive overall impact on the students so that they are able to complete their chartered accounting studies successfully.

Finally there is the desire to research whether or not the capstone course met its original intention of filling the gaps found during the College of Accounting mapping exercise to

SAICA's competency framework. The course is intended to help to develop the pervasive skills. This proposed study will go some way to evaluating whether or not this has been the case and where possible improvements could help to ensure greater success in meeting these goals.
Ultimately the capstone course was designed with achieving these objectives in mind and there is a need to evaluate whether or not that has been the case. Furthermore it is hoped that as problems are identified, ideas that lead to greater alignment with these objectives are generated and implemented.

This proposed study is therefore an attempt to pay close attention to this capstone course and make this process transparent and widely available so that interested parties can engage with our process of action and reflection.

Research Question

The study responds to the following primary research question:

Did the introduction of the capstone course lead to an improvement in students' pervasive skills?

The sub-question following from the primary research question is:

(i) What interventions were the most beneficial?

Section IV: Research Methodology

The Action Research process, as discussed in the literature review was adopted. The research method therefore consists of teams of people being asked to reflect on the capstone course and to offer suggestions for improvement. The interventions decided upon were then observed the following year and the cycle repeated.

Research Method

Selection of students, tutors and academic staff and methods of data collection

The students registered for the capstone course in 2012, 2013 and 2014 were invited to participate in the study. The students were asked to complete an online questionnaire. The following participation rates were experienced:

	2014	**2013**	**2012**
Total students	489	466	522
Completed questionnaire	443	412	465
Participation rate	**91%**	**88%**	**89%**

Table 1: Student participation in online questionnaire

The tutors of the course for these years were also invited to reflect on the course once the academic year had concluded. Their participation took the form of a focus group discussion.
Academic staff members who had either played a role in teaching and/or designing the course were invited to participate in focus group discussions. The inclusion of academic staff is regarded as particularly important given that unintended consequences of the introduction of the capstone course might have been felt in the other final year subjects.

The following focus groups were conducted over the course of the project and the author can be contacted in order to obtain transcripts:
Tutors - 31/10/12, 07h30-08h30, 31/10/13, 10h00-11h00 and 22/10/14, 11h30-12h30
Academics - 6/11/12, 09h00-10h10, 14/11/13, 10h10-11h10 and 17/11/14, 11h30-12h15

The particular questions from the student questionnaire which shaped the reflections of the focus groups were the following:

Question 28. If you would like to make additional comments (positive or negative) about this course, please do so in the box below

Question 28 looked to categorise or classify problems that students might have identified. These then could be reflected upon by the tutors and academic staff in the focus groups. The question surfaces the aspects of the course that students regarde as beneficial so that a balanced perspective is received. It might be the case for instance that a group of students dislike the teamwork project but others might make the comment that they really found teamwork to be beneficial. The question therefore specifically invites both positive and negative comments to be made.

Question 29.
What do you think could be done differently in 2013 to improve the capstone course?

Question 29 takes it a step further and invites students to provide ideas for what could be done differently in the following year. Action research encourages reflection, followed by action and that is what the question order is attempting to emulate. Once again there could be a range of responses that could contradict one another but they provide food for thought for both the tutor and academic staff focus groups. .

Question 15:
The course has helped to develop my pervasive skills as defined by SAICA

Question 15 is specifically designed to gather student perception on the level to which the capstone course has developed pervasive skills.
The other questions that were analysed relate to specific innovations in the capstone course that would have been new to the students. There innovations were also the subject of many of the interventions in the subsequent years and they therefore give insight into whether or not these interventions were regarded by students as being improvements.

Question 20.
The Mergers & Acquisitions project has contributed to my learning

Question 20 focusses on the Mergers and Acquisitions teamwork project. This project formed the focus on the pervasive skills and solicited the greatest response from the students.

Question 21.
The research question in every test has contributed to my learning

Question 21 asks about the research question that was included in every test and required students to research current business issues that were supplied to them a month before the test.

Question 22.
The company analysis in every test has contributed to my learning

Question 22 relates to the business analysis that was included in every test. The students were given the name of the company on which the question would be based in advance and were therefore able to research their performance in advance of the test.

All of the assessment practices mentioned above have unique elements when compared to the other undergraduate assessments that the students had experienced during their degree.

Data analysis

Trying to improve a capstone course is not an easy process because what one person regards as an improvement might not be so for another participant. The nature of the data collected was contradictory in places and that is to be expected. The action research analysis therefore is not expected to deliver the uncontested truth about the capstone course but hopefully leads to overall improvements by providing a process that allows for diverse participants to engage. The interventions that were implemented, in light of the feedback received from students, tutors and academic staff, are reviewed in the subsequent year. The iterative nature of Action Research lends itself to this process of reflection. The nature of action research is that it is not easy to isolate the impact of every change but it is hoped that by collecting data from students, tutors and academic staff at least some useful inferences about the impact of the interventions will be developed.

The student questionnaire contains categories that can be quantitatively analysed over the years (Questions 20, 21 and 22). It is a more subjective matter to read the comments that students have made and give them appropriate weighting. A few comments from a student body of over 450 must not be disproportionately weighted but neither can they be ignored. That is why the tutors meeting was held after the student evaluations were completed to elicit comment on matters arising from the students. Once again, when analysing the transcript of the tutors meeting it is not always easy to gauge the level of consensus. The final step of asking academic staff for comments on the observations of students and tutors was the decision making step as to what changes would be implemented in the following year. Thus each step of the process was designed to incorporate the information provided by the step before.

Validity concerns and limitations of the study

As the course convenor and lecturer on the course there is a real danger that my reflections are hampered by my lack of objectivity. It was therefore important to involve students, tutors and other academic staff in the process. In the focus groups involving tutors, another facilitator was used so as to help create an environment where more junior members of staff are encouraged to share their perspectives and ideas even if they might not be in line with the thinking of the course convenor. This is however a limitation of the research and all findings must be regarded through this lens.

This study is unable to clearly isolate cause and effect relationship. The impact of interventions will be explored and multiple perspectives gathered but at no point can it be precisely determined what has been responsible for the impact observed. It is far more likely that inferences and some tentative suggestions about correlation will be the outcome. This is not to say that these might not be helpful to others looking to establish a capstone course in accounting but the research output must not be viewed through the lens of providing conclusive evidence for a particular approach. It must also be noted that some interventions might help to improve a problem identified in a prior period but in so doing might have an unintended consequence that gives rise to a new set of problems. This too is a further limitation of the paper because these problems might not be identified at this stage.

There is also the limitation with respect to students recording their perceptions in the questionnaire as opposed to what was really experienced in the course. Even if this is the case this data is still useful in that at very least the impact of interventions on student perceptions can be explored. It is also helpful that the students are in the final year of undergraduate studies and therefore have a greater level of maturity than would be the case if this was a first year course.

A further limitation is that the capstone course is partially designed to equip students for the world of work but this evaluation process occurs whilst they have just completed their undergraduate studies. There could be the tendency to evaluate certain practices unfavourably at this stage but that at a later stage there helpfulness in the work environment might become known. This is a limitation that cannot be avoided other than to continue to communicate with students once they have graduated. This could be an avenue for further research that would supplement this paper.

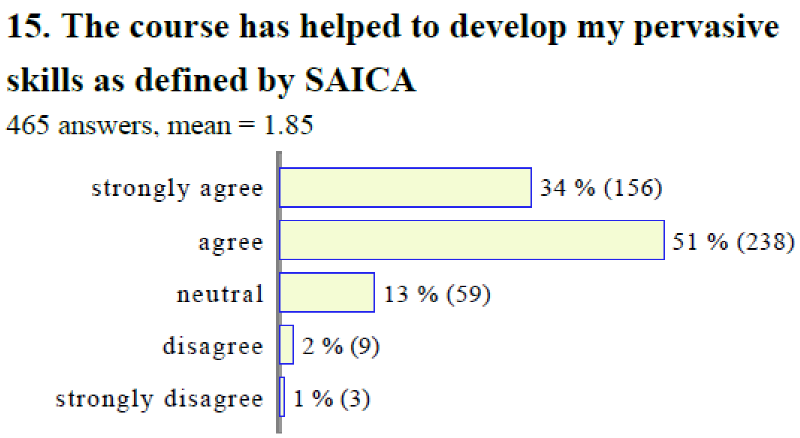
Finally, it is the case that all universities that are accredited by SAICA need to teach the pervasive skills, but this research is personalised and localised to a particular context and capstone course and so the findings should only be applied with prior critical reflection about the context.

Section X: Research findings

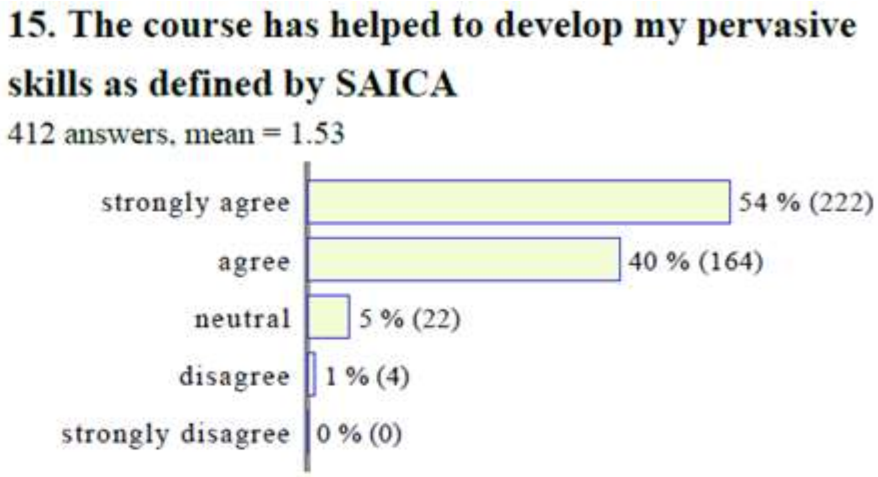
Perceived development of pervasive skills

Question 15 asked for student perception of the development of pervasive skills. It would be expected that Action Research would have resulted in this score increasing as the interventions mentioned in the tables above were implemented.

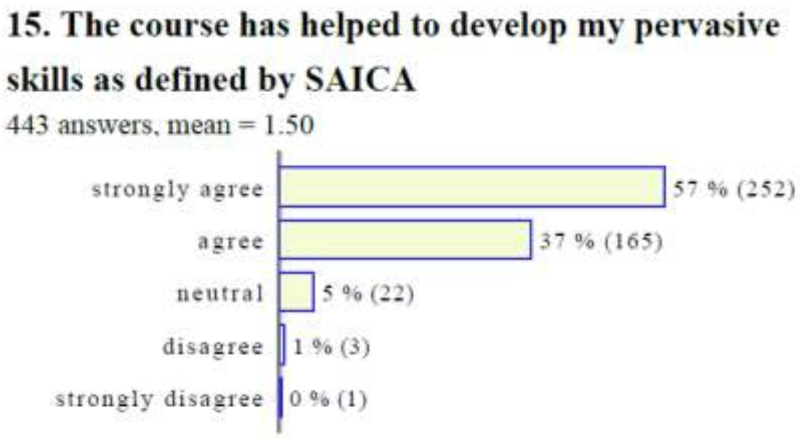
2012



2013



2014



It has been pleasing to note that students on a scale of 1 (strongly agree) to 5 (strongly disagree) have rated the capstone course at 1.50 in 2014 (2013: 1.53, 2012: 1.85). A steadily improving score would suggest that the Action Research methodology has helped.

The following two tables represent some of the biggest interventions suggested after conducting Action Research. This was based on Question 28 (If you would like to make additional comments (positive or negative) about this course, please do so in the box below) and Question 29 (What do you think could be done differently in 2013 to improve the capstone course?). These comments were then discussed at the Tutor and Academic focus groups before an intervention was agreed upon.

What was observed in 2012	Which interventions were implemented in 2013 to take observations into account
Project was too concentrated in the 4th quarter	- Project started in 1st quarter - Deliverables spread out over the year - Sector Night with investment speakers to launch the Mergers and Acquisitions part of the project - Grand Finale a week earlier
Too many small companies in various sectors	- International companies to be included - Only 8 sectors included
Answers to the research questions were memorised in advance	Research areas with key words introduced and specific questions only revealed at the test
The company used in the assessment only being released 24 hours before meant undue pressure on students	The company is released 72 hours before a test
No Integrated Reporting or Tax material covered in the course	Both of these topics included

What was observed in 2013	Which interventions were implemented in 2014 to take observations into account
Analysis questions were easily anticipated and answers prepared and memorised beforehand	- Multiple perspectives required for analysis questions (investor, auditor, provider of finance) - Greater variety in assessment questions (i.e. more specific questions based on the company)
The companies for the project were not regarded as equally exciting	- Greater representation of international companies - Only 4 exciting sectors included – Retail, Financial Services, Industrial and Information Technology
Some teams struggled to work together over the course of the whole year	- Greater emphasis on teamwork skills in lectures and with readings on the online learning platform - Tutors trained specifically on how to deal with teamwork problems as they arise
Share trading competition generating less interest	Challenged the Actuarial Science cohort of students to compete with the CA(SA) class

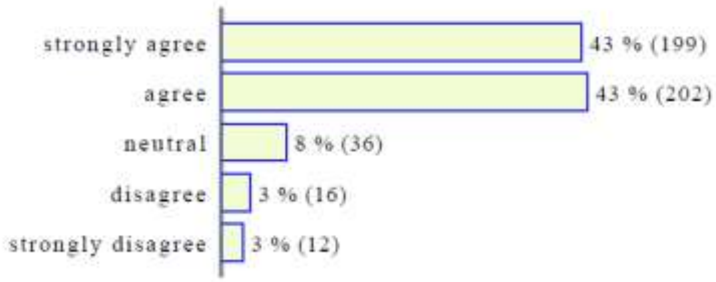
The particular teaching innovations in the capstone course were then analysed.

Question 20 looked at the Mergers and Acquisitions teamwork project. This project formed the focus on the pervasive skills and solicited the greatest response from the students.

2012

20. The M&A projecthas contributed to my learning

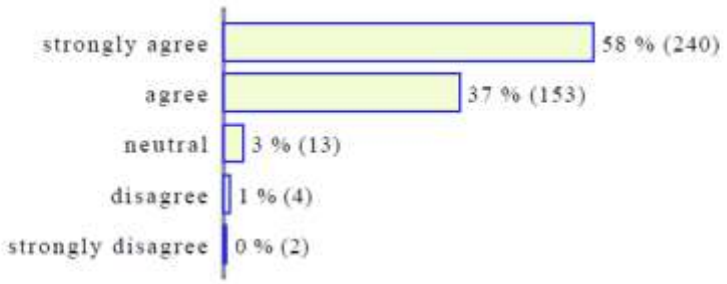
465 answers, mean = 1.80



2013

20. The M&A projecthas contributed to my learning

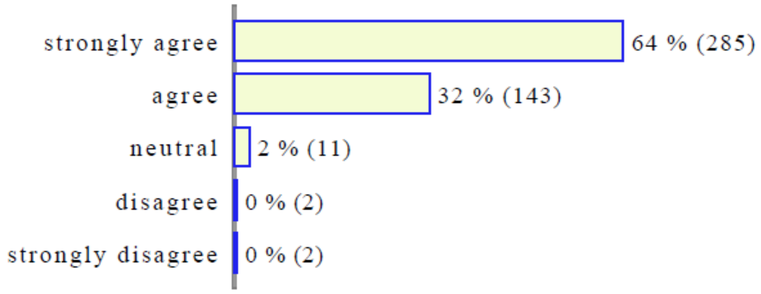
412 answers, mean = 1.48



2014

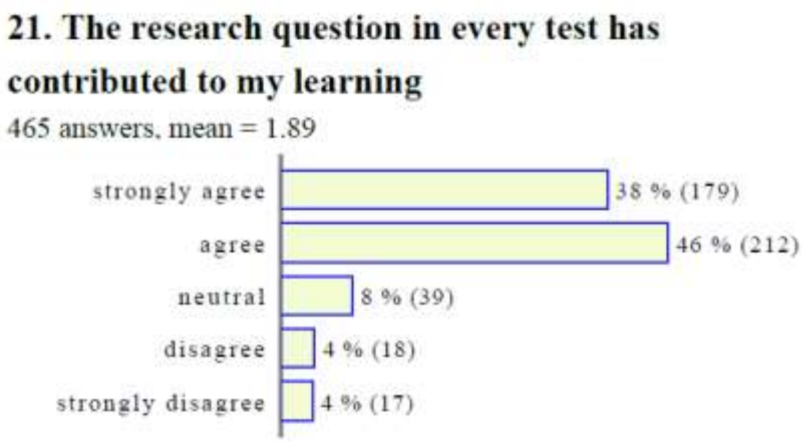
20. The M&A projecthas contributed to my learning

443 answers, mean = 1.40

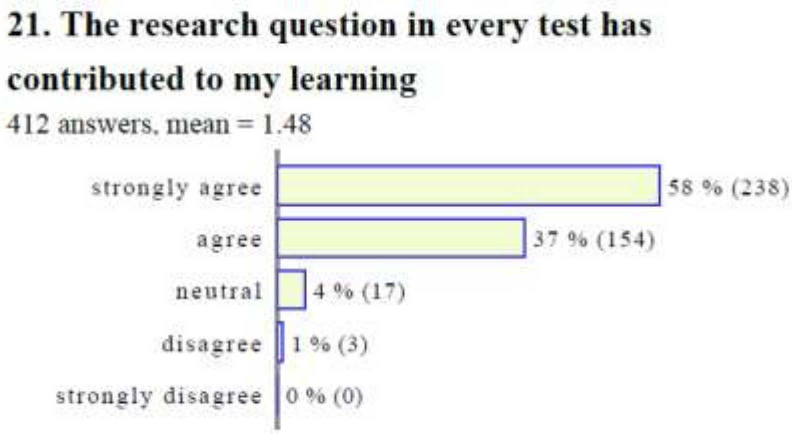


Question 21 asked about the research question that was included in every test and required students to research current business issues that were supplied to them a month beforehand

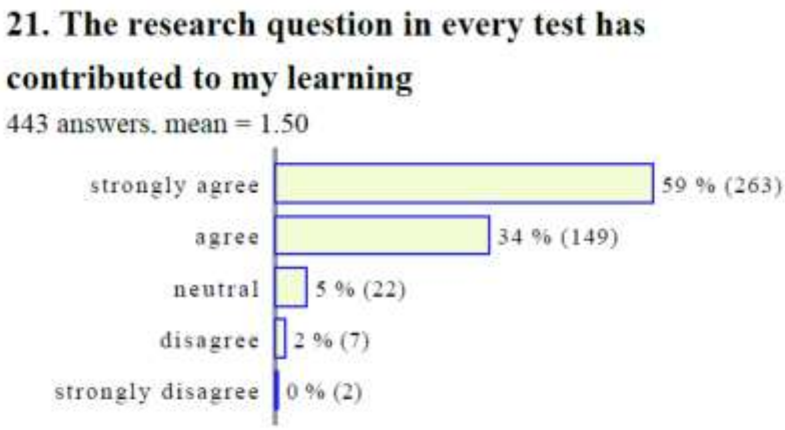
2012



2013

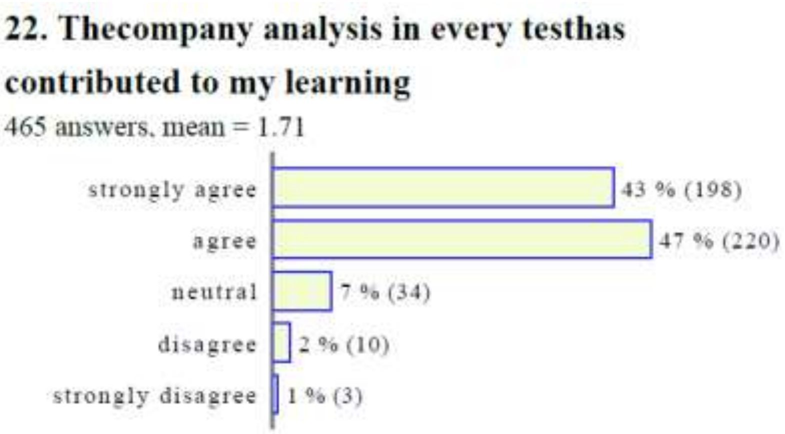


2014

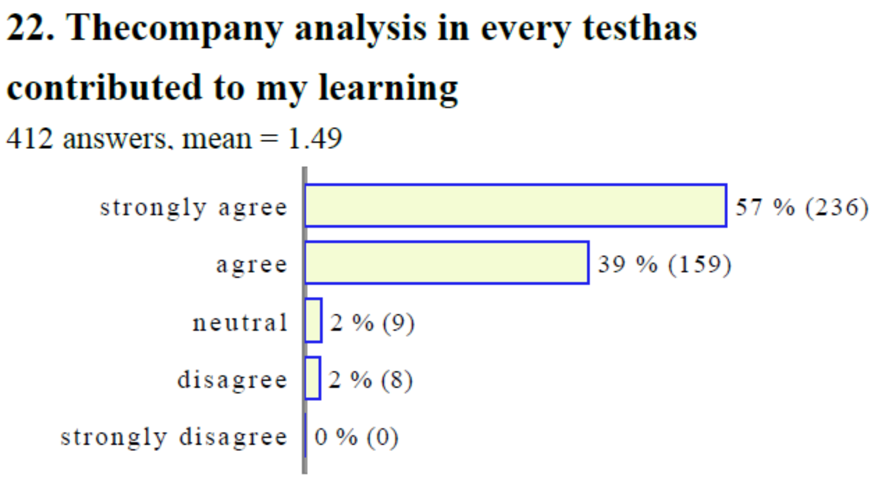


Question 22 related to the business analysis that was included in every test. The students were given the name of the company on which the question would be based in advance.

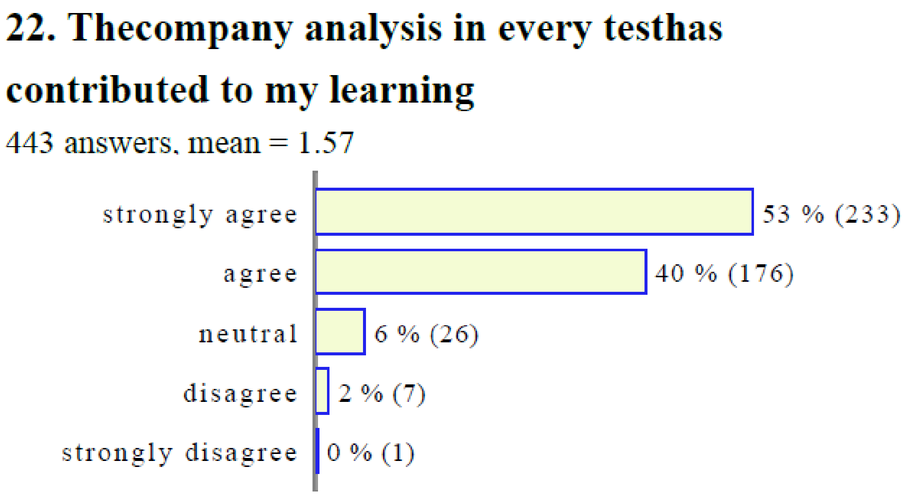
2012



2013



2014



It was the Mergers and Acquisitions project that students perceived to contribute the most to their learning. It is beyond the scope of this paper to expand on the project but it will form the basis for further research. Both the research question and company analysis saw an improvement from 2012 to 2013 but then dropped slightly in 2014. It could be the case that the interventions in 2014 were not as successful as planned.

Section IX: Conclusion

This study has shown that accounting students have perceived that a capstone course has helped to develop their pervasive skills. The use of Action Research generated improvements to that capstone course every year and the perception of students improved after every set of changes. These improvements have been suggested by students, tutors and lecturers over the past three years.

Specific teaching innovations were studied and the Mergers and Acquisitions project in particular was believed to be the most beneficial, followed by a research question and company analysis. It is hoped that this study will serve other accounting academics with the development of a capstone course at their institutions.

Using Action Research as a tool to improve educational practice is recommended as it has led to annual improvements to the capstone course and increased student's perceived pervasive skills.

Bibliography

Arhar, J., Holly, M. and Kasten, W. (2001) Action research for teachers: Traveling the yellow brick road. Columbus, OH: Prentice Hall.

Bailey, J., van Acker, E. and Fyffe, J. (2012) Capstone subjects in undergraduate business degrees: A good practice guide. Brisbane: Griffith University.

Coetsee, D. (2011) A comment on research frameworks applied to accounting research, *SA Journal of Accounting Research*, Vol 25, Number 1, 2011, 81-102

Crunkilton, J. Cepica, R. Fluker L. (1997) Portfolio of capstone courses in colleges of agriculture (USDA award # 94-38411-016). Washington, DC: US Department of Agriculture

Downhower, S., Melvin, M. P., & Sizemore, P. (1990). Improving writing instruction through teacher action research. *Journal of Staff Development*, 11(3), 22-27

Grønhaug, K. and Olson, O. (1999) Action research and knowledge creation: merits and challenges *Qualitative Market Research: An International Journal*, Volume 2, Number 1, 6–14

Holdsworth, A., Watty, K., & Davies, M. (2009). Developing capstone experiences. Melbourne: Centre for Study of Higher Education, University of Melbourne.

Jacobs, H., Brandt, C. and S. Kruger (2006) Eliciting and shaping tacit knowing for metainnovation: A challenge for Management Education in the 21st Century Transitional University, Acta Commercii, 2006

Jervis, K. & Hartley,C. (2005).Learning to design and teach an accounting capstone. *Issues in Accounting Education*, 20(4), 311-339.

Kember, D. (2001) Reflective Teaching and Learning in the Health Professions: Action Research in Professional Education, Wiley-Blackwell

Kemmis, S. and McTaggert, R. (1988) The Action Research Planner (3rd edn.). Geelong: Deakin University Press, 11

Kiener, M., Ahuna, K. & Gray Tinnesz, C. (2014) Documenting critical thinking in a capstone course: moving students toward a professional disposition, *Educational Action Research*, 22:1, 109-121, DOI: 10.1080/09650792.2013.856770

McNiff, J. and Whitehead, J. (2006) All you need to know about Action Research, London: Sage publications

McNiff, J., P. Lomax and J. Whitehead. (2003). You and your action research project. Second edition. London: RoutledgeFalmer.

Mubuuku, A. and Leibowitz, B. (2013) *African Journal of Health Professions Education* 2013;5(1):30-33. DOI:10.7196/ajhpe.208

Nihlen, A. S. (1992, April). Schools as centers for reflection and inquiry: Research for teacher empowerment. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. ED354584

Ramsden, P. (1992), Learning to teach in higher education. London: Routledge. p. 187

SAICA (2010) Competency Framework - Detailed Guidance for Academic Programmes, Retrieved from https://www.saica.co.za/Portals/0/LearnersStudents/documents/INTEGRITAS-292277.pdf

SAICA (2011) Frequently Asked Questions about the Assessment of professional competence (APC), Retrieved from https://www.saica.co.za/Portals/0/news/FAQ_AssessmentProfCompetence.pdf

SAICA (2014) APC: Assessment of Professional Competence Update June 2014, AccountancySA, Retrieved from http://www.accountancysa.org.za/apc-assessment-of-professional-competence-update-june-2014/

Stringer, E. 2013. Action Research. 4th ed. Los Angeles, CA: Sage.

van Acker, E., Bailey, J. (2011), Embedding Graduate Skills in Capstone Courses. *Asian Social Science Journal*, Vol. 7, No. 4; April 2011

van der Westhuizen, C. N. (2008) Facilitating lecturer development and student learning through action research SAJHE 22(6)2008 pp 1292–1303

PART B - AUDITING

Table of Contents

AUD001 Board of Directors’ Gender and Sustainability Disclosure Inclination

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Abstract

This paper examined possible association between a corporate board of directors’ gender mix and the sustainability disclosure genre. Whilst recent research literature have found that gender mix is associated with improved sustainability reporting, the disclosure preference of different gender compositions have not been explored, at least, not within the South African context. This paper thus offers a nuance perspective to existing literature by examining the unexplored dimension in the literature – the type of sustainability reporting to which a board gender mix may be inclined. Using a sample of thirty companies from the Johannesburg Stock Exchange (JSE) Socially Responsible Investing Index (SRI), the Chi-square analysis results show that companies with a male dominated board of directors are more inclined to environmental disclosure, but companies with a critical mass of women (up to three women) on the board of directors, are more disposed to social responsibility disclosure. The finding of this research thus offers an agenda for further research on the likely implication of gender mix on corporate sustainability investment decisions.

Key words: board gender; board diversity; environmental accounting; environmental disclosure; social accounting; sustainability disclosure; social disclosure.

1. Introduction

The need to diversify the corporate boards of directors has been receiving growing attention in the literature (Ntim & Soobaroyen, 2013; Ntim, et al., 2012; Post et al., 2011; King Committee, 2002). The call for board diversity is primarily based on the belief that a combination of diverse experience from men and women of different knowledge domain, experiences, backgrounds, norms, culture and religion fosters a stronger board composition that instils expert business philosophies for corporate strategic, operational and tactical decision making (Post et al., 2011). Board diversity issues have received greater attention after the 2007-2008 financial crisis, where, amongst others, board related weaknesses, including diversity, have been pointed out as some of the contributory factors (Kirkpatrick, 2009; Erkens, et al., 2012). Whilst most of the post-financial crisis board diversity research have focussed more attention on the financial outcomes of board dimension (Kaczmarek et al., 2014; Wang & Hsu, 2013; Lückerath-Rovers, 2013; Mahadeo, et al., 2012; Nielsen & Huse, 2010; Carter, et al., 2010), some other researchers have turned their attention to board diversity implications for environmental and social performance and disclosure (Hafsi & Turgut, 2013). This is because the ethical issues associated with environmental and social performance are perceived as functional toward ensuring and sustaining corporate economic objectives without undermining the society, environment or stakeholders (Eccles, et al., 2014; Cheng, et al., 2014). Lately, board diversity research has advanced from the internal and external board of directors' composition to gender composition relationships with sustainability performance and disclosure (Boulouta, 2013; Post et al., 2011; Fernandez-Feijoo et al., 2014; Liao et al., 2014). Amongst others, one of the latest findings in this realm of research indicates that women on the board is associated with improved sustainability reporting (Post et al., 2011; Walls et al., 2012; Fernandez-Feijoo, et al., 2014; Liao, et al., 2014; Post, Rahman & McQuillen, 2014). However, a different dimension – board gender mix and sustainability disclosure inclination (social or environmental), has not been examined, at least, not within the South African setting. Hence, this paper attempts to make a moderate nuance contribution to the ongoing literature on a board of directors' gender and sustainability disclosure by examining the possible association between board gender mix and sustainability disclosure inclination.

Accordingly, the question that underscores this paper is whether the gender composition of a board of directors in South Africa has an association with sustainability disclosure predilection (social disclosure or environmental disclosure). The objective of this paper therefore is to evaluate a possible association between gender composition of a board of directors in South Africa and sustainability disclosure inclination (social disclosure or environmental disclosure). To the best of these authors' knowledge, this dimension of a board gender and sustainability disclosure relationship has not yet been explored within the South African setting. The sustainability disclosure dimensions which are discussed and examined in this paper are limited to the social and environmental disclosures. Examining the association between board gender-mix and preference for social or environmental disclosure is rooted in the research finding that social and environmental penchant may differ according to gender type (Galbreath, 2011); and these findings corroborate Galbreath's (2011) claim as the test result indicates that whilst gender-mixed boards (with three or more women) are more predisposed to social disclosure, male dominated boards are more inclined to environmental disclosure in South African SRI companies.

The remainder of this paper is structured as follows: section two (2) presents a brief theoretical underpinning; this is followed by a review of related literature on board gender and sustainability disclosure in section three (3). Following this, section four (4) discusses the method and the results are presented and discussed in section five (5); finally section six (6) draws a conclusion.

2. Theoretical Underpinning

With no intention to dwell too deeply in a theory review, the authors briefly highlight, for further research purposes, how some theories can lend further understanding and thus an avenue for future expansion of this paper. Divergent, but somewhat related theories to this paper's dimension of sustainability disclosure discussion, include but are not limited to signalling, agency, and resource dependency. The Signalling theory posits that different individuals behave differently after accessing different kinds of information, accordingly, the sender of the information (the signal) is cautious of how the information is sent, and the receiver is predisposed to a varied interpretation of received signal (information) (Connelly, et al., 2011). In this vein, proactive and sustainability sensitive corporations strive to enhance board diversification, including the gender mix, to send out a signal of legitimacy to stakeholders. Therefore, existing research on corporate governance has demonstrated that providing information on the extent of board gender diversity is effective in signalling corporate social responsibility compliance (Miller and Triana, 2009). Whilst board gender mix has attracted attention as a gender and social equity gauge for boards and their companies, women's endowed empathy for social issues dispose them to sympathy for social performance and hence disclosure, thus it is reasoned that board gender-mix sends a positive signal to socially responsible investors that their social interest in the corporation is protected. Accordingly, board gender-mix sends a signal of board prestige and hence improves investors' confidence about corporate legitimacy (Certo, 2003).

In addition, the agency theory is also moderately brought to the fore in this paper, reason being, that the board is regarded as representing the agent who looks after the company on behalf of the principals. Accordingly, being an agent places the onus on the board to make decisions that are in the best interest of the principals or investors. It is currently believed that board gender diversity and sustainability responsibility are crucial governance attributes that may endear the company to socially and environmentally sensitive clients (Krumsiek, 1997; Grosser & Moon, 2005; Suk, 2012), elevating such legitimacy is thus in the very best interest of the investors. Inclusion of women on the board therefore bestows a diversity of choices of sustainability disclosure and performance decisions (Hillman & Dalziel, 2003) and thus bridges parochial sustainability decisions and related information asymmetry that may subsist in a male dominated board. It is thus believed that women have unique skills, and consequently women's inclusion on the board precipitates a distinctive resource to the board for quality board decisions (Bear et al., 2010); hence, although the agency theory has been popularised in existing studies relating to the board of directors (Hillman, et al., 2009; Dalton, et al., 2007), given the acclaimed skills and resourcefulness of women on the boards (Bear, et al., 2010), this paper is also anchored in the resource dependency theory. Ubiquitous evidence abound in the literature avowing the resourcefulness of women on the board of directors. For instance, female directors are more imbued with diversity of ideas than men, reason being that female directors have more diverse experience outside the world of business than the men (Hillman et al., 2003). It has also been established that female directors are, by nature, more supportive, empathic and caring, and that the gender sensitivity of women in society makes female directors influential in society (Hillman et al., 2003), accordingly, female directors possess a greater propensity to steer corporate decisions and actions in favour of the corporate social responsibility genre of sustainability responsibility (Bear et al., 2010). Accordingly, a critical mass of women on the board provides an opportunity for both male and female board members to display preferences regarding the sustainability disclosure type; but this opportunity may be elusive in male dominated boards. To foster more insight, the following sections explore some related literature on the association between board gender and sustainability disclosure.

3. Related Literature

Board of Directors and Sustainability Disclosure

The movement for corporate social and environmental responsibility has come of age, dating as far back as 1945-1960 (Carroll & Shabana, 2010). The momentum and depth of academic and research discussion about corporate social and environmental responsibility has transformed along a plodding degree of velocity from the early days of scanty academic discussion and slight business concern, to the 1970's. During this period (1970's), the corporate social and environmental responsibility phenomenon gained accelerated impetus and acceptance by business, mostly in the area of corporate performance implications of corporate social and environmental responsibility (Carroll & Shabana, 2010). However, the contemporary drive and value that is placed on the disclosure of corporate sustainability information seem to have gained increased momentum since the Oxley Bane Act (Crusto, 2005). This is as a result of the need to include comprehensive and credible information about corporate operations and to make the profit or loss declaration credible and thus protect the stakeholders' investment.

Sustainability disclosure has thus become an evolving fundamental device used to enhance stakeholder engagement (Manetti, 2011; Isenmann, et al., 2011). Accordingly, sustainability disclosure is emerging as a key component of the corporate strategic planning tool (Čuček, et al., 2012; Da Rosa, et al., 2012) that a proactive board must inevitably consider on how to meet contemporary environmental and social challenges of business. These emerging challenges triggered Parkinson's (1993) research which posits eloquently that the authority of a modern corporation and its tasks are now cause for community disquiet, which thus attracts corporate governance's attention and this is considered significant since corporate strategies are characterized and created by the board of directors (Fernandez-Feijoo et al., 2014), hence corporate sustainability disclosure decisions have fallen within the ambit of the board of directors' routine decision making. Accordingly, as much as the board's characteristics and/or diversity has been found to associate with the extent of financial disclosures of the company (Cheng & Courtenay, 2006), board characteristics have also been found to associate with sustainability disclosures. For instance, Frias-Aceituno et al. (2013) inspected 568 organizations from 15 nations, and found, amongst others, that the governing board, together with gender orientation, are the most critical elements that assist the board of directors' role in making decisions about sustainability disclosure.

The aftermath of the financial crisis added impetus to the allure of sustainability disclosure, in addition to conventional financial information, to enable the investors' evaluation of firms' value for investment confidence. Since sustainability disclosure is now part of investors' investment decision making tools, albeit the voluntary or mandatory status of sustainability disclosure in a particular country, the decision on what to disclose, the width and stretch of disclosure, and how to disclose, rests solidly on the board of directors (Ballou, et al., 2006). Similarly, existing research have found that sustainability disclosure is associated with board composition and gender diversity (Cheng et al., 2006; Donnelly & Mulcahy, 2008). Hence, the following section discusses some related literature on board gender and sustainability disclosure.

Board Gender and Sustainability Disclosure

In their research, Post et al. (2011) assessed the relationship between the configuration of boards of directors and environmental corporate social obligations by synthesizing existing research works on boards of directors' configuration, firm's corporate social obligations, and individual contrasts about environmental issues. They utilized reported organization information and environment appraisal information from Kinder Lydenberg Domini (KLD) Inc. for 78 Fortune I000 organizations. The study found that a greater percentage of outside boards of directors are connected with more positive environmental corporate social obligation and higher KLD quality scores. Firms with boards of directors made up of three or more female executives received higher KLD quality scores. In a closely related research, Fernandez-Feijoo et al. (2014) found that countries with up to three women on the board of directors experienced a higher degree of corporate social responsibility reporting than those with a smaller proportion of women on the boards. In another study, Fernandez-Feijoo et al. (2012) discovered that in addition to women on the board fostering corporate social responsibility disclosure, the presence of up to three women on the board is also associated with the provision of assurance opinions and the disclosure of the corporate social responsibility policy of the companies. These findings are related to Setó-Pamies (2013) findings that women directors are associated with corporate commitment to social responsibility, and that women are endowed with unique talents to influence corporate decisions toward social responsibility. This finding thus corroborates Bear et al. (2010) finding that women on the board contribute diverse resources to the firm. These conclusions are also related to other similar findings which avows that the presence of women on the board influences the board of directors' judgments (Williams, 2003). Women's appointment to the board triggers a positive market reaction (Campbell and Vera, 2010). Companies with women directors command a greater reputation (Brammer et al., 2009). Similarly, Liao et al. (2014) discovered a critical positive relationship between gender diversity on the board of directors and the tendency to report Green House Gases (GHG) data and the width of the reports. In a study of sustainability performance in a selection of public oil and gas companies in the United States of America (USA), Post et al. (2014) found an association between the number of women in a corporate board membership and the firm's environmental performance. Because of global dearth or a low representation of women on the board, research therefore regarded three women representation as a critical mass of women representation on the board that may influence decisions (Kramer et al., 2006; Bear et al., 2010; Post et al., 2011).

> *"Although two women are generally more powerful than one, it takes three or more women to achieve the "critical mass" that can*

> *cause a fundamental change in the boardroom and enhance corporate governance." (*Kramer et al., 2006:1*)*

Bear et al. (2010) corroborate this unique finding and conclude that a fair representation of women on the board of directors (up to three women) have a positive association with firms' corporate social responsibility. Furthermore, Bear et al. (2010) posit that women are endowed with skills and knowledge that make their presence on the board an invaluable resource diversity to enhance decisions that favour corporate social responsibility. Addressing the corporate social and environmental responsibility of the firm is a valued proactive corporate response for satisfying the multiple desires of multiple stakeholders of the corporation (Freeman, 1984). This is strategically significant, given that in a contemporary competitive market it meant that a firm may retain its market niche and enhanced growth depending on its ability to satisfactorily meet the expectations of all the stakeholders (Harrison et al., 2010). Meeting the multiple stakeholder expectations requires a thorough knowledge of and interactive ability with the stakeholders to inform the enabling corporate decisions to foster such expectations (Yelkikalan & Köse, 2012). It has therefore been posited that because of women's disposition to empathy and inclination to social interactions, women on the board of directors are more inclined to foster decisions that enhance corporate social responsibility than their male counterparts (Galbreath, 2011). According to (Hefferman, 2002), women constitute about eighty one percent of customers that form the bulk patronage for the average stock of merchandise and services in the market, and buyers are said to constitute the major profit generating stakeholder genre of the firm (Clarkson, 1995), thus women seem to understand the social dimensions of the market, including the market expectations about product and service value, more than men (Kim et al., 2011). Therefore, on account of their social capacities and skills, women on the board of directors are more probable ready to respond to the expectations of numerous stakeholders and this may well enhance expected pragmatic social responsive attributes of the firm (Galbreath, 2011; Williams, 2003; Lämsä et al., 2008). Accordingly, whilst women on the board are more inclined to social issues, men are more inclined to making decisions on environmental concerns (Galbreath, 2011). From the foregoing it can be seen that the board gender-mix fosters a variety of sustainability ideas and preferences, since women and men differ regarding social and environmental backgrounds, skills and choices (Galbreath, 2011). The research hypothesis for this paper is thus stated as follows:

Hypothesis: Board gender mix is associated with preference for sustainability disclosure type (social or environmental).

4. Research Method

The research examined the sustainability disclosure of 30 companies from the JSE Socially Responsible Investing (SRI) index between 2010 and 2014. It was thus decided to choose 2010 because following the release of the King III integrated reporting in 2009, many companies had more social and environmental disclosures in the sustainability section of their integrated reporting in 2010 than in 2009 (Solomon & Maroun, 2012). The

30 companies examined were the companies within the SRI who consistently had either 0-2 women on the board or at least 3 women on the board for the five years (2010 – 2014). Furthermore, at least three women on the board were considered, because previous related research about board gender described the presence of three women on the board as a critical mass: "*it takes three or more women to achieve the "critical mass" that can cause a fundamental change in the boardroom and enhance corporate governance." (*Kramer et al., 2006:1). Up to three women on the board constitute a fair representation of women on the board (Bear et al., 2010). Secondary data were collected using a content analysis method (word counting) (Merkl-Davies et al., 2011) from two major strands of sustainability disclosure (social and environmental) of 30 companies whose names are not disclosed for confidentiality. Previous studies have also used content analyses in sustainability disclosure research, which include amongst others, Bhatia & Tuli, (2014); Solomon & Maroun, (2012) and Clarkson et al., (2008). Companies were divided into two strata – male dominated boards (with 0 – 2 female members), and gender-mix boards (3 or more female members); the following section shows the Chi-square test results of the association between board gender and social or environmental disclosure preferences conducted, using the SPSS.

5. Results and Discussion

The research question and hypothesis for this paper are restated as follows:

Research question: What is the association between board gender and sustainability disclosure preference (environmental or social disclosure)?

Hypothesis:

H0: Board gender is not associated with preference for sustainability disclosure type (social or environmental).

H1: Board gender is associated with preference for sustainability disclosure type (social or environmental).

The results of the study are depicted in table 1 to table 4 and figure 1 below. The Chi-square statistics results in table 3 indicates, $\chi = 4.82$, and $P<0.05$. Additionally, the symmetric measures of strength of association (Phi and Cramer's V tests) were also examined in table 4, and both results indicate that $P<0.05$, which thus show a strong association.

The researchers therefore reject the null hypothesis since $P<0.05$. This indicates that, within the 30 companies whose sustainability disclosures were examined, whilst keeping other factors constant, board gender associates with preference for social or environmental disclosure. The finding of this research is closely aligned to previous other research findings (Galbreath, 2011) that female directors are more inclined to making and favouring social sustainability decisions than their male counterparts. These results also lend a moderate credence to the claims of Fernandez-Feijoo et al. (2013) that the presence of three or more women in the board of directors is associated with improved corporate social responsibility behaviour.

Table 1. Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Susdiclos	30	100.0%	0	0.0%	30	100.0%

Table 2. Gender * Susdiclos Crosstabulation

			Susdiclos		Total
			envr	socl	
Gender	Male	Count	11	4	15
		% within Gender	73.3%	26.7%	100.0%
		% within Susdiclos	68.8%	28.6%	50.0%
		% of Total	36.7%	13.3%	50.0%
	Mixed	Count	5	10	15
		% within Gender	33.3%	66.7%	100.0%
		% within Susdiclos	31.3%	71.4%	50.0%
		% of Total	16.7%	33.3%	50.0%
Total		Count	16	14	30
		% within Gender	53.3%	46.7%	100.0%
		% within Susdiclos	100.0%	100.0%	100.0%
		% of Total	53.3%	46.7%	100.0%

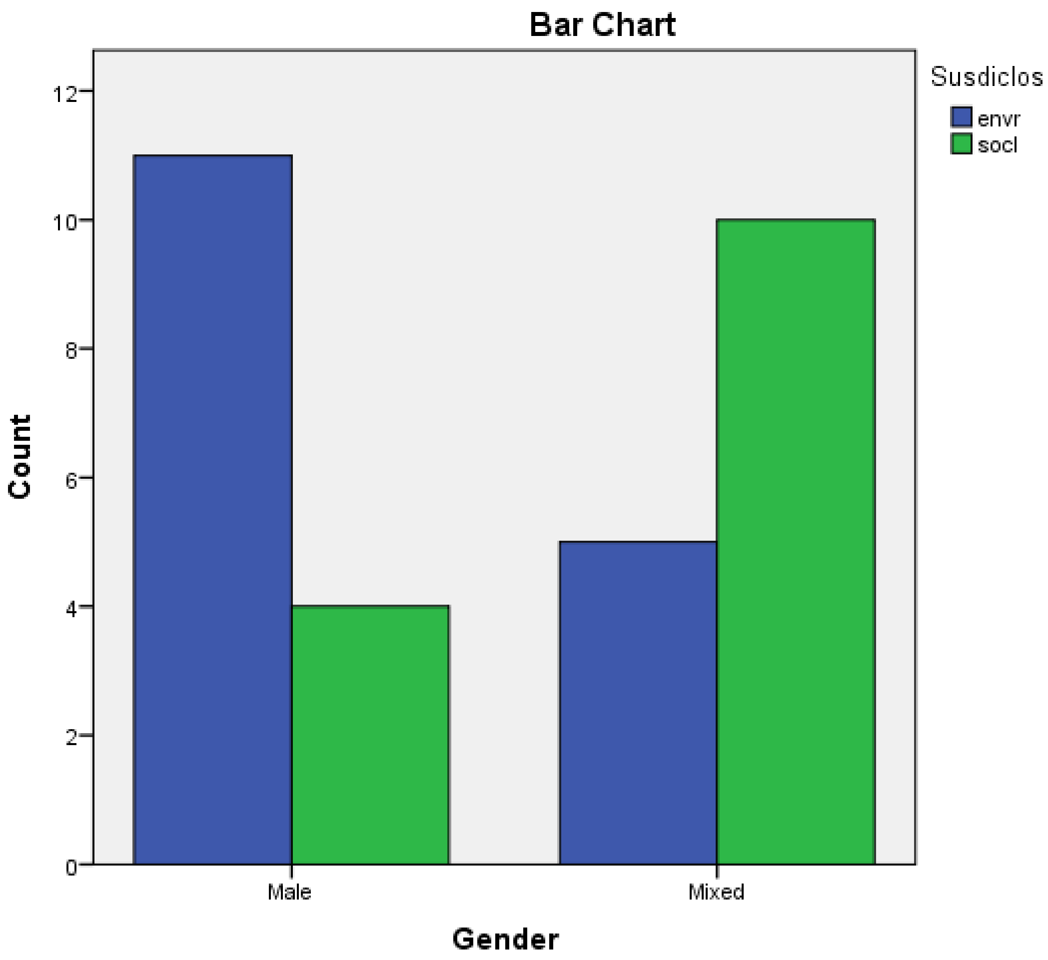
Table 3. Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.821[a]	1	.028
Likelihood Ratio	4.963	1	.026
N of Valid Cases	30		

Table 4. Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.401	.028
	Cramer's V	.401	.028
N of Valid Cases		30	

Figure 1: Bar Chart Depicting the Relation between Gender and Social and Environmental Disclosure



6. Conclusion

The call for corporations to diversify corporate board gender has heightened, and advocates have advanced, amongst other reasons, that women have unique skills and preferences that contribute a wealth of resources to the corporate, bolster the quality of board decisions and bestow corporate legitimacy. Whilst the effect of female boards of directors have been found to support improved corporate sustainability performance, this research explored a nuanced dimension of existing research and examined the association between board gender and the sustainability disclosure genre (social or environmental), in South African companies. Thirty companies in the JSE SRI were researched, and using the content analysis method, social and environmental disclosure contents were examined for a five year period (2010-2014).

Given the aforementioned aim, a Chi-square test was employed to provide an answer to the research question about the association between board gender and sustainability disclosure preference (environmental or social disclosure). Accordingly the research null hypothesis (*H0*)*: Board gender is not associated with preference for sustainability disclosure type (social or environmental)* was tested at 0.05 significant level. The Chi-square result showed a Pearson Chi-Square significant level of 0.028. Thus the Chi-square statistics results of the association revealed that $p<0.05$, furthermore, the Phi and Cramer's V tests for strength of association also showed that $p<0.05$. Since therefore $p<0.05$, the researchers rejected the null hypothesis that *Board gender is not associated with preference for sustainability disclosure type (social or environmental)* and accepted the alternative hypothesis (H1) that *Board gender is associated with preference for sustainability disclosure type (social or environmental).*

Major limitations that researchers identified for the attention of future researchers are: sustainability disclosure used in this research was limited to social and environmental disclosure, other sustainability disclosure such as governance disclosure were not considered. Furthermore, the research population was limited to the JSE SRI Index.

It is thus concluded that, other factors being constant, within the 30 companies examined, board gender showed an association with preference for social or environmental disclosure. The result advance support to earlier research findings that the presence of three or more females in the board of directors is associated with improved corporate social responsibility behaviour. Consequent to these research finding, it is conjectured that board gender preference for social or environmental issues, may likely affect board decisions for social and environmental investment decisions.

Given the above findings, the researchers recommend an agenda for further research on the likely implications of gender mix on corporate sustainability investment preferences. It is also recommended that future research may consider widening the population scope to enhance generalizability of future research findings – a larger sample might be drawn from the entire JSE listed companies. The researchers also recommend that companies who have less than three women in their board of directors may consider increasing the number of women to take advantage of opportunities that critical mass of women on the board may offer as highlighted in this study.

7. References

Ballou, B., Heitger, D. L. & Landes, C. E. 2006. The future of corporate sustainability reporting: A rapidly growing assurance opportunity. *Journal of Accountancy*, *202*(6), 65-74.

Bear, S., Rahman, N. & Post, C. 2010. The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics*, *97*(2), 207-221.

Bhatia, A. & Tuli, S. 2014. An Empirical Analysis of Sustainability Disclosure Practices: Evidence from India and China. *IIM Kozhikode Society & Management Review*, *3*(2), 135-148.

Boulouta, I. 2013. Hidden connections: The link between board gender diversity and corporate social performance. *Journal of business ethics*, *113*(2), 185-197.

Brammer, S., Millington, A. and Pavelin, S. 2009. Corporate Reputation and Women on the Board. British Journal of Management, Vol 20 No 1, pp. 17-29.

Campbell, A. and Minguez Vera, A. 2010. Female board appointments and firm valuation: short and long-term effects. Journal of Management and Governance, No14, pp. 37-59.

Carroll, A. B. & Shabana, K. M. 2010. The business case for corporate social responsibility: a review of concepts, research and practice. *International Journal of Management Reviews*, *12*(1), 85-105.

Carter, D. A., D'Souza, F., Simkins, B. J. & Simpson, W. G. 2010. The gender and ethnic diversity of US boards and board committees and firm financial performance. *Corporate Governance: An International Review*, *18*(5), 396-414.

Certo, S. T. 2003. Influencing initial public offering investors with prestige: Signalling with board structures. *Academy of management review*, *28*(3), 432-446.

Cheng, B., Ioannou, I. & Serafeim, G. 2014. Corporate social responsibility and access to finance. *Strategic Management Journal*, *35*(1), 1-23.

Cheng, E. C. & Courtenay, S. M. 2006. Board composition, regulatory regime and voluntary disclosure. *The international journal of accounting*, *41*(3), 262-289.

Clarkson, M. B. E. 1995. A stakeholder framework for analysing and evaluating corporate Social performance. *Academy of Management Review*, *20*, 92–117.

Clarkson, P. M., Li, Y., Richardson, G. D. & Vasvari, F. P. 2008. Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, *33*(4), 303-327.

Connelly, B. L., Certo, S. T., Ireland, R. D. & Reutzel, C. R. 2011. Signalling theory: A review and assessment. *Journal of Management*, *37*(1), 39-67.

Crusto, M. F. 2005. Endangered Green Reports: Cumulative Materiality in Corporate Environmental Disclosure After Sarbanes-Oxley. *Harvard Journal on Legislation, 42, 483-485.*

Čuček, L., Klemeš, J. J. & Kravanja, Z. 2012. A review of footprint analysis tools for monitoring impacts on sustainability. *Journal of Cleaner Production*, *34*, 9-20.

Da Rosa, F. S., Ensslin, S. R., Ensslin, L. & Lunkes, R. J. 2012. Environmental disclosure management: a constructivist case. *Management Decision*, *50*(6), 1117-1136.

Dalton, D. R., Hitt, M. A., Certo, S. T. & Dalton, C. M. 2007. Agency theory and its mitigation. In Brief, A. & Walsh, J. (Eds.), Academy *of management annals*, Vol. 1: 1-64. Mahwah, NJ: Lawrence Erlbaum.

Donnelly, R. & Mulcahy, M. 2008. Board structure, ownership, and voluntary disclosure in Ireland. *Corporate Governance: An International Review*, 16(5), 416-429.

Eccles, R. G., Ioannou, I. & Serafeim, G. 2014. The impact of corporate sustainability on organizational processes and performance. *Management Science*, *60*(11), 2835-2857.

Erkens, D. H., Hung, M. & Matos, P. 2012. Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide. *Journal of Corporate Finance*, *18*(2), 389-411.

Fernandez-Feijoo, B., Romero, S. & Ruiz, S. 2012. Does board gender composition affect corporate social responsibility reporting? *International Journal of Business and Social Science*, *3*(1), 31-38.

Fernandez-Feijoo, B., Romero, S. & Ruiz-Blanco, S. 2014. Women on boards: do they affect sustainability reporting? *Corporate Social Responsibility and Environmental Management*, *21*(6), 351-364.

Frias‐Aceituno, J. V., Rodriguez‐Ariza, L. & Garcia‐Sanchez, I. M. 2013. The role of the board in the dissemination of integrated corporate social reporting. *Corporate social responsibility and environmental management*, *20*(4), 219-233.

Galbreath, J. 2011. Are there gender-related influences on corporate sustainability? A study of women on boards of directors. *Journal of Management & Organization*, *17*(1), 17-38.

Grosser, K. & Moon, J. 2005. The role of corporate social responsibility in gender mainstreaming. *International Feminist Journal of Politics*, *7*(4), 532-554.

Hafsi, T. & Turgut, G. 2013. Boardroom diversity and its effect on social performance: Conceptualization and empirical evidence. *Journal of business ethics*, *112*(3), 463-479.

Harrison, J. S., Bosse, D. A. & Phillips, R. A. 2010. Managing for stakeholders, stakeholder utility functions, and competitive advantage. *Strategic Management Journal*, *31*(1), 58-74.

Hefferman, M. 2002. Exhibit A: The female CEO. *Fast Company*, 61, 58–66.

Hillman, A. J. & Dalziel, T. 2003. 'Boards of Directors and Firm Performance: Integrating Agency and Resource Dependence Perspectives', *Academy of Management Review* 28, 383–396.

Hillman, A. J., Withers, M. C. & Collins, B. J. 2009. Resource Dependence Theory: A Review. *Journal of Management*, *35*(6), 1404-1427.

Isenmann, R., Gómez, J. M. & Supke, D. 2011. Making Stakeholder Dialogue for Sustainability Issues Happen-Benefits, Reference Architecture and Pilot Implementation for Automated Sustainability Reporting a La Carte. In *System Sciences (HICSS), January 2011, 44th Hawaii International Conference on* (pp. 1-11). IEEE.

Kaczmarek, S., Kimino, S. & Pye, A. 2014. Interlocking directorships and firm performance in highly regulated sectors: the moderating impact of board diversity. *Journal of Management & Governance*, *18*(2), 347-372.

Kim, E. E. K., Mattila, A. S. & Baloglu, S. 2011. Effects of gender and expertise on consumers' motivation to read online hotel reviews. *Cornell Hospitality Quarterly*, *52*(4), 399-406.

King Committee. 2002. ***King reports on corporate governance for South Africa*.** Johannesburg: Institute of Directors

Kirkpatrick, G. 2009. *Corporate governance lessons from the financial crisis* (Vol. 1). Financial Market Trends: OECD, available at: http://www.oecd.org/finance/financial-markets/42229620.pdf [accessed Dec 26, 2014].

Kramer, V. W., Konrad, A. M., Erkut, S. & Hooper, M. J. 2006. *Critical mass on corporate boards: Why three or more women enhance governance* (pp. 2-4). Wellesley Centre for Women: Washington. Available at: http://www.ionwomen.org/wp-content/uploads/2010/12/criticalmass.pdf [accessed Dec 28, 2014].

Krumsiek, B. J. 1997. The emergence of a new era in mutual fund investing: Socially responsible investing comes of age. *The Journal of Investing*, *6*(4), 25-30.

Lämsä, A. M., Vehkaperä, M., Puttonen, T. & Pesonen, H. L. 2008. Effect of business education on women and men students' attitudes on corporate responsibility in society. *Journal of Business Ethics*, *82*(1), 45-58.

Liao, L., Luo, L. & Tang, Q. 2014. Gender diversity, board independence, environmental committee and greenhouse gas disclosure. *The British Accounting Review*. doi:10.1016/j.bar.2014.01.002

Lückerath-Rovers, M. 2013. Women on boards and firm performance. *Journal of Management & Governance*, *17*(2), 491-509.

Mahadeo, J. D., Soobaroyen, T., & Hanuman, V. O. (2012). Board composition and financial performance: Uncovering the effects of diversity in an emerging economy. *Journal of business ethics*, *105*(3), 375-388.

Manetti, G. 2011. The quality of stakeholder engagement in sustainability reporting: empirical evidence and critical points. *Corporate Social Responsibility and Environmental Management*, *18*(2), 110-122.

Merkl-Davies, D.M., Brennan, N.M. and Vourvachis, P. 2011, 'Text Analysis Methodologies in Corporate Narrative Reporting Research' (paper presented at 23rd CSEAR International Colloquium, St Andrews, September).

Miller, T. & Triana, M. D. C. 2009. Demographic diversity in the boardroom: Mediators of the board diversity—firm performance relationship. *Journal of Management Studies*, 46: 755-786.

Nielsen, S. & Huse, M. 2010. The contribution of women on boards of directors: Going beyond the surface. *Corporate Governance: An International Review*, *18*(2), 136-148.

Ntim, C. G. & Soobaroyen, T. 2013. Black economic empowerment disclosures by South African listed corporations: The influence of ownership and board characteristics. *Journal of business ethics*, *116*(1), 121-138.

Ntim, C. G., Opong, K. K. & Danbolt, J. 2012. The relative value relevance of shareholder versus stakeholder corporate governance disclosure policy reforms in South Africa. *Corporate Governance: An International Review*, *20*(1), 84-105.

Parkinson, J. 1993. Corporate Power and Responsibility: Issues in the Theory of Company Law, Oxford, Oxford University Press.

Post, C., Rahman, N. & McQuillen, C. 2014. From board composition to corporate environmental performance through sustainability-themed alliances. *Journal of Business Ethics*, 1-13.

Post, C., Rahman, N. & Rubow, E. 2011. Green governance: Boards of directors' composition and environmental corporate social responsibility. *Business & Society*, *50*(1), 189-223.

Setó-Pamies, D. 2013. The Relationship between Women Directors and Corporate Social Responsibility. *Corporate Social Responsibility and Environmental Management*, DOI: 10.1002/csr.1349.

Solomon, J. & Maroun, W. 2012. Integrated reporting: the influence of King III on social, ethical and environmental reporting, available at: http://research-repository.st-andrews.ac.uk/bitstream/10023/3749/1/ACCA-2012-Integrated-Reporting.pdf [accessed Jan 6, 2015].

Suk, J. C. 2012. Gender parity and state legitimacy: From public office to corporate boards. *International journal of constitutional law*, *10*(2), 449-464.

Walls, J. L., Berrone, P. & Phan, P. H. 2012. Corporate governance and environmental performance: Is there really a link? *Strategic Management Journal*, *33*(8), 885–913

Wang, T. & Hsu, C. 2013. Board composition and operational risk events of financial institutions. *Journal of Banking & Finance*, *37*(6), 2042-2051.

Williams, R. 2003. Women on Corporate Boards of Directors and their Influence on Corporate Philanthropy. Journal of Business Ethics, No 42, pp. 1-10.

Williams, R. J. 2003. Women on corporate boards of directors and their influence on corporate philanthropy. *Journal of Business Ethics*, *42*(1), 1-10.

Yelkikalan, N. & Köse, C. 2012. The effects of the financial crisis on corporate social responsibility. *International Journal of Business and Social Science*, *3*(3), 292-300.

AUD002 Carbon Emissions and firm financial performance in JSE Socially Responsible Investment (SRI) index consistent performers

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Abstract

Environmental management has become a critical part of the operations of major firms across the globe. Firms in South Africa are no exception. The need to satisfy stakeholders has led to firms adopting environmentally friendly initiatives such as carbon emissions. This paper explores the impact of these carbon emissions on firm financial performance. Using panel data analysis, the carbon emissions of selected JSE SRI Firms are tested if they impact firm financial performance. Preliminary findings suggest that there is a negative association between carbon emissions and firm financial performance in these firms. Close scrutiny of the integrated financial reports and sustainability reports indicates a moral obligation for the firms to reduce their carbon emissions as well as pressure from authorities. The paper concludes by offering an agenda for further research to bridge the gap in knowledge in this critical area.

Keywords: Carbon Emissions, Firm financial performance, JSE SRI, Panel data analysis, South Africa

Introduction

There are contemporary environmental and ecological problems faced by mining firms within the communities they operate in (Evangelinos and Oku, 2006; Garvin *et al*., 2009; and Mutti *et al*., 2011). This has often resulted in corporate reactive measures to settle environmental problems meted to communities or in cleaning the environment (Garvin *et al*., 2009). However, what is required are proactive Environmental Management Practices (EMP) to curtail the occurrence of environmental problems.

South Africa is one of the emerging economies in which resultant swift growth has been accompanied by severe environmental degradation, leading to illnesses and premature deaths (Shaw, 2012). Mining firms have been critiqued for apparent environmental impact, and corporate environmental neglect has been widely condemned for its negative impact on climate change, for which Brazil, Russia, India, China and South Africa (the BRICS countries) has raised alarms (Shaw, 2012).

In their study, Evangelinos and Oku (2006); Ngwakwe (2009); and Lee (2012) found that the level of corporate apathy towards environmental responsibility is high. Consequently other researchers have engaged in discovering what makes firms to become environmentally responsible (Lee & Hutchinson, 2005; Setthasakko, 2007; Zhang *et al*., 2008; and Artiach *et al*., 2010). Amongst others, it is found that financial performance tend to motivate firms to embark on environmental management (McGuire, *et al.*, 1988; Barnett, 2005; and Artiach *et al.*, 2010); but these studies were conducted overseas. Environmental related research in South African focuses more on disclosure such as (De Villiers & Barnard, 2000; Antonites & De Villiers, 2003; De Villiers, 2003; Hamann, 2004; and Mitchell & Hill, 2010), but none of these earlier studies has looked into the effect of mining firms' carbon emissions and its effect on Return On Equity (ROE) in the Republic of South Africa. This study therefore has become important to fill this gap and in doing so, add to existing literature on Environmental Management Practices and firm financial performance.

Legislative framework

There are many policies, legislative and strategic frameworks governing environmental management in South Africa. South Africa has numerous Acts that affect environmental management and related issues. Some of these Acts in question include:

- The Hazardous Substances Act (Act 5 of 1973)
- The Occupational Health and Safety Act (Act 85 of 1993)
- The South African Constitution (Act 108 of 1996)
- The Municipal Structures Act (Act 117 of 1998)
- The National Environmental Management Act (Act 107 of 1998)
- The National Water Act (Act 36 of 1998)
- The Municipal Systems Act (Act 32 of 2000)
- The Mineral and Petroleum Resources Development Act (Act 28 of 2002)
- The Health Act (Act 63 of 2003)
- The Air Quality Act (Act 39 of 2004)
- The National Environmental Management: Waste Act, 2008 (Act 59 of 2008)

Other appropriate frameworks include the Draft White Paper on Integrated pollution and Waste Management for South Africa issued in 1998. Of relevance to this paper are the South African Constitution (Act 108 of 1996), Draft White Paper on Integrated Pollution and Waste Management for South Africa (1998), National Environmental Management Act (Act 107 of 1998), Mineral and Petroleum Resources Development Act (Act 28 of 2002), Air Quality Act (Act 39 of 2004) and the National Environmental Management Waste Act 59 of 2008 and the National Waste Management Strategy (2011). However, the acts that have a direct bearing on this study are briefly discussed below.

The South African Constitution (Act 108 of 1996)

The supreme law of South Africa, the constitution sets out under the Bill of Rights in sub-section 24 that South Africans have a right to an environment that is not detrimental to their health and well-being and that this environment ought to be preserved for current and future generations through legislation and other means.

National Environmental Management Act (South Africa, 1998)

The National Environmental Management Act (NEMA) is the key act that has led to the development of legislation, policies and self-regulatory frameworks regarding environmental management. As stipulated by the constitution in Chapter 2, South Africans have a right to a healthy environment. This Act ensures that they indeed enjoy the right to a healthy environment by promoting environmental management as a means of having a healthy environment (Republic of South Africa, 1998). The act further provides for the creation of environmental management plans, which set out in detail the policies, plans, practices and priorities that an organisation uses as a guideline to maintain and protect the environment from possible degradation (Republic of South Africa, 1998). It also calls for an integrated approach to environmental management, acknowledging that all aspects of the environment are intertwined and that the best possible decisions must be made with regards to evaluating potential environmental choices (Republic of South Africa, 1998). South African mining firms hence use the act to enact their own environmental self-regulation. Together with international benchmarks, this leads them into adopting Environmental Management Practices that are at the heart of this study.

Theoretical framework

The study is anchored on two theories, namely, the Legitimacy theory and the Stakeholder theory. The figure below depicts Legitimacy theory in the context of Environmental Management Practices, particularly carbon emissions:

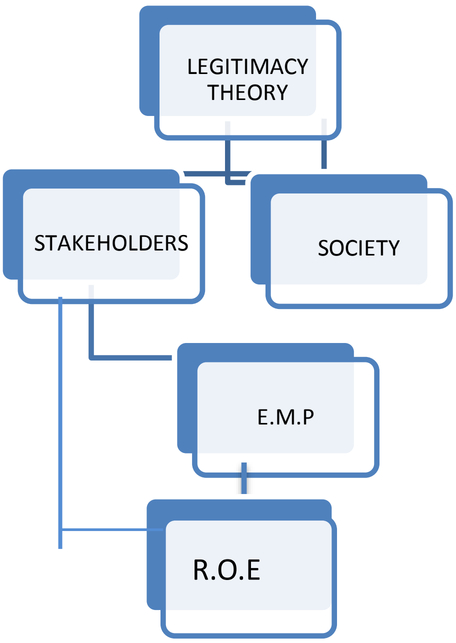

Figure 1: Legitimacy theory in the context of Environmental Management Practices

Legitimacy theory

This theory states that firms cannot continue to exist and thrive if their thinking and methods are contrary to those of the society in which they operate (Deegan & Rankin, 1996; Wilmshurst & Frost, 2000; O'Donovan, 2002; and Antonites & De Villiers, 2003). According to Suchman (1995:574), legitimacy is defined as "a widely held view that an organisation's actions are acceptable and done in good faith within a socially constructed system of beliefs, norms, values and definitions." Suchman (1995); Tilling & Tilt (2010); and Mahadeo *et al.,* (2011) argue that legitimacy is viewed as a critical tool that has an inherent value which has to be preserved and maintained to guarantee acceptance and support from stakeholders.

Owen (2008) contends that a major number of studies related to corporate social and environmental reporting have used legitimacy theory as their primary explanatory impetus. Organisations are in an on-going quest to show that their operations are in conformity with society's expectations and norms. High risk organisations whose activities are likely to have an impact on the environment, such as mining and industrial companies, are strong proponents of legitimacy. This enables these firms to have society's acceptance of their activities (LIM, *et al.,* 2010). According to Buhr (1998), organisations and their related accounting systems carry out their activities with an economic, political and social context.

The operations and existence of an organisation is dependent on how the organisation maintains this social contract and may threaten the organisation should the society deem a breach in this contract (Matthews, 1993; and Deegan, 2002). If there is dissatisfaction with how organisations carry out their operations, society can revoke this contract and hamper an organisation's ability to continue existing (Matthews, 1993; and Deegan, 2002). Deegan *et al.* (2002) argued in line with previous authors such as (Gray *et al.*, 1996; Deegan, 2002; Bebbington *et al.*, 2008; and Cho *et al.*, 2012) that legitimacy theory represented the idea of a social contract between an organisation and society. Bebbington *et al.* (2008) and Cho *et al.* (2012) were of the view that organisational managers utilised strategies that showed an organisation's efforts towards conforming within the accepted norms of society.

Deegan *et al.,* (2002) further argued that the relationship between society and organisations was dynamic; thereby requiring organisations to be cognizant of the expectation placed by this implied 'social contract and had to always operate with full responsibility. As a result of increased community scrutiny, cognizance and concern for environmental impacts as a result of organisational operations, legitimacy inclines organisations towards taking the appropriate measures that will ensure that their operations are in line with broader societal views (Ahmad & Sulaiman, 2004).

In their work, Mobus (2005) explored compulsory environmental disclosures in a legitimacy theory perspective and Showed that organisational legitimacy was a much broader concept, within which aspects like environment management contributed to the concept. Mobus (2005) further argued that the concept of legitimacy was more generalised than narrowed down to any particular circumstance and that legitimacy could not be sustained without consistent adherence to specific ideals, norms and values. Once lost, regaining legitimacy is a tedious task on the part of organisations, who may have lost their acceptance and standing in society (Mobus, 2005). Echoing other authors, Magness

(2006) views legitimacy as a social contract existing between communities and organisations; placing the burden on organisations to act in accordance with acceptable norms and ideals. Legitimacy theory argues that managers in organisations use reporting to form an impression on the part and obligation of the organisation to stakeholders (Magness, 2006). Tilling and Tilt (2010) examined the legitimacy theory with regards to CSR reporting in a tobacco firm. They argued that legitimacy as a theory is used to explain corporate behaviour. Given the nature of the industry under study, threats to organisational legitimacy are regarded as high and as a result, the evolving nature of legitimacy as a concept is studied (Tilling & Tilt, 2010).

Legitimacy is a seen as an integral resource to an organisation (Hearit, 1995; and Tilling & Tilt, 2010). Certain activities and actions are closely related to it and have a direct impact on the levels of legitimacy. They can either increase or decrease this resource with direct consequences for an organisation. High legitimacy is good for an organisation, increasing acceptance with society and improved reputation for the organisation. Low levels of legitimacy on the other hand present a danger to the good standing of organisation in the eyes of society and a direct threat to their continued operations (Tilling & Tilt, 2010). Mäkelä and Näsi (2010) linked the concept of social contract to legitimacy. As stated in previous researchers by Matthews (1993) and Deegan (2002), legitimacy was viewed as a social contract between organisation and society, with a weight of expectation placed highly on the organisation to conform to accepted norms and ideals. Mäkelä and Näsi (2010) therefore argued that legitimacy and social contracts were essential for the good standing of organisations in societies.

Legitimacy theory is applicable to this study given that selected mining firms appear to have realised that they cannot operate without attending to the demands of society. Organisational legitimacy is increasingly adopting Environmental Management Practices as a critical component. Perceptions and norms from communities are increasingly taking into account any detrimental actions as a result of an organisation's activities. One way to maintain a social contract that is legitimate is by engaging in voluntary Environmental Management Practices (EMP) (Mobus, 2005). Thus mining firms in South Africa have a duty to legitimise their operations by engaging in Environmental Management Practices such as carbon emission reduction.

Stakeholder theory

According to Mutti *et al.*, (2011), the Stakeholder theory stipulates that firms are obliged to distribute benefits to all stakeholders, rather than to only the shareholders and customers. Elijido-Ten (2007) contends that Stakeholder theory posits that a firm's success is dependent how successfully it manages the relationships that it forms with a variety of stakeholders. Other researchers such as Donaldson and Preston (1995); Jamali *et al.* (2008); and Mahadeo *et al.* (2011) argue that Stakeholder theory posits an alignment of two disparities; an ethical and an instrumental branch. These two branches are relevant in the theoretical framework governing this research. The ever-evolving nature of the business world has led to an increasing need for organisations to acknowledge their responsibility to a host of stakeholders other than the owners/investors and to provide solutions to problems that may arise due to company activities. This is an area that the Stakeholder theory is applied (Elijido-Ten, 2007).

According to Polonsky (1995), firms must be cognizant of their duty to numerous internal and external stakeholders. They cannot operate without putting the needs of these stakeholders at the forefront. Given the diverse needs of different stakeholders, the theory suggests that firms must take into account these needs and meet the minimal expectations required of them by the stakeholders. In their critique of Stakeholder theory, Key (1999) argued that Stakeholder theory was an all-encompassing model that could be used to explain organisational behaviour. Freeman (1984) saw Stakeholder theory in the form of an actor/environment relationship. He argued that that the actors, both internal and external were directly affected by the operating environment of the firm which resulted in the theory that organisations had to perform to the expectations of all stakeholders rather that the traditional economic approach focussing on shareholders alone (Freeman, 1984; and Key, 1999).

The figure below shows Stakeholder theory in the context of Environmental Management Practices. Based on what is in the above literature, Stakeholder theory can be within two branches; ethical and instrumental branch (Donaldson & Preston, 1995; Jamali *et al.* 2008; and Mahadeo *et al.* 2011). Ethical branch relates to the moral obligations of organisations towards their environment resulting in these Environmental Management Practices. Instrumental branch refers to the role that management has as both custodians of firms' financial performance (equity) and the environment (Environmental Management Practices).

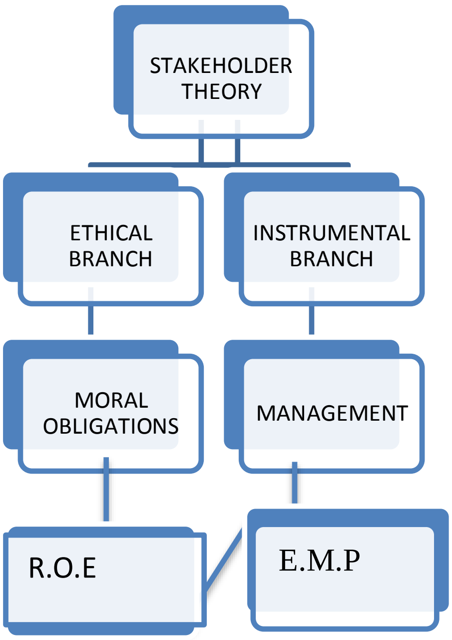

Figure 2: Stakeholder theory in the context of Environmental Management Practices

Therefore, the role of stakeholders cannot be ignored in organisational activities. The mining firms are obliged to spend on Environmental Management Practices so as to benefit the local communities in which they operate. Therefore there is a need to show how these Environmental Management Practices impact firm financial performance in the South African mining industry.

Related Literature

Assumptions have been made that Environmental Management Practices (EMP) and firm performance are unrelated and have nothing in common (Slater & Gilbert, 2004). Most of the existing literature on Environmental Management Practices (EMP) has focused on the relationship between corporate sustainability performance, corporate financial performance and the quality of environmental management reports (Al-Tuwaiji *et al*., 2004). Over the years, different hypotheses have emerged from researchers aimed at addressing the relationship between corporate environmental performance and firm performance. These hypotheses suggest a negative, neutral or positive relationship between the aforementioned variables (Artiach *et al*., 2010).

One perspective states that there is a negative relationship between the two variables as reported in previous studies (Alexander & Bucholz, 1978; Aupperle, *et al*., 1985; McGuire *et al*., 1988; Barnett, 2005; Becchetti, *et al*., 2005; Cho & Paton, 2007; and Artiach *et al*., 2010). A common reason found to cause such a negative relationship is the costs involved in adopting more environmentally friendly practices which results in resource distribution away from investors to external stakeholders such as local communities (Aupperle *et al*., 1985; McGuire *et al*., 1988; Barnett, 2005; and Artiach *et al*., 2010).

Another view suggests that Environmental Management Practices (EMP) and firm performance have no association (Ullmann, 1985; and Artiach *et al*., 2010). The argument raised here is that this relationship is difficult to ascertain due to the possibilities of numerous intervening influences which pose a challenge for control. This, coupled with inadequate theoretical support, was deemed to be too much for anyone to expect a relationship between Environmental Management Practices and firm performance (Artiach et al., 2010). A more recent suggestion to explain the lack of relationship found in previous studies is failure on the part of early researchers to control for firm size and industry (Paten, 2002; and De Villiers & Van Staden, 2011). However, contrary to these negative findings, other researchers maintain that Environmental Management Practices and firm performance are positively associated (Alexander & Bucholz, 1978; Waddock & Graves, 1997; Al-Tuwaiji *et al*., 2004; Barnett, 2005; Clarkson, *et al*., 2006; Clarkson *et al*., 2008; and Artiach *et al*., 2010).

Previous research findings identify various factors in determining a positive relationship between Environmental Management Practices and firm performance. Thus, some find that the financial rewards of engaging in Environmental Management Practices outweigh the costs involved in the long run (McGuire *et al*., 1988; and Barnett, 2005) and investing in Environmental Management Practices may result in improved relationships with stakeholders such as local communities, lenders and governments. Similarly, other findings hold that environmental management investment results in improved firm performance by managing stakeholders (Artiach *et al*., 2010). Another perspective, also known as the resource view, suggests that firms that invest in Environmental Management Practices experience increased resources (Alexander & Bucholz, 1978; Waddock & Graves, 1997; Clarkson *et al*., 2006; and Artiach et al., 2010). Montabon *et al*. (2007) examined the relationship between Environmental Management Practices and firm performance. They established that a significant and positive relationship exists between Environmental Management Practices and measures of firm performance.

Montabon *et al*. (2007) also examined the impact of carbon emissions on firm financial performance. They found a significant relationship between carbon emissions and firm financial performance. A comprehensive study on the impact of waste management and carbon emissions on firm financial performance was carried out by Iwata and Okada (2011). They examined this relationship in Japanese manufacturing firms for a five-year period. Using Return On Equity (ROE) as one of the measures of firm financial performance, they found that the impact of waste management on firm financial performance was not statistically significant. On the other hand, Iwata and Okada (2011) also studied the impact of carbon emissions on firm financial performance. They employed Return On Equity as one of their measures of firm financial performance and discovered that carbon emission reductions increase long-run firm financial performance.

Hart and Ahuja (1996) studied the relationship between emissions reduction and firm financial performance. They found that, using Return On Equity as one of their variables, a relationship between emissions reduction and Return On Equity could only be partially confirmed. Soyka and Powers (2002) studied the effects of energy efficiency on corporate profitability performance. They found evidence suggesting that energy efficient strategies create remarkable new corporate wealth. They also discovered that investments in energy saving programs by firms used in their study resulted in statistically significant positive impacts on their operating margins. In their work, Delmas and Nairn-Birch (2010) examined the impact of greenhouse gas emissions (GHG) on firm financial performance. Interestingly, their findings indicated that increasing carbon emissions resulted in a positive impact on firm financial performance when employing accounting based measures of financial performance, while the same linkage was negative when using market based measures of firm financial performance.

In their study, Busch and Hoffmann (2011) examined the linkage between carbon emissions and carbon management strategies and corporate financial performance. They found that when using carbon emissions as outcome-based measurement, the relationship between carbon emissions and corporate financial performance was positive. However, when they used carbon management strategies as a process based measure, it resulted in a negative association between their corporate environmental performance and financial performance. Davidsdottir and Fisher (2011) examined the link between carbon emissions and economic performance in the United States. Using panel analysis, they examined any link between the two variables, focusing on the direction of causality between the two. They discovered that a two-directional significant relationship did exist between carbon emissions and economic performance. Davidsdottir and Fisher (2011) concluded that their findings made it possible for States to introduce sector-unique policies that could reduce energy and carbon emissions intensity and improve fiscal performance at the same time.

Yu *et al.* (2009) studied the greenness strides by European based firms from a resource efficiency perspective. Their aim was to determine whether or not a link existed between environmental effects and financial performance. Yu *et al.* (2009) also attempted to examine if firms that showed more drive towards environmental management showed a more impactful positive relationship between environmental performance and financial performance that those that showed a lesser drive. Using correlation analysis as their methodology, Yu *et al.* (2009) found that no positive association existed between environmental performance and firm financial performance. They concluded that those European based companies that had superior green efforts did not have any financial rewards to show for their efforts. Yang *et al.* (2011) studied the impact of lean manufacturing and environmental management on business performance. Within this study, Environmental Management Practices were measured against market and financial performance and Yang *et al.* (2011) discovered that a negative relationship existed between the two variables. Salama (2005) used regression analysis to measure the impact of environmental performance on financial performance. The findings showed that a positive relationship existed between environmental performance and firm financial performance.

Klassen and McLaughlin (1996) proposed a theoretical model aimed at establishing a linkage between strong environmental management and improved future financial performance. Using empirical methods, Klassen and McLaughlin (1996) discovered that significant positive financial returns were measured for strong environmental management while significant negative financial returns were measured for weak environmental management. Horváthová (2010) argued that the inconclusiveness of results regarding the impact of environmental performance on financial performance was due to underlying factors, such as industry uniqueness and firm size. The results of her study showed that the probability of obtaining a negative association between Environmental Management Practices and financial performance drastically increases when using correlation coefficients while the use of panel data techniques and multiple regressions had a neutral effect on the outcomes.

King and Lenox (2001) investigated whether or not a causal relationship existed between firm's Environmental Management Practices and firm financial performance. The main thrust of their study was to test whether other underlying firm attributes had a direct effect on this relationship. Applying empirical methods, King and Lenox (2001) discovered that a link existed between a measure of Environmental Management Practices and firm financial performance, but failed to illustrate the direction of this linkage. Wingard and Vorster (2001) performed an in-depth examination on the financial performance of environmentally responsible South African listed companies. Using correlation analysis, they argued that a positive relationship existed between the environmental responsibility and financial performance of South African listed companies. On the other hand, in their study, Oberholzer and Prinsloo (2011) used GHG emission, water usage and energy usage as environmental variables and found that gold-mining firms did not realise economic gain from efficient use of their environmental variables.

Methodology

This paper made use of mixed methods to test for any impact of carbon emissions on firm financial performance. Mixed methods are a method of research that employs both quantitative and qualitative methods (Buslera, 2013 & Creswell, 2013). Quantitative data analysis made use of the Panel OLS method. Panel least squares is a method useful for cross sectional time-series data (Baltagi, 2001; Nerlove, 2002; Arellano, 2003; Frees, 2004; Hsiao, 2007; Westerlund & Basher, 2007 & Mark & Sul, 2012). A qualitative review of integrated and sustainability reports of the participating firms was also used in an attempt to establish any linkage between carbon emissions and firm financial performance.

Population and sample

This paper studied mining firms listed on the JSE Socially Responsible Index (SRI). These firms were selected due to their high ranking in terms of triple bottom line reporting. The best performers for the time period 2007 to 2011 were chosen as a sample for the study. This time frame allowed for a comparable set of data to be drawn and used in this study. The firms used in the study are AAC, AGA, AM, EXX, GF, IMP, KUM, LON & MER respectively.

Data collection

In this study, the data used was obtained from the firms' annual integrated reports and sustainability reports. These are found in public domain on the companies' websites. Pseudonyms were used as a means to ensure commercial confidentiality of the firms.

The variables represented were; carbon emissions (CE) and firm financial performance represented by return on equity (ROE). Return on equity was the dependent variable while carbon emissions represented the independent variable. The data used in the analysis is shown in table one below. This data was sourced from the annual integrated reports and sustainability reports of the companies under study.

Obs	ROE	CE
AAC – 07	33.6	25.40
AAC – 08	28.1	19.80
AAC – 09	10.4	18.90
AAC – 10	21.4	20.00
AAC – 11	11.3	18.80
AGA – 07	-26.0	4.51
AGA – 08	-45.9	4.55
AGA – 09	-8.6	4.79
AGA – 10	3.1	4.82
AGA – 11	30.9	4.51
AM – 07	26.2	2.56
AM – 08	39.0	2.61
AM – 09	-1.8	2.65
AM – 10	6.2	4.44
AM – 11	-0.2	4.49
EXX – 07	15.0	1.50
EXX – 08	30.0	1.80
EXX – 09	19.0	2.30
EXX – 10	34.0	2.20
EXX – 11	36.0	2.10
GF – 07	7.1	5.20
GF – 08	11.3	5.10
GF – 09	4.3	4.90
GF – 10	4.4	5.40
GF – 11	16.0	5.20
Imp – 07	52.3	3.10
Imp – 08	37.9	3.20
Imp – 09	13.9	3.40
Imp – 10	11.5	3.80
Imp – 11	15.2	4.00
Kum – 07	118.4	5.00
Kum – 08	106.8	5.50
Kum – 09	98.4	6.80
Kum – 10	99.5	8.00
Kum – 11	108.3	0.91
Lon – 07	17.3	1.63
Lon – 08	21.8	1.61
Lon – 09	11.5	1.60
Lon – 10	3.9	1.59
Lon – 11	9.6	1.61
Mer – 07	16.7	1.90
Mer – 08	41.5	3.10
Mer – 09	6.5	2.20
Mer – 10	10.8	3.00
Mer – 11	4.4	2.30

Table 1: Data showing carbon emissions and return on equity

Analysis and discussion

The quantitative data analysis used panel data ordinary least squares (OLS) method to test for any relationship between carbon emissions and firm financial performance. The adjusted R squared had to be interpreted with confidence levels set at 95%. This meant that the adjusted R squared had to be lower than 5% to show any significant link between carbon emissions and firm financial performance. Table two shows the descriptive statistics of the data used in the study.

	ROE	CE
Mean	24.68889	5.395111
Median	15.20000	3.800000
Maximum	118.4000	25.40000
Minimum	-45.90000	0.910000
Std. Dev.	33.81822	5.706024
Skewness	1.293449	2.251570
Kurtosis	4.764866	6.953510
Jarque-Bera	18.38773	67.32846
Probability	0.000102	0.000000
Sum	1111.000	242.7800
Sum Sq. Dev.	50321.56	1432.583
Observations	45	45

Table 2: Descriptive statistics of the variables

The panel data analysis presented the following results depicted in table three below
Dependent Variable: ROE
Method: Panel Least Squares
Date: 10/02/15 Time: 16:47
Sample: 2007 2011
Periods included: 5
Cross-sections included: 9
Total panel (balanced) observations: 45

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CE	0.155351	0.903511	0.171941	0.8643
C	23.85076	7.053318	3.381494	0.0015

R-squared	0.000687	Mean dependent var	24.68889
Adjusted R-squared	-0.022553	S.D. dependent var	33.81822
S.E. of regression	34.19744	Akaike info criterion	9.945605
Sum squared resid	50286.99	Schwarz criterion	10.02590
Log likelihood	-221.7761	Hannan-Quinn criter.	9.975539
F-statistic	0.029564	Durbin-Watson stat	0.221491
Prob(F-statistic)	0.864291		

Table 3: Panel data results

From the table above, it can be seen that the adjusted R squared is -0.022553. Interpreting the adjusted R squared is mentioned in Data and statistical services (2013) and University of Texas (2013). The data above shows that there is a negative association between carbon emissions and firm financial performance represented by return on equity, consistent with the findings of Barnett (2005) and Artiach *et. al*. (2010). A possible reason for these findings could be other variables that may affect firm financial performance such as firm size.

A qualitative review of the firms' integrated and sustainability reports showed that all firms reported on their carbon emissions to conform to current international trends. Close scrutiny of the annual integrated and sustainability reports suggests that the need to conform to stakeholder expectations as well as pressure from authorities has resulted in the firms reducing their carbon emissions. This is evident across all the firms under the study. Financial motives were mentioned in five firms as reasons for carbon emission reductions. This was in done in order to reduce potential financial costs owing to uncontrolled emissions.

Conclusions, limitations and recommendations

This study attempted to explore if there was any link between carbon emissions reduction and firm financial performance in selected JSE SRI listed mining firms. Panel data analysis and qualitative review of company reports was used. It was discovered that there is a negative link between carbon emissions reduction and firm financial performance represented by return on equity. However, moral obligations and pressure from authorities were the reasons behind the carbon reduction, instead of potential financial benefits. The number of firms studied constituted only a small proportion of the total number of mining firms currently operating in South Africa. As such, the results of the study cannot be generalised across the entire mining industry in South Africa.

As the world continues to drive towards development, it will be necessary for further study in this field to determine the factors that drive environmental management. Areas for further research may include examining other environmental management practices such as energy efficiency and water efficiency. This will help bridge the gap in knowledge currently existing. The government must provide incentives for all firms that are operating in a green way. This will also provide impetus for firms to operate in an environmentally sustainable manner and preserve the fragile environment that we all live in.

References

Ahmad, N.N.N., & Sulaiman, M. 2004. Environmental Disclosures in Malaysian Annual Reports: A Legitimacy theory perspective. *ICJM*. 14 (1): 44-58.

Alexander, G.J., & Buchholz, RA. 1978. Corporate Social Responsibility and Stock Market Performance. *Academy of Management Journal.* 21 (3): 479-485.

Al-Tuwaiji, S.A., Christensen, T.E., & Hughes, K.E. 2004. The Relationships among Environmental Disclosure, Environmental Performance, and Economic Performance: A simultaneous equations approach. *Accounting, Organizations and Society*. 29 (56): 447-471.

Arellano, M. 2003. *Panel Data Econometrics.* Oxford: Oxford University Press.

Artiach, T., Lee, D., Nelson, D., & Walker, J. 2010. The Determinants of Corporate Sustainability Performance. *Accounting and Finance.* 50 (20): 31-51.

Antonites, E., & De Villiers, C.J. 2003. Trends in South African Corporate Environmental Reporting: A research note. *Meditari Accounting Research.* 11 (2003): 1-10.

Aupperle, K.E., Carroll, A.B., & Hatfield, J.D. 1985. An Empirical Examination of the Relationship between Corporate Social Responsibility and profitability. *Academy of Management Journal.* 28 (2): 446-463.

Baltagi, B.H. 2001. *Econometric Analysis of Panel Data*, 2nd edition. New York: Wiley.

Barnett, M.L. 2005. Stakeholder Influence Capacity and the Variability of Financial Returns to Corporate Social Responsibility. *Academy of Management Review. Working paper*. Available at: http://www.ssrn.com/abstract=853086 (date accessed 16th April, 2012).

Bebbington, J., Larrinaga-González, C., & Moneva-Abadía, J.M. 2008. Legitimating Reputation/the Reputation of Legitimacy Theory. *Accounting, Auditing and Account ability Journal*. 21 (3): 371-374.

Becchetti, L., Di Giacomo, S., & Pinnachio, D. 2005. Corporate Social Responsibility and Corporate Performance: Evidence from a panel of U.S listed companies. *Working paper*, (CEIS).Available: http://www.ssrn.com/abstract=871402 (date accessed: 16th April, 2012.)

Buhr, N. 1998. Environmental performance, legislation and annual report disclosure: the case of acid rain and Falconbridge. *Accounting, Auditing and Accountability Journal*. 11(2): 163-190.
Busch, T., & Hoffmann, V.H. 2011. How hot is your bottom line? Linking carbon and financial performance. Business & Society. 50 (2): 233-265.
Buslera, C. 2013. Using a mixed methods approach to enhance and validate your research.pdf. Notre Dame University. Available at: http://www.ndu.edu.au/C80BD74C-6628-40C5-907D-6C6F7475BE16/FinalDownload/DownloadId-65AF49CAC443FCA738B69FD5219E7C75/C80BD74C-6628-40C5-907D-6C6F7475BE16/downloads/research/ihrr/using_mixed_methods_approach_to_enhance_and_validate_your_research.pdf. (Date accessed: 3rd December, 2013)
Cho, C.H., Freedman, M., & Patten, D.M. 2012. Corporate disclosure of environmental capital expenditures: a test of alternative theories. *Accounting, Auditing and Accountability Journal*. 25(3): 486-507.
Cho, C.H., & Patton, D.M. 2007. The role of environmental disclosures as tools of legitimacy: a research note. *Accounting, Organisations and Society.* 32 (7-8): 639-647.
Clarkson, P., Li, Y., Richardson, G.D., & Vasvari, F.P. 2006. Does it really pay to be green? Determinants and consequences of proactive environmental strategies, *working paper*. Available at: http://www.cifo.uquam.ca/publications/pdf/paper.pdf (date accessed 16th April 2012.)
Clarkson, P., Li, Y., Richardson, G.D., & Vasvari, F.P. 2008. Revisiting the relation between environmental performance and environmental disclosure: an empirical analysis. *Accounting, Organisations and Society.* 33 (3): 303-327.
Creswell, J.W. 2013. *Research Design: Qualitative, Quantitative and Mixed Method Approaches*. 4th edition. United States of America. Sage Publications.
Data & Statistical Services (DSS). 2013. Interpreting regression output. Available at: http://dss.wikidot.com/interpreting-regression-output. (date accessed: 3rd December, 2013).
Davidsdottir, B., & Fisher, M. 2011. The odd couple: The relationship between state economic performance and carbon emissions economic intensity. *Energy Policy*. 39 (2011): 4551-4562.
Deegan, C. 2002. Introduction: the legitimising effect of social and environmental disclosures- a theoretical foundation. *Accounting, Auditing and Accountability Journal*. 15 (3): 282-311.
Deegan, C., & Rankin, M. 1996. Do Australian companies report environmental news objectively? An analysis of environmental disclosures by firms persecuted successfully by the Environmental Protection Authority. *Accounting, Auditing and Accountability Journal.* 9 (2): 50-67.
Deegan, C., Rankin, M., & Tobin, J. 2002. An examination of the corporate social and environmental disclosures of BHP from 1983-1997: a test of legitimacy theory. *Accounting, Auditing and Accountability Journal*. 15 (3): 312-343.

Delmas, M.A., & Nairn-Birch, N.S. 2010. Is the tail wagging the dog? An empirical analysis on corporate carbon footprints and financial performance. UCLA Institute of the environment and sustainability. Working paper series. Working paper #6.pdf. Available at: http://escholarship.org/uc/item/3k89n5b7. (Date accessed 13th August, 2012.)

De Villiers, C.J., & Barnard, P. 2000. Environmental reporting in South Africa from 1994-1999: a research note. *Meditari Accounting Research.* 8 (2000): 15-23.

De Villiers, C.J., & Van Staden, C.J. 2011. Why firms choose to disclose voluntary environmental information. *J.Account Public Policy.* 30 (2011): 504-525.

De Villiers, C.J. 2003. Why do South African companies not report more environmental information when managers are so positive about this kind of reporting? *Meditari Accounting Research.*11 (2003): 11-23.

Donaldson, T., & Preston, L.E. 1995. The Stakeholder theory of the corporation: concepts, evidence and implications. *Academy of Management Review.* 20 (1): 65-92.

Elijido-Ten, E. 2007. Applying Stakeholder theory to analyse corporate environmental performance: evidence from Australian listed companies. *Asian Review of Accounting*. 15 (2): 164-184.

Evangelinos, K.I., & Oku, M. 2006. Corporate Environmental Management and regulation of mining operations in the Cyclades, Greece. *Journal of Cleaner Production.* 14 (2006): 262-270.

Freeman, R.E. 1984. *Strategic management: A stakeholder approach*. Boston: Pitman.

Frees, E.W. 2004. *Longitudinal and panel data: analysis and applications for the social sciences*. United Kingdom. Cambridge University Press.

Garvin, T., McGee, T.K., Smoyer-Tomic, K.E., & Aubynn, E.A. 2009. Community-company relations in gold mining in Ghana, *Journal of Environmental Management.* 90 (2009): 571-586.

Gray, R., Owen, D., & Adams, C.1996. *Accounting & Accountability*.Europe.Prentice Hall.

Hamann, R. 2004. Corporate Social Responsibility, partnerships and institutional change: The case of mining companies in South Africa. *National Resources Forum.* 28 (4): 278-290.

Hart, S.L., & Ahuja, G. 1996. Does it pay to be green? An empirical examination of the relationship between emissions reduction and firm performance. *Business strategy and the environment*. 5 (1996): 30-37.

Hearit, K.M. 1995. Mistakes Were Made': Organizations, Apologia, and Crises of Social Legitimacy. *Communication Studies*. 46 (1-2): 1 - 17.

Hsiao, C. 2007. Panel data analysis- advantages and challenges. Test (2007) 16: 1–22. DOI 10.1007/s11749-007-0046-x.

Horváthová, E. 2010. Does environmental performance affect financial performance? A meta-analysis. *Ecological Economics*. 70 (2010): 52-59.

Investopedia. 2012. *Definition of Return On Equity-ROE*. Available at: http://www.investopedia.com/terms/r/retunonequity.asp#axzz1umifX1p6. (Date accessed: 13th May, 2012.)

Iwata, H., & Okada, K. 2011. How does environmental performance affect financial performance? Evidence from Japanese manufacturing firms. *Ecological Economics.* 70 (2011): 1691-1700.

Jamali, D., Safieddine, A.M., & Rabbath, M. 2008. Corporate Governance and Corporate Social Responsibility Synergies and Interrelationships. *Corporate Governance: An International Review.* 16: 443–459. Doi: 10.1111/j.1467-8683.2008.00702.x

Key, S. 1999. Toward a new theory of the firm: a critique of Stakeholder theory. *Management Decision.* 37 (4): 317-328.

King, A.A., & Lenox, M.J. 2001. Does it really pay to be green? An empirical study of firm environmental and financial performance. *Journal of Industrial Ecology*. 5 (1): 105-116.

Klassen, R.D., & McLaughlin, C.P. 1996. The impact of environmental management on firm performance. *Management Science.* 42 (8): 1199-1214.

Lee, T.M., & Hutchinson, P.D. 2005. The decision to disclose environmental information: a research review and agenda. *Advances in Accounting.* 21 (2005): 83-111.

Lee, L.T.S. 2012. The pivotal roles of Corporate Environmental Responsibility. *Industrial Management and Data Systems.* 112 (3): 466-483.

LIM, S.M., Wilmshurst, T., &Shimeld, S. 2010. Blowing in the wind: legitimacy theory. An environmental incident and disclosure. *Conference Proceedings. APIRA 2010* .12-13 July 2010. Sydney EJ .2010. Refereed Conference Paper.

Magness, V. 2006. Strategic posture, financial performance and environmental disclosure. An empirical test of legitimacy theory. *Accounting, Auditing and Accountability Journal*. 19 (4): 540-563.

Mahadeo, J.D., Oogarah-Hanuman, V., & Soobaroyen, T. 2011. Changes in social and environmental reporting practices in an emerging economy (2004–2007): Exploring the relevance of stakeholder and legitimacy theories. *Accounting Forum.* 35 (2011): 158– 175.

Mäkelä, H., & Näsi, S. 2010. Social responsibilities of MNCs in downsizing operations: A Finnish forest sector case analysed from the stakeholder, social contract and legitimacy theory point of view. *Accounting, Auditing and Accountability Journal*. 23 (2): 149-174.

Mark, N.C., & Sul, D. 2012. When are pooled panel-data regression forecasts lof exchange rates more accurate than the time series regression forecasts? in *Handbook of Exchange Rates* (eds J. James, I. W. Marsh and L. Sarno). NJ, USA. John Wiley & Sons, Inc., Hoboken. Doi: 10.1002/9781118445785.ch9.

Mathews, M.R. 1993. *Socially Responsible Accounting*. UK. Chapman & Hall.

McGuire, J.B., Sundgren, A., & Schneeweis, T. 1988. Corporate Social Responsibility and firm financial performance. *Academy of Management Journal.* 31 (4): 854– 872.

Mitchell, C.G., & Hill, T.R. 2010. An exploratory analysis of stakeholders' expectations and perceptions of corporate social and environmental reporting in South Africa. *SAJAR.* 24 (1): 49-78.

Mobus, J.L. 2005. Mandatory environmental disclosures in a legitimacy theory context. *Accounting, Auditing and Accountability Journal*. 18 (4): 492-517.

Montabon, F., Sroufe, R., & Narasimhan, R. 2007. An examination of corporate reporting, Environmental Management Practices and firm performance. *Journal of Operations Management.* 25 (2007): 998-1014.

Mutti, D., Yakovleva, N., Vasquez-Brust, D., Di & Marco, M.H. 2011. Corporate Social Responsibility in the mining industry: Perspectives from stakeholder groups in Argentina. *Resources Policy* doi:10.1016/j.resourcepol.2011.05.001.

Nerlove, M. 2002. *Essays in panel data econometrics.* Cambridge: Cambridge University Press.

Ngwakwe, C.C. 2009. Environmental responsibility and firm performance: Evidence from Nigeria. *International Journal of Human and Social Sciences.* 4:6 (2009): 384-391.

Oberholzer, M., & Prinsloo, T.F. 2011. Estimating the efficiency of sustainable development by South African mining companies. *J. Hum Ecol*. 36 (3): 179-184.

O'Donovan, G. 2002. Environmental disclosures in the annual report: extending the applicability and predictive power of legitimacy theory. *Accounting, Auditing and Accountability Journal.*15 (3): 344-371.

Owen, D. 2008. Chronicles of wasted time? A personal reflection on the current state of and future prospects for, social and environmental accounting research. *Accountin g, Auditing and Accountability Journal*, 21 (2): 240-267.

Paten, D.M. 2002. The relation between environmental performance and environmental disclosure: a research note. *Accounting, Organisations and Society.* 27 (8): 763-773.

Polonsky, M.J.1995. A stakeholder approach to designing environmental marketing strategy. *Journal of Business & Industrial Marketing.* 10 (3): 29-46.

Republic of South Africa. 1998. National Environmental Management Act, no. 107, 1998, (as amended). Government Gazette No: 19519. Pretoria. Available at: http://www.info.gov.za/view/DownloadFileAction?id=70641. (Date accessed: 14th May, 2012).

Republic of South Africa. 2002. Minerals and Petroleum Resources Development Act, no. 28, 2002. Government Gazette No: 23922. Pretoria. Available at: http://www.info.gov.za/view/DownloadFileAction?id=68062. (Date accessed: 14th May, 2012).

Republic of South Africa. 2008. Minerals and Petroleum Resources Development Amendment Act, no. 49, 2009. Government Gazette no. 32151. Pretoria. Available at: http://www.info.gov.za/view/DownloadFileAction?id=99561. (Date accessed: 14th May, 2012).

Republic of South African Government. 2012. *History of South Africa*. Available at: http://www.info.gov.za/aboutsa/history.htm. (Date accessed: 7th May, 2012).

Salama, A. 2005. A note on the impact of environmental performance on financial performance. *Structural change and economic dynamics.* 16 (2005): 413- 421.

Setthasakko, W. 2007. Determinants of corporate sustainability: Thai seafood processors. *British Food Journal.* 109 (2): 155-168.

Shaw, W. 2012. Will emerging economies repeat the mistakes of their rich cousins? *International economic bulletin*. Available at: http://carnegieendowment.org/2012/0 3/01/will-emerging-economies-repeat-environmental-mistakes-of-their- rich cousins/c9eb. (Date accessed 7th May, 2012.)

Slater, A., & Gilbert, A. 2004. The Evolution of Business Reporting: Make Room for Sustainability Disclosure. *Environmental Quality Management.* Autumn (2004): 41-48.

Soyka, P.A., & Powers, J.R. 2002. Can energy efficiency meaningfully improve corporate profitability? US Environmental protection agency (EPA). Contract No. 68-W5-0068. US Government. Washington D.C.

Suchman, M.C. 1995. Managing Legitimacy: Strategic and Institutional Approaches. *Academy of Management Journal*. 20 (3): 571 - 610.

Tilling, M.V., & Tilt, C.A. 2010. The Edge of Legitimacy: Voluntary social and environmental reporting in Rothmans' 1956-1999 annual reports. *Accounting, Auditing and Accountability Journal*. 23 (1): 55-81.

Ullmann, A.A. 1985. Data in search of a theory: A critical examination of the relationships among social performance, social disclosure and economic performance of U.S firms. *Academy of Management Review.* 10 (3): 540-557.

University of Texas. 2013. Interpreting adjusted R square. Available at: http://www.utexas.edu/courses/schwab/sw388r7/Tutorials/IllustrationofRegressionAnalysis_doc_html/061_Interpreting_Adjusted_R_Square.html. (date accessed: 3rd December, 2013.)

Waddock, S.A., & Graves, S.B. 1997. The corporate social performance-financial performance link. *Strategic Management Journal.* 18 (4): 303-319.

Westerlund, J., & Basher, S.A. 2007. Can Panel Data Really Improve the Predictability of the Monetary Exchange Rate Model? *Journal of Forecasting*. 26: 365–383.

Wilmshurst, T.D., & Frost, G.R. 2000. Corporate Environmental Reporting: A test of legitimacy theory. *Accounting, Auditing and Accountability Journal.* 13 (1): 10-26.

Wingard, H.C., & Vorster, Q. 2001. Financial Performance of Environmentally Responsible South African Listed Companies. *Meditari Accountancy Research*. 9 (2001): 313-332.

Yang, M.G.M., Hong, P., & Modi, S.B. 2011. Impact of Lean Manufacturing and Environmental Management on Business Performance: An empirical study of manufacturing firms. *Int.J. Production Economics*. 129 (2011): 251-261.

Yu, V., Ting, H.I., & Wu, Y.C.J. 2009. Assessing the greenness effort for European firms: a resource efficiency perspective. *Management Decision*. 47 (7): 1065-1079.

Zhang, B., Bi, J., Yuan, Z., Ge, J., Liu, B., & Bu, M. 2008. Why Do Firms Engage in Environmental Management? An empirical study in China. *Journal of Cleaner Production.* 16 (2008): 1036-1045.

AUD006 Impact of Sustainability Reporting on Sustainable Ethical Business Practices: A Review of Sustainability Reports of Selected South African Companies

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Abstract

This paper reviews sustainability reports of selected listed South African companies in relation to extant literature to determine its impact on sustainable ethical business practices. The paper adopted the four key principles of ethical behaviour in the principal-agent relationship as provided by Quinn and Jones (1995) to analyse selected South African firms attempts to conduct their businesses in a sustainably responsible manner using the content analysis method. Findings indicate the difficulty to measure a direct relationship between companies' sustainability reports and improvements to sustainable ethical business practices. The paper concludes that while it is necessary for organizations to comply with sustainability regulations; attempts should be made to ethically integrate and improve conventional business practice in a sustainable manner.

Key words: Sustainability Reporting, Stakeholder theory, King III Code on Corporate Governance, Sustainable ethical business practice

Introduction

Corporate Social Responsibility (CSR) is linked to stakeholder theory and has become a major issue for organizations as a result of sustained pressure for improved environmental performance from lobby groups under the current social climate. But organizations have a moral responsibility to act in an ethical manner by conducting their business in a socially responsible manner to satisfy the interests of all stakeholders. Quinn and Jones (1995) argue that since managers have no special rules that allow them to ignore their moral obligation as agents, they have to adhere to ethical behaviour whether it is profitable or not. Quinn and Jones (1995) then provide four principles to favour their argument for applying ethical behaviour namely avoid harm to others (environmental responsibility), respect the autonomy of others (social responsibility), avoid lying (honesty), and honour agreements (economic responsibility). They claim that the principal-agent relationship could only hold if these principles are adhered to.

Considering that the requirements of the King III Code on the principles of Sustainability Reporting is a positive step to actualise the sustainable development agenda in South Africa, the effect of this required exercise on the society and the environment in relation to sustainable business practice rather than on compliance, is the focus of this study. The question here is whether those organizations that provide sustainability reporting are improving on integrating their conventional business approach by adopting sustainability practices to achieve economic growth. Whether these companies' reasons for disclosure in their sustainability reports are obligatory or voluntary? Moreover, there are skills shortages among existing accountants to provide organisations with reliable sustainability financial and non-financial information for inclusion in annual reports (Jinabhai, 2005). The objective of the study is to review sustainability reports of selected listed South African companies in relation to extant literature to determine its impact on sustainable ethical business practices. The study made use of empirical evidence from secondary sources on selected sustainability reports from selected Johannesburg Stock Exchange (JSE) listed companies complying with the requirements of the King III sustainability reporting code of governance. The rest of the paper is structured as follows: stakeholder theory; the King III Code on the principles of sustainability reporting; sustainability reporting and sustainable ethical business practice; methods; analysis; discussion; and conclusion.

Stakeholder theory

Proponents of normative Stakeholder theory argue that principled moral reasoning should motivate management decisions (Quinn and Jones, 1995). Other proponents indicate that because managers' acts as agents for shareholders, maximising the value of the firm should be the appropriate motivating principle (Quinn and Jones, 1995). But supporters of shareholders wealth maximisation contend that legal, ethical, and social issues should be considered (Lee et al. 2012). For the purpose of clarity, this paper focuses on that aspect of agents' decisions and actions that affects the society in general, that is, sustainability. Sustainability encompasses organizations environmental, social, and economic responsibilities. Conversely, organizations should not only consider satisfying shareholders interest, but uphold the interest of other stakeholders as well. Due to conflicting interests among stakeholders, Argenti (1993) criticises the Stakeholder theory on the ground that it could lead to inefficiency and sub-optimality. He suggests that multi-purpose organizations should transform into single purpose organizations while categorising all stakeholders, except shareholders, into interest groups having stakes in the organization, but having no claim other than that specified in law.

While the Stakeholder theory arises from a social perspective on corporate governance; Freeman (1984) proposed a general theory of the firm which incorporates corporate accountability to a broad range of stakeholders. Likewise, the development of this theory has brought the role of organizations in society under scrutiny on issues such as organizational impact on employees, the environment, local communities and the shareholders (Edgley, Jones & Solomon, 2010). Similarly, social and environmental pressure groups are set to gather information targeted at organizations whose activities are considered unethical towards their stakeholders (Edgley et al. 2010). This information measure the responsiveness of an organization towards fulfilling its moral obligation to society. But such measurements can only be reflected in organizations' annual financial reports which in recent times have integrated social responsibility reports, known as CSR reports.

The King III Code on the principle of Sustainability Reporting

In South Africa, efforts were made to encourage organizations to report on their sustainability practice as stipulated by the King III Code on the principle of Sustainability Reporting (Institute of Directors, IOD, 2009). Sustainability Reporting in South Africa is a requirement by the JSE for listed companies to respond to a combination of societal trends and the concerns of an unsettled international investor community (IOD, 2009). Sustainability reporting is part of a wider corporate governance code; a mechanism instituted as a response to growing concern over the security of investments in South Africa. Also, sustainability reporting has become a useful mechanism for communicating with local stakeholders who challenge businesses on matters pertaining to CSR and other environmental issues (Ingenhoff and Sommer, 2011). Annual sustainability reporting to stakeholders is meant to ensure that organizations are able to reasonably reduce societal conflict while demonstrating that policies, procedures and environmental management systems are in place to help manage organizational and societal challenges (IOD, 2009; Pacheco, Dean & Payne, 2010).

The requirement to report on the social, environmental and economic activities to stakeholders annually by South African companies are on the increase through an integrated reporting system which contains conventional financial information, operational data, and sustainability information (IOD, 2009). More importantly, an integrated reporting system is designed to incorporate social, environmental, and economic performance report into existing conventional financial reporting system to external stakeholders (Gray, 2006). To this end, the International Integrated Reporting Council (IIRC) encouraged a revolutionary change in the reporting systems of organisations to its stakeholders by including their environment activities in current reports (Soyka, 2013).

In South Africa, the King III sustainability reporting is an initiative that requires organisations to report on an annual basis their environmental activities to stakeholders (IOD, 2009). The numbers of South African companies' currently providing sustainability reports under the King III Code has increased considerably to above 420 between 2010 when the code was launched to date (IRAS, 2012). The King III sustainability reporting initiative was meant to improve on the environmental and social performance of organisations in South Africa. But this initiative is stumbling. The first problem with this initiative is the lack of standardised approach to reporting sustainability issues by these organisations (IRAS, 2012).

Organisations may provide sustainability reporting to stakeholders for some of the following reasons: *Good corporate image*: the ability to provide both financial and non-financial data on an organisation's sustainability activities in its annual financial report will improve the organisation's corporate image and sustainable performance (Dey et al. 2011). *Legitimacy*: it ensures that organisations are compliant with the requirements of the King III on sustainability reporting (Castelló & Lozano, 2011; Du & Vieira Jr, 2012). *Stakeholders' retention:* since most investors have become environmentally conscious, a good report and analysis of an organisation's environmental and sustainability impacts in its annual financial reports will ensure that investors remain loyal to the organisation (Lee, 2012). *Fulfil ethical and corporate social responsibility:* as part of an organisation's ethical and Corporate Social Responsibility (CSR), reporting on its environmental impact and its effort to reverse its negative impact helps to promote its social responsibility (Carroll & Shabana, 2010).

In South Africa, the focus on sustainability reporting is a requirement by the King III Code for all listed companies on the Johannesburg Stock Exchange (JSE) (IOD, 2009). This requirement ensures that companies report their environmental footprint to stakeholders to conform to GRI. The King III Code is a regulatory requirement of the Johannesburg Stock Exchange (JSE) for organisations to provide sustainability reports (IOD, 2009). This reporting initiative is designed to shift corporate accountability and reporting approach towards integrated reporting, both in reporting form and purpose. The major goal of this reporting shift is to encourage corporate sustainability practice among organisations and promote sound and quality sustainable decisions (IOD, 2009). But the quality of sustainability decisions depends on the quality of sustainability information available to managers. The manner in which an organisation's sustainability reporting is captured and reported may have profound implications for future sustainability practices among business entities.

Sustainability reporting and sustainable ethical business practice

The growing demand for greater accountability from corporate organizations for more disclosure of financial and non-financial information is meant to make organizations pay greater attention to the environmental and social impact of their investment strategies (Eccles et al. 2014). The motivation for business to embrace sustainability reporting tends to relate to an organization's reputation and long-term savings. Although, sustainability has often been mentioned as goal of businesses; yet measuring the degree to which an organization is being sustainable can be difficult (Liu, 2003). Similarly, measuring costs and benefits associated with corporate sustainability is intricate primarily due to the lack of standardised reporting (Szekely & Knirsch, 2005). Notwithstanding, sustainability requires a balance among competing social, economic, and environmental objectives (Litman & Burwell, 2006). Moreover, business success can no longer be determined only by monetary benefits but also on how an organization is able to manage the impact of its activities on the society as a whole. Hence, corporate concerns require a radical shift of approach to balance these competing objectives.

Because of the growing demand for greater accountability from corporate organizations for more disclosure on both financial and non-financial information, organizations are meant to pay greater attention to the environmental and social impact of their investment strategies (Nikolaeva & Bicho, 2011; Frias-Aceituno et al. 2014). The concept of sustainability is anchored on social, economic, and environmental balance for current and future survival of the planet. As such, efficient resource usage will ensure that future generations have resources they need to survive. Adopting sustainability practices throughout all aspects of human endeavour, especially in business operations will promote a safe environment for both society and businesses as well (Daily & Huang, 2001). However, business sustainability involves the management of the triple bottom line, a process through which organizations manage their social, economic and environmental risks, obligations, and opportunities (Aguilera, Rupp, Williams & Ganapathi, 2007). Even more, there are a number of best practices to ensure that sustainability practices are embedded into organizational strategies. Some of these best practices include stakeholders' engagement, environmental management systems (EMS), life cycle analysis, and reporting and disclosure. Under those circumstances, the demand by regulations for organizations to consistently provide sustainability reports as part of annual integrated reports require the integration of sustainability principles and concepts into business operations.

The level of integration between the qualitative and quantitative information depends on the extent to which the organization has managed to improve its social, environmental, and economic effectiveness and efficiency in a reporting period must be considered before its inclusion in sustainability reporting (Roca & Searcy, 2012). Similarly, Lozano and Huisingh (2011) affirm that sustainability reporting is increasingly recognised as an important driver to engage and report on an organization's efforts towards becoming more sustainable. Nevertheless, the increasing demand of products and services from sustainably responsible organizations and the growing emphasis on environmental sustainability issues have made it increasingly important for organizations to identify and report on its ability to reduce it impacts (Caniato et al. 2012; Ramos et al. 2013). Incidentally, sustainability reports should communicate useful information to stakeholders, although, its ability to influence sustainable business practice has been questioned (Manetti, 2011).

Method

Using the content analysis method, the paper reviewed annual sustainability reports of selected listed companies on the JSE. The paper reviewed latest sustainability drives among these companies based on their environmental, social and economic performances in an attempt to comply with the King III Code on the principle of Sustainability Reporting. In doing this, the paper adopted the four key principles of ethical behaviour in the principal-agent relationship as provided by Quinn and Jones (1995) to analyse the selected South African companies' attempt to conduct their businesses in a sustainably responsible manner. The review covers 15 companies that are listed on the JSE and the analyses is contained in Table 1 below. The companies were selected based on the accessibility to their sustainability reports on the individual companies' websites. The sustainability reports covered reports for the year 2013 which is commonly available for the selected companies since their financial year ends are not concurrent. The review covered various companies from selected South African business sectors which include extractive, manufacturing, merchandising, and service sectors. The choice of companies from the different sectors is to provide a diversity of evidence.

Content Analysis of Selected South African Companies

In analysing the sustainability ethical behaviour of companies in South Africa, the four principles, as provided by Quinn and Jones, were merged into three key sustainability issues, namely: environmental, social and economic responsibilities. This paper considers honesty as a social ethical responsibility of a firm; hence, it is merged into social responsibility. Table 1 present analysis of sustainable ethical business behaviour of 15 selected South African firms listed on the Johannesburg Stock Exchange (JSE) with regards to their responses to these key sustainability issues.

Table 1: Analysis of Sustainability Reports among selected JSE listed South African firms

Company	Environmental responsibility (avoid harm to others)	Social responsibility (respect the autonomy of others and avoid lying- honesty)	Economic responsibility (honouring agreements)
3M	3M has a major environmental responsibility to avoid harm to others as a result of its volatile air emissions; high waste generation; high energy consumption; and high Carbon emissions.	Due to its commitment to respect the autonomy of others in a honest manner, 3M has committed to Reduce Volatile Air Emissions (VOC) 15% indexed to net sales from 2010 base year; reduce waste 10% indexed to net sales from 2010 base year; improve Energy Efficiency (energy use) 25% indexed to net sales from 2005 base year; Reduce Greenhouse Gas (GHG) Emissions 5% indexed to net sales from 2006 base year; develop Water Conservation Plans for 3M sites located in water stressed or hyper stressed areas as defined by the Mean Annual Relative Water Stress Index maintained by the World Business Council for Sustainable Development (WBCSD).	As at 2012, the company achieved 12.0% VOC Reduction Indexed to Net Sales from 2010 Base Year; 9.0% Waste Reduction Indexed to Net Sales from 2010 Base Year; 29% Reduction of Energy Use Indexed to Net Sales from 2005 base year; 55% Reduction of GHG Emissions Indexed to Net Sales from 2006 base year; Water Conservation Plans have been developed for all sites identified as being in water stressed/hyper stressed areas in 2012
Illovo Sugar	Illovo Sugar environmental responsibilities include mitigating risks associated with air emissions, effluent and waste which are not in compliance with changing environmental legislation. Legal sanction and reputational damage due to non-compliance with regulations and licences; high energy and electricity consumption; Risk of continuity of water supply due to increased water demand, land expansions and manufacturing capacity; Potential climate change impacts on future water security.	As part of the company's social responsibility and respect for the autonomy of others, the company embarked on the implementation of treatment measures for effluent and solid waste use of renewable biomass as primary energy source reduces overall Carbon footprint, improves reputation and contributes towards climate change mitigation. Compliance with local environmental laws; Improvement of co-generation capacity and efficiencies from renewable fuel sources, allowing for power self-sufficiency, reducing the consumption of primary energy; Strategy for more effective water management and measurement to reduce water use; Irrigation systems investment.	The resultant economic benefit of its action resulted in improved irrigation efficiency and scheduling; Export of excess power to the national grid.

Company	Environmental responsibility (avoid harm to others)	Social responsibility (respect the autonomy of others and avoid lying- honesty)	Economic responsibility (honouring agreements)
Sappi Southern Africa	Sappi has committed to ensure a strategy to reduce its Carbon effect and fossil fuel emissions as part of its environmental responsibility.	To become a socially-responsible company, it planned to reduce its transportation-generated emissions through the replacement of travelling for meetings with video and teleconferencing, as well as through its SMART vehicle fleet.	In economic effect, the percentage of renewable energy increased in 2012 due to Saiccor Mill decreasing its usage of fossil fuel by increasing the black liquor solids content and improved washing efficiencies. Ngodwana Mill also increased its chemical recovery furnace steam production by increasing the black liquor solids concentration and by burning more bark in the pulverised coal-fired boiler.
Aspen	A major environmental problem caused by Aspen is the high risk of air contamination through its raw materials particles and exposure of people to harmful substance. The company has therefore committed to reduce the contamination caused by its activities	As such, to become socially-responsible for its actions, the company installed sophisticated air-handling systems at all its manufacturing sites to filter, scrub and purify the air prior to atmospheric emission.	As a result of its social responsibility, the levels of harmful air emissions became negligible and therefore not material to Aspen's business. This is in fulfilment of its economic responsibility to its shareholders.
SAB Ltd	The major environmental problem caused by SAB Ltd is the risk posed by its use of high quality water in production, especially in a country with high water scarcity and Carbon footprint (WWF, 2012).	Socially, SAB Ltd have committed to using water efficiently by setting a target of reducing water use per hectolitre of lager by 25% between 2008 and 2015; it aims to halve the fossil fuel emissions by 2020 from on-site energy use per hectolitre of lager compared to 2008 and possibly aiming to use alternative and renewable sources of energy which produce fewer emissions than fossil fuels.	In 2012, SAB global procurement business, Trinity, joined the Carbon Disclosure Project Supply Chain programme; SAB uses what it tagged the '5Rs' (i.e., Protect, Reduce, Reuse, Recycle and Redistribute) to manage its water usage upstream, downstream and within its operations; SAB Ltd average water consumption per hectolitre of lager beer produced fell to 4.0 l/hl, that is, 5% less than 2011. This initiative helped to generate cost-savings from the use of less volume of water.

Company	Environmental responsibility (avoid harm to others)	Social responsibility (respect the autonomy of others and avoid lying- honesty)	Economic responsibility (honouring agreements)
Sasol	Industrial safety; transport incidence; GHG emission intensity are among Sasol's environmental problems and it is its responsibility to mitigate these incidences through better environmental management.	Sasol as part of its social responsibility has plans to effectively improve its industrial safety; to efficiently and effectively manage its transportation related risk; and pursue a number of energy efficiency projects to deliver a further reduction in annual GHG emissions.	Sasol achieved an RCR (recorded case rate) per 200 000 hours worked; achieved 30% reduction over 5 years based on the 2009 actual transport indicator; total Carbon Dioxide emissions reduced by 12 million tons between 2004 and 2012 in its South African operations. This provides Sasol with cost-saving opportunity to fulfil its economic responsibility.
Absa Bank	Absa's environmental responsibility is to reduce its Carbon footprint as a result of its indirect environmental impact through lending.	To become socially-responsible, Absa Bank set a target of a 12,5% reduction in absolute Carbon emissions by 2013 against 2010 as the base year and to offset the remainder; reduce environmental footprint in buildings; ensure energy efficiency gains lead to a decrease in energy costs; and ensure that optimisation measures reduce maintenance costs when implemented.	In fulfilment of its economic responsibility, Absa made significant improvement in Carbon Disclosure Project during 2012, indicating their continued improvement to Carbon management; Carbon footprint dropped 22% in 2012 compared with the 2010 baseline year (almost double their 2013 target). Their intensity measured against total employees decreased 10.6% to 10.1 tonnes CO_2 per employee from 11.3 in 2010.
DAWN	DAWN's major environmental responsibility include reducing its Carbon footprint; energy consumption; waste-reduction, minimize water usage including less groundwater discharge.	DAWN, as part of its social responsibility, is committed to reduction in Carbon footprint; water usage; and energy consumption.	In effect, DAWN's Electricity consumption increased by 1 913 496 kWh from 55 689 004 kWh to 57 602 500 kWh; but its natural gas usage decreased by 323 234 m^3 from 4 624 475 m^3 to 4 301 241 m^3; petrol consumption decreased by 388 156 litres from 1 626 285 litres to 1 238 129 litres; diesel consumption decreased by 521 998 litres from 3 960 495 litres to 3 438 497 litres; total water usage decreased by 59 345 kilolitres from 210 934 kilolitres to 151 589 kilolitres; while groundwater extracted by volume increased by 4 066 kilolitres from 1 100 kilolitres to 5 166 kilolitres; and waste volume disposed increased by 1 391 kilolitres from 6 624 kilolitres to 8 015 kilolitres. In essence, DAWN's economic responsibility requires an improvement to its sustainability strategy.

Company	Environmental responsibility (avoid harm to others)	Social responsibility (respect the autonomy of others and avoid lying- honesty)	Economic responsibility (honouring agreements)
African Rainbow Minerals	High water and energy consumption; inadequate environmental data collection are some of the environmental responsibilities to be addressed by ARM.	Management initiated some socially-efficient management of resources including water and energy; improving their environmental data collection, monitoring and reporting systems as part of its social responsibility.	However, ARM's electricity consumption on a 100% basis increased 4% to 2 658 megawatt hours (MWh) (F2011: 2 550 MWh); Water withdrawal on a 100% basis increased 19% to 18.0 million m3 in F2012 (F2011: 15.1 million m3); focus was on improving data collection, specifically regarding energy which has enhanced their Carbon footprint monitoring and reporting. There is need to improve ARM's sustainability strategy to fulfil its economic responsibility.
Woolworths Holdings Ltd	Major environmental responsibilities of Woolworths are to reduce its high water usage, energy consumption, and waste generation.	Socially, Woolworths have committed to minimise water consumption on all its farms by installing water measuring systems in stores to help reduce water consumption.	Economically, Woolworths achieved 27% energy reduction based on company's benchmark; reduce water consumption from 732 742 kilolitres to 650 752 kilolitres.
BHP Billiton	Environmental problems associated with BHP Billiton include high GHG emissions; the need for waste reduction; and rehabilitation of contaminated land.	Socially, BHP have committed to reduce Aggregate Group in greenhouse gas (GHG) emissions target per unit of production of 6%; Aggregate Group target of a 13% reduction in Carbon-based energy per unit of production; Aggregate Group target of a 10% improvement in the ratio of water recycled/reused to high-quality water consumed; Aggregate Group target of a 10% improvement in the land rehabilitation index.	Economically, BHP achieved a 16% reduction in GHG energy intensity compared with the FY2006 base year; a 15% reduction in energy intensity compared with the FY2006 base year; and a 1% decline on the land rehabilitation index compared with the FY2007 base year.

Company	Environmental responsibility (avoid harm to others)	Social responsibility (respect the autonomy of others and avoid lying- honesty)	Economic responsibility (honouring agreements)
Murray and Roberts	Some of Murray and Roberts environmental responsibilities include Resource efficiency and Carbon footprint; low emissions releases and waste management.	Murray and Roberts's management have decided as part of its social responsibility to determine its material environmental issues through a combination of benchmarking and internal engagement with operating entities; define an appropriate governance structure for environmental risk and reporting, aligned to health and safety; conduct environmental status reviews at selected operations to capture and report on the most material environmental risks; develop a consistent environmental risk management framework and process; develop an environmental data reporting standard to ensure consistent and complete reporting of environmental data across the businesses; build capacity on environmental data reporting across the operating entities.	To measure its economic responsiveness, Murray and Roberts conducted Environmental status reviews at 16 of its sites; Energy usage in MWh increased to 1 717 120 MWh in 2012 against 1 319 329 MWh in 2011; Carbon footprint increased to 565 034 tonnes in 2012 against 515 506 tonnes in 2011; ISO 14001 implementation (percentage coverage) 40% in 2012 and ±30% in 2011.

Company	Environmental responsibility (avoid harm to others)	Social responsibility (respect the autonomy of others and avoid lying- honesty)	Economic responsibility (honouring agreements)
Mediclinic	The main categories of environmental impacts being managed are the utilisation of resources and waste management, which include electricity, water, gases, paper, healthcare risk waste, hazardous waste and normal waste. These have a direct effect on the Carbon emissions of the group. Excessive use and inefficient installations were highlighted; Physical risks include access to facilities and interruptions in service resulting from risks of water shortage, electricity load shedding or incidents of extreme weather conditions; Regulatory risks include operational costs of running of facilities could be affected by risks relating primarily to energy supply, with 83% of the company's carbon emissions resulting from purchased electricity.	Socially, Mediclinic have resulted to purchasing of advanced measuring and monitoring equipment to verify energy savings; A Carbon emission reduction target in respect of scope 2 emissions of 3.09% was set for the electricity consumption of Mediclinic Southern Africa's 52 hospitals for the reporting period. This reduction target is in line with the Carbon emission reduction target of 34% by 2020 agreed on by South African government after COP15 at Copenhagen; Environmental awareness entrenched in all business activities; Compiling Waste Management Plans at hospitals; Use of the Group's CURA risk management software to capture environmental aspect registers to be implemented at 39 hospitals during year ahead.	Economic performance of Mediclinic improved through an energy saving of 1.18% ton of $C0_2$ against the set reduction target of 3.09% for the electricity consumption of the group's 52 hospitals was achieved year-on-year; The reduction of normal waste is achieved through recycling and waste separation programmes, which include optimal use of paper and printers, and staff awareness training in compliance with ISO 14001:2004; Participated in the Carbon Disclosure Project 2011; Implementation of a Sustainable Compliance Culture Course at an additional 12 hospitals to enhance the preventions and minimising of impacts. At the end of the next financial year, 24 hospitals will have completed the course; Fifty-one ISO 14001-trained hospitals with a generic aspect register with baseline including healthcare risk waste, water, electricity, paper, hazardous waste, gases and climate change; Waste recycling programmes in progress at all ISO-trained hospitals; Implementation of ISO 14001 hazardous waste management/minimisation processes at all hospitals; Various energy and resource saving projects to counter excessive use and inefficient installations to be implemented; New user-friendly CURA aspect register in progress.

Company	Environmental responsibility (avoid harm to others)	Social responsibility (respect the autonomy of others and avoid lying- honesty)	Economic responsibility (honouring agreements)
PPC	Environmentally, PPC faces a challenging and changing environmental framework; Energy (electricity, coal, diesel); The cement industry requires significant thermal and electrical energy; Carbon footprint due to the chemistry and energy requirements of the cement manufacturing process, significant quantities of Carbon Dioxide (CO_2) are generated; Water management; Cleaner production.	Socially, PPC considers the price, quality, sustainable supply and optimal use of both energy types as key to successful operation; the potential implementation of a carbon tax will have financial implications for the cement and lime industry; efficient and responsible use of scarce water resources; drive cleaner production opportunities in their cement, lime and aggregate businesses.	To improve economic responsibility and performance, PPC implemented a mature environmental management systems at all its sites. All its cement operations in South Africa are ISO 14001 certified; PPC is replacing old technology at its Riebeeck plant in the Western Cape with modern energy-efficient and environmentally compliant equipment. The environmental impact assessment process has been completed with a positive record of decision issued by the provincial Department of Environmental Affairs and Development Planning in September 2012. Its Grassridge project was granted preferred-bidder status in round two of the renewable energy procurement programme. This is PPC's private wind farm, a project where 60MW will be generated into the renewable energy programme of the DoE and 21MW will be generated for the private use of PPC; Continued focus on energy management and implementation of a wide spectrum of energy efficient projects; Water-use optimisation projects implemented at each site; Substituting fossil fuel and natural resources with products from other industries, for example, fly ash from the power sector.
Eskom	High Carbon footprint from coal powered plants, gaseous and sulphur emissions, and water pollution are some of the major environmental responsibilities Eskom needs to address.	To become more socially responsible, Eskom has designed more technologically efficient coal power plants at Medupi and Kusile.	Economic lessons learnt from past environmental legal contraventions were shared with employees and contractors, contributing to a decrease in the number of environmental contraventions, from 21 for the six months to September 2011, to 12 for the six months to September 2012.

Discussions

Although, the numbers of South African companies complying with King III Code on the principle of Sustainability Reporting have increased considerably, this trend does not indicate a corresponding improvement at integrating ethically sustainability practices into conventional business practices. This study argues that many companies continue to operate using conventional business approach while legitimising their actions through the production of tailored sustainability reports. Meanwhile the King III code on the principle of sustainability reporting was developed to improve environmental and social performance among South African companies from an ethical point of view (IOD, 2009). But a review of the selected companies' sustainability reports reveals a lack of standardised approach to reporting sustainability issues. Incidentally, this lack of standardised reporting system have led these companies to devise individual approach to generate sustainability report as a means to comply with sustainability reporting requirement but not necessarily based on ethical motivation (Ramos et al. 2013). Deriving from the lack of standard is the misconception by the initiators, that is, the South African Institute of Director (IOD) that producing annual sustainability report even though tailored to report on positive activities will invariably result in improvements to environmental and social responsibilities of these organizations. In contrast, the lack of standardised reporting approach has created a gap for management to manipulate their sustainability reports. The skills shortages among existing accountants identified by Jinabhai (2005) is a reason future sustenance of the King III Code requirement on sustainability reporting in South Africa may be under threat. Hence, in order to sustain this sustainability reporting requirement trend, a more holistic approach is needed to ensure that future accountants are well educated to meet the skills demand for generating accurate financial and non-financial information sustainability information.

The review shows that companies make efforts to report their sustainability initiatives without an explanation on whether these sustainability drives are obligatory or voluntary. An example is the worsened situation about the inability of Eskom, the state-owned power utility company to address the problem of infrastructural failure leading to load-shedding and blackouts in South Africa. This recent event and reality raises doubts about the ethics of individual companies' preparation of sustainability reports and questions its genuineness and reliability. A cursory look at these sustainability reports indicate that these organizations continue to do business as usual, using tested conventional business approaches to meet increasing demands of customers without ethical consideration for an improved sustainable business practice. Despite incentives to encourage and promote sustainability disclosure and reporting through annual awards for the most compliant company in South Africa; the lack of necessary manpower, skills, adequate knowledge and understanding of sustainability issues on what to include in these reports, remain a great threat to achieve the objective of the reports design.

One useful step to promote sustainability practices among these organizations is to identify possible economic benefits associated with its implementation. Such economic benefits will include cost savings through cleaner production systems and a shift to less a carbon intensive production system to reduce the effect of negative environmental impact on both the society and the organization (Napp et al. 2014). The determination and identification of possible economic benefit will help managers as agents of these organizations to become more ethically responsible thereby translating to improved sustainable business practices and better environment. For instance, Murray and Roberts have at least disclosed their increasing carbon footprint it has nevertheless increased despite attempts to curtail its emissions. The inability to reduce carbon emissions does not indicate that the company's willingness to revise its environmental impact from an ethical point of view. The implication of this practice indicates the quest to increase output and profitability without considerations for environmental improvements. Improved environmental performance and organizational profitability depend on the responsible use of scarce resources available to the organization, such as water, energy, and input materials, as well as the ability to determine unsustainable and wasteful-producing business practices. As such, agents are compelled to adapt sustainable practices into conventional business approaches while driving profitability, shareholders' wealth, and sustainable development at the same time.

Conclusion

A significant step to align corporate objectives with ethical sustainability reporting responsibility by companies have been taken by the Institute of Directors of South Africa (IODSA) through the King III Code the principle of Sustainability Reporting that requires companies to report their sustainability and environmental impact to stakeholders annually. While, progress have been made to report on sustainability activities by the selected JSE listed companies; these reports have yet to translate into envisaged ethical culture for sustainable business practices by the IODSA. This paper suggests that, while organizations are trying to comply legally with the King III Code requirement on Sustainability Reporting, attempts should be made by agents to ethically integrate and improve their conventional business approach with sustainability practices. Further research is encouraged into individual companies to determine the level of ethical compliance in relation to sustainability issues and what motivates them to report their sustainability activities to stakeholders.

References

Aguilera R, Rupp D, Williams C, Ganapathi J. 2007. Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of Management Review* **32**(3): 836-863.

Argenti J. 1993. *Your organization: what is it for?* New York: McGraw Hill.

Caniato F, Caridi M, Crippa L, Moretto A. 2012. Environmental sustainability in fashion supply chains: An exploratory case based research. *International Journal of Production Economics* **135**(2): 659-670.

Carroll A, Shabana K. 2010. The business case for corporate social responsibility: a review of concepts, research and practice. *International Journal of Management Reviews*, 12(1): 85-105.

Castelló I, Lozano J. 2011. Searching for new forms of legitimacy through corporate responsibility rhetoric. *Journal of Business Ethics,* 100(1): 11-29.

Daily B, Huang S. 2001. Achieving sustainability through attention to human resource factors in environmental management. *International Journal of Operations & Production Management* **21**(12): 1539-1552.

Dey A, LaGuardia P, Srinivasan M. 2011. Building sustainability in logistics operations: a research agenda. *Management Research Review,* 34(11): 1237-1259.

Du S, Vieira Jr E. 2012. Striving for legitimacy through corporate social responsibility: Insights from oil companies. *Journal of Business Ethics,* 110(4): 413-427.

Eccles R, Ioannou I, Serafeim G. 2014. The impact of corporate sustainability on organizational processes and performance. *Management Science* **60**(11): 2835-2857.

Edgley C, Jones M, Solomon J. 2010. Stakeholder inclusivity in social and environmental report assurance. *Accounting, Auditing & Accountability Journal* **23**(4): 532-557.

Freeman R. 1984. *Strategic Management: A Stakeholder Perspective.* Englewood Cliffs, NJ: Prentice Hall.

Frias-Aceituno J, Rodríguez-Ariza L, Garcia-Sánchez I. 2014. Explanatory factors of integrated sustainability and financial reporting. *Business Strategy and the Environment* **23**(1): 56-72.

Gray R. 2006. Social, environmental and sustainability reporting and organisational value creation? Whose value? Whose creation? *Accounting, Auditing and Accountability Journal*, 19(6): 793-819.

Ingenhoff D, Sommer K. 2011. Corporate Social Responsibility Communication. *Journal of Corporate Citizenship (*42): 73-91.

IOD Institute of Directors South Africa. 2009. *King Report on Governance for South Africa,* Johannesburg: Institute of Directors South Africa.

IRAS Integrated Reporting and Assurance Services. 2012. *KING III & GRI +13.* http://www.iras.co.za/E635082C-AAC2-42FB-89F4-F0F3EA3BA60B/FinalDownload/DownloadId-51D7A099268CC81CE3D52FA554E63950/E635082C-AAC2-42FB-89F4-F0F3EA3BA60B/Documents/Research/King_III_and_GRI_13_Research_Report.pdf.

Jinabhai D. 2005. New challenges for South African development and training—linkages to empirical research. *Public Personnel Management,* 34(1): 85-101.

Lee K. 2012. Linking stakeholders and corporate reputation towards corporate sustainability. *International Journal of Innovation and Sustainable Development*, 6(2): 219-235.

Lee Y, Lee K, Li D. 2012. The impact of CSR on relationship quality and relationship outcomes: A perspective of service employees. *International Journal of Hospitality Management* **31**(3): 745-756.

Litman T, Burwell D. 2006. Issues in sustainable transportation. *International Journal of Global Environmental Issue*, **6**(4): 331-347.

Liu, Z. 2003. Sustainable tourism development: A critique. *Journal of Sustainable Tourism* **11**(6): 459-475.

Lozano R, Huisingh D. 2011. Inter-linking issues and dimensions in sustainability reporting, *Journal of Cleaner Production* **19**(2): 99-107.

Manetti G. 2011. The quality of stakeholder engagement in sustainability reporting: empirical evidence and critical points. *Corporate Social Responsibility and Environmental Management* **18**(2): 110-122.

Napp T, Gambhir A, Hills TP, Florin N, Fennell PS. 2014. A review of the technologies, economics and policy instruments for decarbonising energy-intensive manufacturing industries. *Renewable and Sustainable Energy Reviews* **30**: 616-640.

Nikolaeva R, Bicho M. 2011. The role of institutional and reputational factors in the voluntary adoption of corporate social responsibility reporting standards. *Journal of the Academy of Marketing Science* **39**(1): 136-157.

Pacheco D, Dean T, Payne D. 2010. Escaping the green prison: Entrepreneurship and the creation of opportunities for sustainable development. *Journal of Business Venturing* **25**(5): 464-480.

Quinn D, Jones T. 1995. An agent morality view of business policy. *The Academy of Management Review* **20**: 22-42.

Ramos T, Cecílio T, Douglas C, Caeiro S. 2013 Corporate sustainability reporting and the relations with evaluation and management frameworks: the Portuguese case. *Journal of Cleaner Production* **52**: 317-328.

Roca L, Searcy C. 2012. An analysis of indicators disclosed in corporate sustainability reports. *Journal of Cleaner Production* **20**(1): 103-118.

Soyka P. 2013. The International Integrated Reporting Council (IIRC) Integrated Reporting Framework: Toward Better Sustainability Reporting and (Way) Beyond. *Environmental Quality Management*, 23(2): 1-14.

Szekely F, Knirsch M. 2005. Responsible leadership and corporate social responsibility: Metrics for sustainable performance. *European Management Journal* **23**(6): 628-647.

WWF World Wildlife Fund. 2012. *Water Footprinting:Identifying and Addressing Water Risks in the Value Chain.* Available at: http://awsassets.wwf.org.za/downloads/sabmiller _waterfootprinting_report_final.pdf (Accessed 3 December 2012).

AUD007 Municipal Fiscal Reporting and Determinants of Financial Regularity Audit Outcomes

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Abstract

This paper contributes to developing of a composite model to predict audit outcomes and guide interventions seeking to improve financial reporting practices. It analyses the relationship between municipal financial regularity audit outcomes (FRAO) and selected municipal attributes. It examines the National Treasury's (NT) municipal capacity and Municipal Demarcation Board's structure categorisation in predicting municipal FRAO. The study hopes to contribute to operation clean audit tasks targeted at improving municipal attributes clustered within governance, and fiscal efficacy reform readiness.

The paper is based on ongoing doctoral research on developing and testing a composite model predicting municipal FRAO. The paper employs logistic regression framework in analysing the relationship between selected municipal attributes and FRAO. Logistic regression is applied on data published by the Municipal Demarcation Board (municipal structural categorisation), the Auditor General South Africa (AGSA) (FRAO), and the NT (municipal capacity categorisation data).

A review of the summary of municipal audit outcomes in financial years to June 30, 2013 show unsatisfactory municipal financial reporting practices. About 60 percent of municipalities failed to consistently achieve unqualified audit opinion report during a five-year period to June 30, 2013. The interventions improving municipal FRAO should be based on a composite model of municipal-based data.

Key words: composite model, municipal capacity, accountability, audit outcomes

1. Introduction and background

Each year, the AGSA, the supreme audit institution, and the media report news concerning the "deficient financial management" municipalities and, as a consequence, their delicate financial situation (Powell, O'Donovan, Ayele, and Chigwata, 2014). The importance of audited municipal performance is evident in the National Development Plan (NDP) targeting 75 percent of municipalities to obtain unqualified audit reports by no later than 2019(Powell and O'Donovan, 2014:28). Users of public accounting information, especially the citizens, demand access to data that allows evaluating the financial condition and performance of municipalities, as a means to assess the municipalities' financial and non-financial commitments, related to the provision of services (Kennedy and Shaw, 1991; Christiaens, 1999). In this context, reliance is placed on the AGSA's assurance function in enhancing financial governance in established accountability structures.

Audited financial information allows the municipalities to remain accountable and creates transparency, including a financial reputation, facilitating justification of past decisions and informing future policies (Pablos, *et al*, 2002). Municipal finance management performance measurement, which are audited, underpins a performance management framework, in general, and is supported by the Municipal Finance Act (Act No 56 of 2003) (MFMA). In addition, it forms a building block to the back-to-basics programmes formulated by the Department of Cooperative Governance and Traditional Affairs (CoGTA) (CoGTA, 2014:14). The implementation of the MFMA proved challenging for municipalities receiving modified audit opinions[1] from the AGSA (CoGTA, 2014; Sholtz and Lepheana, 2013; Ambe and Magiro, 2008).

The AGSA has documented municipal specific reasons for municipal modified audit outcomes (refer to the Text Box 1 and Table 2). The majority of the municipalities referred to in Table 2 received modified audit reports from the AGSA. Some of the challenges regarding modified audit reports evolve around municipal weak capacity, which informed the NT's 2014 capacity categorisation and the development of minimum competency regulations (Sholtz and Lepheana, 2013).

There have been various ways poor audit outcomes, reflecting bad financial management and reporting practices, have been addressed by the South Africa (SA) government. One of these ways has been through consolidation of weaker municipalities with seemingly stronger ones for improved performance and implementation of "operation clean audit" programme, targeting elimination of modified audit reports among municipalities by 2014 (Powell, *et al*, 2014). Another way has been to undertake interventions in terms of Section 139 of the South African Constitution and carry out municipal recovery measures led by the national and provincial government. This has not yielded the desired outcomes (Powell, *et al*, 2014, CoGTA, 2014) and municipalities have been sorted into performance tracks to facilitate targeted interventions to dysfunctional ones (CoGTA, 2014:6). The issue therefore is how the national government should detect modified audit reports before they become emergencies for intervention in terms of Section 139 of the Constitution.

Text Box 1: Good practice indicators for municipalities to achieve clean audit results

1. A clear trail of supporting documentation;
2. Quality of financial statements and management information;
3. Timeliness of financial statements and management information;
4. Availability of key officials during audits;
5. Development of, and compliance with, risk management and good internal control practices; and
6. Leadership, supervision and monitoring.

Adapted from: Auditor General South Africa. 2014. <u>Consolidated report of the Auditor-General on the audit outcomes of local government for the financial year 2013-14</u> , Pretoria: The Auditor General South Africa

[1] In terms of the International Standard on Auditing No 705, Modified audit opinion includes qualified, adverse and disclaimer audit opinions.

2. Problem statement

As the implementation of the MFMA evolves, the AGSA's reports and the Department of Cooperative Governance and Traditional Affairs' (CoGTA) back-to-basics programme associates a deteriorating financial management picture to municipal specific findings that are broadly categorised in the AGSA's list of good practice indicators for municipalities to obtain unqualified audit outcomes (see T*ext Box 1*). The solution to these problems seem to be context specific and consume resources as demonstrated in the differentiated approached advanced by CoGTA in its back-to-basics programme (CoGTA, 2014:8). As a result, the Minister responsible for local government launched a conceptual model recognising differences among municipalities at their performance and capability (Powell and O'Donovan, 2014:5).

A back and forth intervention process seem to be in place. The principles behind the launched conceptual model, categorising municipalities in three performance tracks (top, medium and low), do not seem to differ from the 2004 NT-led municipal capacity survey that categorised municipalities into low, medium and high capacities. The 2004 NT-led municipal capacity survey and subsequent capacity categorisation recognised the importance of municipal capacity in improved financial management and service delivery. Table 1 shows how local, district and metropolitan municipalities were categorised into low, medium and high capacities. The subsequent audit outcomes (Table 2) could have been used to refine the capacity categorisation to support targeted intervention.

Table 2 shows indicative audit outcomes consistently achieved during a five-year period to June 30, 2013 and facilitates focus from annual FRAO to a 'track record of FRAO'. From Table 2, 115 municipalities (41.4 percent) achieve unqualified audit (with or without emphasis of matter) in at least three years during the five-year period. About 60 percent of municipalities received at least three modified audit opinion reports, reflecting unsatisfactory municipal financial performance, over the five-year period (2008-2013).

Table 1: Summary municipal capacity categorisations

	Municipal Categories				
		Local	District	Metropolitan	Total
Capacity	Low	112(88%)	15(12%)	0	127(45%)
	Medium	85(79%)	22(21%)	0	107(38%)
	High	36(72%)	8(16%)	6(12%)	50(17%)
		233(87%)	45(16%)	6(2%)	284[2](100%

Source: Compiled from the February 2004 survey results published in the South Africa Government Gazzette Notice No. 26511

[2] The number of municipalities has since changed to 278 as weaker municipalities were consolidated to create well performing municipal structure.

The development of a composite model would be useful to guiding differentiated interventions designed to lead municipalities to achieve municipal audit objectives in the NDP and later refine performance tracks in the back-to-basics programme (CoGTA, 2014). The areas targeted for intervention under the back-to-basics programmes included broad aspects of accelerating service delivery, enhancing good governance, promoting sound financial management, fighting corruption, and facilitating sustainable infrastructure development.

Table 2: Summarised consistently achieved audit outcomes (2008-2013)

		Municipal Category							
		Metropolitan		**District**		**Local**		**Total**	
	3:Unqualified	5	62.5%	28	63.6%	82	36.3%	115	41.4%
	2:Qualified	2	25.0%	7	15.9%	59	26.1%	68	24.5%
Audit	1:Other as modified[3]	1	12.5%	9	20.5%	85	37.6%	95	34.2%
		8	100%	44	100%	226	100%	278	100%

Source: Derived from analysis of AGSA (2013). Consolidated General Report on Local Government Audit Outcomes, Pretoria

3. Research questions

The study endeavours to get answers to the following questions:

i. With these results in Table 2 in mind, a question worth asking is: what is the composite model for explaining and predicting consistent record of audit outcomes?

ii. What is the predictive value of the 2014 NT municipal capacity categorisation survey results that can guide municipalities achieve improved FRAO?

iii. To what extent does the municipal categorisation under the Local Government: Municipal Structures Act (Act No 117 of 1998) impact on FRAO?

4. Justification and significance of the study

Financial regularity audit is a process of validation of financial measurements presented in the annual financial statements (Kuenkaikaew and Vasarhelyi, 2013:13). The resulting FRAO are therefore based on annual financial statements prepared in accordance with approved reporting standards and Sections 121 and 128 of the MFMA. The audit reports and audit action plans seeking to improve weaknesses identified by the AGSA are components of the annual report. From this, it is clear that accounting officers prepare audit action plans in a retroactive basis and without reliance on a systematic model. The adoption of improved financial management, reporting, and monitoring of implementation of audit action plans consume resources (CoGTA, 2014).

Previous studies (Dopuch, Holthausen, Robert and Leftwich, 1987; Green, 1995, Ireland, 2003; Caramanis and Spathis, 2006) model auditors' qualifications among private sector

[3] Included here are adverse, disclaimed, and unissued audit reports

firms as premised on going concern imperatives. In addition to their private sector orientation, previous studies referenced here use relatively small samples of non-public sector firms. The current study is based on municipalities and going concern uncertainties are important to the extent of their negative impact on public service delivery. In addition, these studies have used market-based and firm specific financial variables.

This study adds a dimension to the prediction of audit outcomes by consideration non-financial variables and data that is specific to the SA environment. For instance, it has been established that contend that large municipalities produce better accounting information (and by extension better audit outcomes) than municipalities in general Falkman and Tagesson (2008). Christiaens (1999) studied determinants of adopting accrual-based financial reporting in municipalities and concluded that municipal accounting reforms among Flemish municipalities was context specific and failed to taken into account the supremacy of budgetary accounting, municipal size, availability of consultants and previous municipality experience in managing reforms. The municipal structure and reporting requirements have been used to model municipal information timeliness and were found to be significant (Dwyer and Wilson, 1989:46-52). However, it is not clear whether these factors play a significant role in the prediction of audit outcomes.

No study has been done specifically with regards to predicting municipal audit outcomes as it has been the case with private sector firms' audit outcomes. However, municipal reporting timeliness has been considered in a number of studies (Payne and Jensen, 2002, Johnson, 1996; Johnson, 1998:378; Knechel and Payne, 2001; and McClelland and Giroux, 2000) have shown that the audit reporting delays are impacted by municipal audit and audit-firm characteristics although the effects of audit characteristics are largely determined by municipal structure and reporting requirements. Ngoepe and Ngulube (2014) have established that record management practices significantly influence audit outcomes, while Powell, *et al*, 2014 have argued that a municipal audit consistency barometer, developed on the basis of a history of audit outcomes, is important in guiding national and provincial government intervention to improve municipal financial management.

There are gaps in existing research that make the present study useful to auditors, national government, and researchers or financial analysts. The findings and recommendations in the reviewed studies do not lead to a model predicting modified audit reports. The factors analysed by studies done outside the South African environment are not entirely relevant to resolving a history of the AGSA's modified audit reports to municipalities. Timely presentation of the municipal annual report by SA municipalities are determined with reference to regulated dates (see sections 72, 121, 126, 128 and 129 of the MFMA). In addition, financial reporting requirements are stipulated in the NT-issued templates and guidelines and allow audit to proceed on a retroactive basis. Failure to submit annual financial statements for retroactive audit may invite s139 of the Constitution intervention by provincial and national governments in the management of a municipality. The development of a model on the basis of retroactive audit reports can explored for use to predict municipal FRAO and make targeted intervention a reality.

5. Objectives of the study and scope

The purpose of the study is to develop a composite logit model to predict FRAO by discerning determinants of municipal FRAO as highlighted in the AGSA assurance reports. The logit model is developed with dependent variable indicating whether the municipality received a modified audit report or not; and the explanatory variables representing mostly public available information on municipalities as defined in Table 4. The study endeavours to answers research questions posed in the section 3 of this paper.

This study improves the understanding of annual reporting and audit as accountability instruments in municipalities and will have policy implications on the targeting of interventions to improve FRAO and later audit of performance information (AOPI). Knowing factors contributing to audit outcomes will help provincial and nation governments plan and implement s139 of the Constitution intervention as informed by consistently achieved FRAO. The AOPI and value for money audit outcomes are not used in this study. The AOPI was introduced in municipalities after 2009 and did not involve expression of audit opinion in its pilot phase. FRAO has been shown to contribute to adoption of recognised financial reporting standards (Christiaens, 1999; Tagesson and Erikson, 2011), a key aspect of MFMA reform.

Table 3: Municipal Capacity Categorisation Survey Attributes

Survey Aspect	Attribute
Governance arrangements	Existence of a budget and treasury directorate (office)
	Number of employees dedicated to the financial function
	Existence of approved delegation policy
	Prevalent vacancies in senior management position
	Number of years of experience in municipal governance issues commanded by existing senior managers
Financial and complexity status	Existence of multi-year budgeting and planning
	Frequency of reporting (oversight) to by management to the council
	Existence of municipal-controlled entities
	External audit lag
	External audit outcome type
Municipal Finance Reform implementation readiness	Existence of MFMA implementation leadership
	Adequacy of project management experience among senior managers
	Existence of MFMA implementation plan
	Dedication of resources to MFMA implementation

Source: Compiled from the survey instrument used in February 2004.

6. Municipal accountability, accounting and audit

There are many dimensions (internal, external, performance information, forensic) of audit (Wasche and Sciortino, 2007). In this study we consider financial regularity audit (Ahlenius, 2000). Audit of municipal accounting information systems require that financial statements include information on issues such as the budgetary execution level, liquidity and solvency, indebtedness level, cost of the services and goals achieved (Patton, 1992).

Municipal accountability premised on the municipal residents' "right to know" and practiced in public participation in decision making (CoGTA, 2014). Municipal financial reporting and associated audit assurance are significant in the accomplishment of the accountability duty in a democratic society (ASB, 2012). Rightly so, they form a building block to the back-to-basics programme (CoGTA, 2014). Gong (2009:S16) considers audit as "*a part of the accountability architecture (*it does not generate accountability*) as it contributes to the financial health of a government and the effective management of public money."* The purpose of financial reporting should be understood in the context of different instruments of accountability (Ryan, *et al*, 2002; Miah, 1991). Financial accountability can be achieved through reporting as required in terms of the section 121(3) of MFMA.

On a reduced scope, financial accountability links municipal managers to municipal residents, being related to the use of municipal resources. In this manner, financial accountability comprises of the duty to maintain honesty, comply with legal prescripts (accountability for legality), and maintain an efficient and effective administration (process and performance accountability) (Pablos, *et al*, 2002). It is for this reason that Schelker and Eichenberger (2008) argue, emphasising the role of audit outcomes in accountability, that auditors with an extended mandate improve transparency and provide essential information on the impact of policy proposals on common pool resources. In the case of SA, the mandate extends beyond financial regularity to AOPI (AGSA, 2014).

The contribution of FRAO to municipal accountability can be analysed on the basis of the agency theory. Municipal residents (the principal) puts reliance on audited financial statements to monitor councillors and municipal managers. The existing legislation on local government referred to earlier recognizes the agency theory in the design of the municipal financial governance and accountability structures (CoGTA, 2014; AGSA, 2014).

The need for improved accountability and financial governance required an assessment of municipal capacity along the lines suggested at the recently concluded Presidential Summit on Local Government (CoGTA, 2014). The 2004 NT-led municipal capacity survey provided a basis for determining the timing of MFMA reform implementation in municipalities. The survey considered aspects in Table 3. A number of attributes were considered in arriving at the capacity category (index) of a municipality. A review of the survey instrument show, among others, the audit outcomes during three financial years preceding 2003/2004 contributed to the capacity categorise of 284 municipalities then. Powell, *et al* (2014) have underscored, without providing a tested model but relying on past trend analysis, the contribution of audit consistency barometer to assessing the municipal capacity to achieve municipal audit objectives in the NDP. The audit consistency barometer does not uncover factors underpinning such trend-based metric.

7. Data and methods

Municipal financial performance measurement and associated assurance in SA public administration can be more strategic, efficient and effective by ascertaining which key causal conditions shape its adoption of improved practices. The study is informed by a review of the legislative context of municipal financial management reforms, policy documents, and literature on performance measurement in the public sector. It also focuses on the review of quantitative data on municipal attributes. The paper employs logistic regression framework in analysing the impact of selected municipal attributes on FRAO. Logistic regression is applied on data published by the Municipal Demarcation Board (on municipal structures), AGSA (FRAO as the study criterion variable), and the NT (municipal capacity categorisation data). The two government agencies responsible for determining municipal structures and capacity categorisation consider information from research surveys, stakeholder interviews and other sources. The researcher envisaged, a *priori*, that the outcome of the process activities undertaken by government agencies reflect factors that matter most to municipal fiscal efficacy.

In view of the research questions and associated research objectives, a positivist realism research paradigm (RP) (Guba and Lincoln, 1994: 105) appeared appropriate although the research topic involves an investigation into a legislatively-controlled reporting and assurance system that is open and evolving (Healy and Perry, 2000: 121). As demonstrated by regular interventions, such systems do not to achieve equilibrium in a manner akin to phenomena in natural sciences (Sayer, 2000). Therefore, by applying a positivist realist paradigm we assume that knowledge is statistically generalised to population through statistical analysis of observations about accessible data. The positivist realism paradigm requires that the researcher explores what can be observed and what lies behind what is observed (Chalmers, 1999: 226) and generalise study findings that are not intertwined in theoretical propositions. A number of municipalities have shown unsatisfactory FRAO after attempts were made to prepare them for modernised financial management and reporting practices (Table 2, CoGTA, 2014:6).

The data on FRAO during the period 2004-2013 were collected from the audit reports of the AGSA on 234 municipalities (excluding district municipalities). The FRAO was used the criterion variable because access to financing for services require sound and transparent financial systems, reflected in the independently audited annual financial statements. The data on 234 municipalities' attributes (structure and capacity) were analysed to assess the extent to which the surveyed attributed contributed to FRAO achieved. The 234 municipalities excluded district municipalities as they did not shoulder service delivery-oriented powers and functions similar to those of local and metropolitan municipalities.

Only two municipal attributes were considered in this study. Historical municipal attributes influencing municipal FRAO were coded from the published listing of municipal capacity and structure categories. The data collected was based on a priori expectation regarding municipal attributes that could influence positive FRAO while implementing municipal efficacy reforms.

The proto-type logit model specified for this research was fitted under two situations. Firstly, maximum likelihood estimates were obtained with the two explanatory variables. Secondly, the model was fitted through a stepwise selection procedure to determine which of the two attributes mattered most. The explanatory variable (municipal attributes) investigated were as specified in Table 4. The expected direction of the relationship of the explanatory variables in the proto-type model with the criterion variable indicated in parenthesis.

Table 4: Explanatory and criterion variables and their coding

Criterion variable:	
FRAO	1 if the municipality obtain unqualified audit in 5 out of the 8 years surveyed and 0 otherwise. This emphasise consistency in achieved outcomes.
Explanatory variables	
Capacity	3 if the municipality was categorise as high capacity, 2 if the municipality was categorised as medium capacity, and 1 if the municipality was of low capacity category (+)
Structure	3 if the municipality is a metropolitan, 2 if the municipality is a district, and 1 if the municipality is local in terms of the Local government: Municipal Structures Act (Act No 117 of 1998) (+)

At the end of each audit, the audit opinion issued by AGSA is in any of the five categories: unqualified opinion without emphasis of matter, unqualified audit opinion with emphasis of matter, qualified audit, disclaimer due to limitation of scope, and adverse. For purposes of improving municipal financial performance, operation clean audit should focus on modified audit report, represented by the last three types of audit opinion. This study considers unqualified audit to be good performance.

8. Analytical framework

To investigate the chances of a municipality to achieve improved performance, as defined by FRAO, the logit model was used to estimate the relationship in which the probability to achieve and sustain improved FRAO (succeed) is considered to be a function of explanatory variables. The logit model is used in this study because ordinary least square model is inappropriate when response variable is dichotomous (Ameyiya, 1981; Hosmer and Lemeshow, 1989; Allison, 2012; Tobin, 1958; Maddala, 1991). The FRAO, our criterion variable, is discrete and therefore the analysis of data and determination of relationships is done in the context of a choice model. In this study, the criterion variable is viewed as the probability that a municipality is inclined to achieve and sustain improved financial performance given certain factors (municipal attributes). History of audit outcomes may be a factor. Success is defined as achieving unqualified audit opinion from AGSA in more than a half of the period 2005-2013.

The researcher explored other alternative specification of quantitative choice models and was guided by the findings of Maddala (1991). Quantitative choice models include linear probability, probit, and logit model. These three statistical choice models are available on most computer-based statistical packages and can analyse binary response variables such adopt or not adopt newly introduced technology or financial reporting regime. Of the three choice models, logit and probit are preferred to linear probability model when quantitative modelling is based on a sample of data. In such cases, linear probability model suffers from a number of inadequacies. For instance, variance of error terms of the linear probability model is heteroscedastic and the standard errors of the parameter estimates are biased (Allison, 2012).

In addition, Hosmer and Lemeshow (2013) and Allison (2012) have noted that the error term does not follow a standard normal distribution. Therefore, classical statistical test of significance are inappropriate if certain null hypotheses has to be rejected or accepted. Thus Feder, *et al* (1982) and Maddala (1991) have recommended the use of probit and logit models as appropriate approaches to take care of heteroscedacity of the error term as well as confine predicted values of the criterion variables in the range on 0 and 1. Nayga and Capps (1992), and Maddala (1991) have demonstrated that neither logit nor probit has advantage over the other in the case of binary choice models.

The researcher's decision preference of logit over probit was based on convenience and supported by the findings of Pohlman and Leitner (2003). Pohlman and Leitner (2003) compared, on the basis on common data sets and assumptions, ordinary least squares (OLS) and logistic regression and findings showed logistic regression yielded more accurate predictions of dependent variable probabilities.

9. Results of Analysis

9.1 Model fitting results based on two explanatory variables

After obtaining logistic regression model fitting results (Table 6a), the study proceeded to examine the issue with regards to the question "*How do we know if model fits the data?*" The Statistical Package for Social Scientists (SPSS) software used in analysing the data has approaches that we relied in examining this issue. Broadly, the approaches fall into two categories: measures of predictive power, for example, R-square and model classification results, and goodness of fit tests. Allison (2012) argues, after showing limitations of other approaches, for measures proposed by Tjur (2009). The study therefore generated most of goodness tests and performed targeted tests where the model may have failed to pass all of them.

Results showing parameter estimates and overall classification achieved by the logistic model are presented in Tables 6a and 7. The parameter estimates shown in the model fitting results (Table 6a) summarises the effects of each explanatory variable investigated. The wald statistic shown is equal to the ratio of the regression coefficient to the standard error, squared. The significance level of wald statistic is ≤0.05 although a true significance level slightly higher will not really affect conclusions drawn (Maddala, 1991:792). We therefore, conclude that the parameter estimates for capacity categorisation are useful in the model. However, the municipal structure is not significant given a computed significance value of 0.17. The direction of expected relationship of the explanatory variables in the model fitting results with the FRAO is positive and consistent with our a *priori* expectation.

The quantity of exponential of the regression coefficient (β), shown under exponential (β), indicates a factor by which the odds changed when the relevant explanatory variable made a unitary change (Szumilas, 2010; and Allison, 2012). The regression coefficient constitute the estimated increase in the log odds ratio of FRAO per unit change in the explanatory variable. In this paper, the odds of a municipality obtaining unqualified audit opinion is referred to as the ratio of the probability that a municipality would have achieved unqualified audit report to the probability that a municipality would not have achieve unqualified audit report given the explanatory variable. For instance, when municipality capacity categorisation changes from low (1) to medium (2), the odds were increased by 1.57, with other factors remaining constant. In the case of structure categorisation, a change from local (1) to a district (2) would result into an increase of the odds by 1.94.

Table 6a: Model Fitting Results

Variable	Coefficient(β)	Std Error	Wald	df	Significance	Exponential(β)
Capacity	0.45	0.19	5.78	1	0.02	1.57
Structure	0.66	0.48	1.92	1	0.17	1.94
Constant	-2.03	0.56	13.29	1	0.00	0.13

Table 6b: 95% Confidence interval Results for Explanatory variables

	95% Confidence .Interval .for EXP(β)	
	Lower	Upper
Capacity	1.09	2.28
Structure	0.76	4.94

Because the 95 per cent confidence interval (Table 6b) of 1.09 to 2.28 is greater than 1, the increase in the odds of 1.94 of a municipality achieving unqualified audit report among SA metropolitan-structured municipalities is statistically significant. This could be attributed to leadership and resource base associated with such structures. The exponential (β) of 1.94 suggests that the regression coefficient for structure of 1.16 provides estimated increase in the odds of FRAO per unit change in the municipal structure category.

Table 7: Classification Results

Observed		Predicted		
		FRAO2		Percentage Correct
		0	1	
FRAO2	0	146	2	98.6
	1	80	6	7.0
Overall Percentage				65.0

With regards to the classification of predicted results on overall classification achieved by logistic regression model (Table 7) reveal that 146 (98.6 percent) municipalities with a poor FRAO were correctly predicted by the model to have failed to achieve unqualified audit report outcome. Similarly, 6 (representing 7 percent) municipalities with unqualified audit report were correctly predicted to have achieved unqualified audit report. In overall, 65 per cent of 234 municipalities (excluding districts municipalities) were correctly classified by the fitted logistic regression model.

The overall classification results and coefficient of determination (R^2) help measure how well the fitted model can predict the criterion variable based on the selected explanatory variables. However, the two do not tell us how well the model fits data used. Consequently, Table 8 presents Hosmer-Lemeshow (HL) test statistic for goodness-of-fit results. Goodness of fit results facilitated to determine whether the model fitting results adequately describes the data. The HL test statistic indicates a good fit because the significance level of 0.615 is > 0.05.

It was noted that the HL test statistic, although incorporated in most statistical packages, fails on reliability criterion each time sample size changes. Therefore, the conclusions drawn in this case were complemented by overall classification results (Table 7). Allison (2012) argues that the HL test presents serious problems associated with the number of groups created out of the sample data. The researchers, in this instance, failed to find any theory in statistical literature that justifies the use of presently set groups of 10 in the SPSS used to analyse the data.

Table 8: Hosmer-Lemeshow Goodness-of-fit Tests

Chi-square	Degrees of Freedom	Computed Significance
0.252	1	0.615

9.2 Stepwise variable selection results

Table 9a presents final results of forward STEPWISE logistic regression used to identify a statistically significant explanatory variable from the two used in this study. Recall that the critical issue in this study is whether the explanatory variable is deemed to be a significant determinant of FRAO. For this purpose, levels of significance of 5 per cent and 10 per cent were used for explanatory variable inclusion and exclusion in the stepwise model fitting results, respectively. The 10% level of significance was used for variable inclusion to be consistent with observation elsewhere that a level of significance less 10% was too restrictive to allow inclusion of "important" variables (Hosmer and Lemeshow, 2013). The results show that municipal capacity to be significant at 0.004 significance level. The municipal structure categorisation could only be included in the model fitting results (stepwise) if the removal level of significance had be set at 15 per cent.

Table 9a: Parameter estimates for stepwise logistic regression procedure

Variable	Coefficient(β)	Std. Error.	Wald	df	Significance.	Exp(β)
Capacity	0.525	0.183	8.260	1	0.004	1.691
Constant	-1.452	0.350	17.199	1	0.000	0.234

Model classification results present in Table 9c showed that 128 (representing 86 per cent) municipalities with poor audit report were correctly predicted by the model not to have achieved unqualified audit. Likewise, 21 municipalities with unqualified audit opinion report were correctly predicted to have attained unqualified audit opinion. The overall correct classification declined by 1.3 per cent as a result of excluding municipal structure categorisation variable through a stepwise procedure. Only 86.5 percent, down from 98.6 percent, of municipalities with modified audit reports were correctly classified to have received modified audit reports.

Table 9b: Classification Results Based on Stepwise Model

Observed		Predicted		
		FRAO2		Percentage Correct
		0	1	
FRAO	0	128	20	86.5
	1	65	21	24.4
Overall Percentage				63.7

The overall significance level of the one-factor logit model using HL test statics showed that the model to be significant given the computed significance value of 0.615 (Table 10), which is greater than 0.05.

Table 9c: 95% Confidence Interval Test

		95% C.I.for EXP(B)	
		Lower	Upper
Step 1[a]	Capacity	1.182	2.418
	Constant		

The 95% confidence interval (Table 9c) was used to estimate the precision of the odds ratio. The 95% confidence interval was used as a proxy for the presence of statistical significance if does not overlap the odds ratio =1 (the presence of capacity does not affect the FRAO. The presence of municipal capacity categorisation in the stepwise model fitting results in higher odds that the municipal structure categorisation.

Table 10: Hosmer-Lemeshow Goodness-of-fit Tests

Chi-square	Degree of Freedom (df)	Computed Significance
0.252	1	0.653

10. Discussion of Results

Explanatory variables' contributions to the FRAO are indicated by the logistic regression coefficients and associated signs. The interpretation given to statistics calculated using data on municipal capacity and structure categorisation should be understood in the context of the coding system used. High, medium and low capacity were coded at 3, 2, and 1, respectively, while municipal structure categorisation was code at 3, 2, and 1 in respect of metropolitan, district, and local municipalities.

In light of statistically significant and sign of regression coefficients (two-factor model), the results indicated that municipalities with high capacity and falling with metropolitan municipal structure have high chances of achieving unqualified FRAO. Municipalities falling within the local municipality structure and having low capacity were more likely to struggle to achieve and sustain unqualified FRAO. This finding is consistent with the a priori expectations referred to in the section 8 of this paper.

Stepwise logistic regression results show that municipalities with high capacity are more likely to achieve unqualified FRAO. The municipal structure categorisation factor was excluded in the model that resulted into an overall correct classification of 63.7 per cent, representing a marginal drop (1.3%) in the overall classification results of the two-factor model. This demonstrated that the aspects in Table 3, which the NT used to make capacity categories (high, medium and low) were indeed relevant in ensuring sustainable positive FRAO. This finding is consistent with the findings by Ireland (2003) providing evidence of association between observable firm characteristics and audit reports in the United Kingdom.

Because the model fitting results do not provide more than 75% correct classification, the study concludes that there are other factors (other than capacity) that matter in the sustained FRAO. In addition, the back-to-basics programme's three performance tracks (high, medium, and low) could benefit from survey of variables similar to those addressed by the 2004 NT-led capacity survey.

11. Conclusions, recommendations, and implications

The primary objective of this study has been to developing and testing a composite model, based on selected municipal attributes, to predict municipal FRAO. The study sought to provide answers to research question in section 3 and provide insights into conclusions provided in previous studies using firms external to the municipal environment. The study used data on 234 municipalities, after excluding district municipalities. A multivariate statistical technique, a logistic regression analysis was employed to develop the model using historical municipal audit outcomes. The two explanatory variables used does not provides 98.6 percent correct classification of municipalities that have consistently received modified audit reports. The selection of the two explanatory variables is not entirely influenced by previous studies on predicting modified audit reports among private sector firms but was guided by the reform efforts undertaken by government to improve municipal financial management, accounting, and reporting.

This paper found a combination of municipal structure and capacity categorisation to contribute to the FRAO. However, stepwise logistic regression results reveal that municipal structure categorisation is not a significant factor if municipal capacity categorisation is present. The model fitting results provides an overall correct classification of not more than 63.7 per cent. The correct classification of municipalities with a history of modified audit reports reduced from 98.5 percent (full model fitting results) to 86.5 percent (stepwise model fitting results). We conclude that there are other factors that can be used to improve the overall correct classification of the model from 63.5 and predict audit outcomes**.** These other factors shall form the basis of investigation in developing and testing a composite model to predict audit outcomes.

The focus on the municipal audit outcomes is important at this stage as the AGSA reports have been used in the past to guide operational clean audit. In addition, public sector auditing practice and decisions are systematically based on financial accounting information. Therefore, the national government can use the composite model to identify municipalities likely to have modified audit reports on a consistent basis and design intervention procedures accordingly.

The employed methodological framework could assist auditors, national government, researchers, and credit scoring agencies. The present study contributes to accounting and auditing research by examining municipal specific attributes that could discriminate audit outcomes and redirect remedial efforts to municipalities predicted to receive modified audit reports.

Because of the significance of municipal capacity categorisation in the model fitting results, we conclude, statistically, that capacity categorisation undertaken by the NT has a predictive value in guiding adoption of municipal efficacy reforms envisaged when MFMA was promulgated. A further possibility would be to examine variables such as compliance index, governance variables, and financial performance index. This paper focused on explaining and predicting FRAO to the exclusion of audit of performance information (AOPI), introduced in

2009. It will be important for further research to consider AOPI, alongside effectiveness of integrated reporting among SA municipalities and documented good practice indicators (Text Box 1).

In light of the concluding remarks, for start, it will be advisable for municipalities to manage aspects affecting financial governance, formulation of financial management improvement plans, audit action plan for managing external audit process, and activities within budget preparation, execution and reporting cycle. These are aspects that guided municipal capacity categorisation and were not specifically disaggregated and considered in the model development.

References

Accounting Standards Boards (ASB) 2012. Presentation of financial statements, ***Standard of Generally Recognised Accounting Practice No. 1***, Pretoria: Accounting Standards Board.

Ahlenius, IB. 2000. Performance audits, evaluations and supreme audit institutions, ***International Journal of Government Auditing,*** 27(1):1-2

Aldrich, JH. and Nelson, FD. 1984. ***Linear Probability, Logit and Probit Models.*** Beverley Hills: Sage University Publications, Inc.

Allison, PD. 2012. ***Logistic Regression Using SAS: Theory and Application***, Second Edition, Cary, NC: SAS Institute

Allison, P.D. 2013. Why I do not Trust the Hosmer-Lemeshow Test for Logistic Regression, *http://www.stasticalhorizons.com/hosmer-lemeshow* (accessed on December 10, 2014).

Ambe, IM. & Magiro, SO. 2008. Evaluation of the implementation of public sector supply chain management and challenges: A case study of the Central District Municipality, North West Province, South Africa, ***African Journal of Business Management***, 2(12): 230-242

Amemiya, T. 1981. Quantitative Response Models: A Survey. ***Journal of Economics Literature***, 19(4): 183-1536.

AGSA. 2014. ***Consolidated general report on the audit outcomes of Local Government,*** Pretoria: Auditor General South Africa.

Caramanis, C. & Spathis, C. 2006. Auditee and audit form characteristics as determinants of audit qualifications, ***Managerial Auditing Journal***, 21(9): 905-920.

Chalmers, AF. (1999). ***What is This Thing called science?*** Maiden: Open University.

Christiaens, J. 1999. Financial accounting reform in Flemish municipalities: an empirical investigation, ***Financial Accountability & Management***, 15(1):21-40.

CoGTA (2014). ***Local government: Serving our communities better!,*** Pretoria: Department of Cooperative Governance and Traditional Affairs. Available at http://www.cogta.gov.za/summit2014/wp-content/uploads/2014/10/plgsummit-backtobasics-discussion-document.pdf

Dopuch, N.R.W.,Holthausen, R.W.& Leftwich, R.W. 1987. Predicting audit qualifications with financial and market variables, ***The Accounting Review***, 62(3): 431-454.

Falkman, P. & Tagesson, T. 2008. Accrual accounting does not necessarily mean accrual accounting: Factors that counteract compliance with accounting standards in Swedish municipal accounting, ***Scandinavian Journal of Management***, 24(3): 271–283.
Feder, G., Just, R.E., & Zilberman, D. 1985. Adoption of Agricultural Innovation in Developing Countries: A survey. ***Economic Development and Cultural Change***, 33(2): 225-298.

Gong, T. 2009. Audit for accountability in China: An incomplete mission, ***Australian Journal of Public Administration,*** 68(S1), S5-S16.

Guba, E.G. and Lincoln, Y.S. 1994. "Competing Paradigms in Qualitative Research", in Denzin, N.K. and Lincoln, Y.S (Eds), ***Handbook of Qualitative Research,*** Thousand Oaks, CA:Sage Publications.

Green, W. 1995. Assessing issues relating to going concern audit qualifications and corporate failure, ***Australian Accounting Review***, 5(10):26-34.

Healy, M. & Perry, C. 2000. Comprehensive Criteria to Judge Validity and Reliability of Qualitative Research Within Realism Paradigm, ***Qualitative Market Research: An International Journal***, 3(3):118-126

Hood, C. 2007. Public Service by Numbers: Why does it vary? Where Has it Come From? What are the Gaps and Puzzles? ***Public Money and Management,*** 27(2):95-102.

Hosmer, DW. and Lemeshow, S. 1980. A goodness-of-fit test for multiple logistic regression model, ***Communications in Statistics***, A10:1043-1069.

Hosmer D.W. and S. Lemeshow (2013) ***Applied Logistic Regression*** (eds). New York: Wiley.

Ireland, JC. 2003. An empirical investigation of determinants of audit reports in the United Kingdom, ***Journal of Business Finance***, 30(7-8): 975-1016.

Johnson, LE. 1998. Further evidence on the determinants of local government audit delay, ***Journal of Public, Budgeting, Accounting and Financial Management,*** 10(3):375-397.

Kennedy, DB. & Shaw, WH. 1991. Evaluating financial distress resolution using prior audit opinions, ***Contemporary Accounting Research***, 8(1): 97-114.

Kinney, AS. and Ruggini, J. 2008. Measuring for Purpose: trends in Public Sector Performance Measurement and Management Practices, ***Government Finance Review***, 24(4): 14-23.

Kuenkaikaew, S. & Varsahelyi, S. 2013. The predictive audit framework, ***International Journal of Digital Accounting Research***, 13: 37-71.

Maddala, G.S. 1991. A perspective on the use of the limited-dependent variable and qualitative research, ***The Accounting Review***, 66(4): 788-807.

McClelland, AJ, & Giroux, G. 2000. An empirical analysis of auditor timing by large municipalities, ***Journal of Accounting and Public Policy,*** 19(1): 263-282.

Miah, N. 1991. Attempts at developing a conceptual framework for public sector accounting in New Zealand, ***Financial Accountability and Management***, 7(2): 83-97

Ngoepe, M. & Ngulube, P. 2014. The need for records management in auditing process in the public sector in South Africa, ***African Journal of Library, Archives & Information Sciences,*** 24(2): 135-150

Payne, JL. & Jensen, KL. 2002. An examination of municipal delay, ***Journal of Accounting and Public Policy***, 21(1): 1-29

Patton, J.M.1992. Accountability and governmental financial reporting", ***Financial Accountability and Management***, 8(3):165-180.

Pohlman, JT. & Leitner, DW. 2003. A comparison of ordinary least squares and logistic regression, ***Ohio Journal of Science,*** 103(5):118-125.

Powell, DM., O'Donovan, M., Ayele, Z., & Chogwata, T. 2014. ***Municipal audit consistency barometer: A consistency measure of resilience in local government,*** Cape Town: Multi-level Government Initiative. Available at: www.mlgi.org.za (accessed on May 23, 2015).

Powell, DM. & O'Donovan, M. 2014. ***Municipal audit consistency barometer (MAC-B2-2014 update): Audit consistency as a measure of resilience in the local government***, Cape Town: Multi-level Government Initiative. Available at www.mlgi.org.za (accessed on May 25, 2015)

Ryan, C., Robinson, M., & Grigg, T. 2002. Financial performance indicators for the Australian local government, ***Accounting, Accountability and Performance***, 6(2): 89-106

Schelker, M. & Eichenberger, R. 2008. Rethinking Public Auditing Institutions: Empirical Evidence from Swiss Municipalities, ***Available at SSRN 1028927.***

Sholtz, Y. & Lepheana, N. 2013. Implementing the MFMA regulations on minimum competency requirements for finance officials:The case of the City of Cape Town, ***IMFO: Official Journal of the Institute of Municipal Finance Officers,*** **13(3): 10-12.**

Szumilas, M. 2010. Explaining Odds Ratios. ***Journal of Canadian Association of Child and Adolescent Psychiatry***, 19(3): 227-229.

Tagesson, T. & Eriksson, O. 2011. What do auditors do? Obviously they do not scrutinise the accounting and reporting, ***Financial Accountability and Management,*** 27(3): 272-285.

Tjur, T. 2009. Coefficients of determination in logistic regression models—a new proposal: The coefficient of discrimination. ***The American Statistician***, 63: 366-372.

Tobin, J. 1958. Estimation of Relationship with Limited Dependent Variable. ***Econometrica***, 22(1): 24-36.

AUD008 Social and governance disclosure by Lonmin Plc pre and post Marikana: A research note

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Abstract

This draft paper is grounded in an interpretive epistemology. It uses thematic content analysis to identify social and governance disclosures to explore the possible relevance of legitimacy theory for explaining changes in social and governance disclosures by South African corporates. The focus of the preliminary study is on Lonmin Plc and changes in the extent of the social and governance disclosures found in its' annual reports one year before and after the events taking place at Marikana.

The results suggest that the company responded to this significant labour unrest by increasing non-financial disclosure dealing directly with the incident. It includes the majority of this information in a specific section of the 2012 annual Report. The company also reduces the extent of social and governance disclosures specific to other sections of the organisation. Collectively, these results point to a legitimation strategy designed to imply that the strike action was an isolated event and not indicative of the corporate social environment at the company as a whole. Related to this, it may also be the case that less specific non-financial disclosure can, paradoxically, bolster legitimacy by avoiding additional scrutiny.

Key words: Corporate governance; Legitimacy theory; Marikana; Social disclosure

1. Introduction

Studies dealing with the value relevance of corporate social responsibility (CSR) disclosures frequently report a lack of statistical significance between environmental, social and governance (ESG) disclosures and financial performance (Hassel, et al, 2005; Jones et al., 2007; De Klerk & De Villiers, 2012). These findings stand in stark contrast with the arguments of the International Integrated Reporting Council (IIRC) and the Integrated Reporting Committee of South Africa (IRCSA) that, for organisations to be sustainable in the short-, medium- and long-term, effective disclosure of non-financial information is paramount (Institute of Directors in Southern Africa [IOD], 2009; IRCSA, 2011; IIRC, 2013). The results are also at odds with the documented proliferation of ESG information being included in the annual or integrated reports of contemporary organisations (KPMG, 2012; Hughen, et al., 2014). As such, the absence of a definitive economic case for ESG reporting begs the question: are other forces at work explaining the increased emphasis being placed on non-financial reporting?

From a neo-institutional perspective, the growth in the sustainability reporting movement cannot be ascribed only to rational economic processes. Instead the nature and extent of ESG information being communicated by organisations to their stakeholders is influenced significantly by powerful social and political pressures (for examples, see Patten, 1992; O'Donovan, 2002; Burritt, 2012; Higgins & Walker, 2012; Gray, 2013). In other words, changes in ESG reporting can be interpreted from a social constructivist viewpoint[4] (Tregidga, et al., 2014). The objective of this research note is to offer initial evidence in support of this assertion from a South African perspective.

Although there is a considerable body of work on ESG reporting in a South African context, much of this work is fairly descriptive (for example, see Marx & Dyk, 2011; Hindley & Buys, 2012; PwC, 2014) and is limited to examining changing trends in non-financial reporting by companies listed on the Johannesburg Stock Exchange (JSE). With some notable exceptions (De Villiers & Barnard, 2000; De Villiers & Alexander, 2014), the majority of the prior local research is also grounded in finance paradigms (see, for example, De Klerk & De Villiers, 2012) which overlook the relevance of socio-political stimuli for the evolution of ESG reporting (Carels, et al., 2013).

Consequently, this draft paper makes use of a neo-institutional[5] theoretical framework to portray South African ESG reporting in a different light. Instead of an exercise in direct value creation, non-financial reporting is presented as an exercise in social legitimation (Tregidga, et al., 2014). Based on the work of Patten (1992; 2002) and De Villiers and Alexander (2014), the research argues that ESG reporting is a social construction designed to appeal to the interests of stakeholders and secure organisational credibility in times of crisis. To do this, the study examines the changes in the frequency of certain social- and governance-related disclosures in the annual reports of Lonmin Plc (Lonmin) before, during and after the wildcat strikes[6] at Marikana on 12 August 2012.

The study deals specifically with this example of industrial unrest in South Africa due to the unusually violent nature of this post-Apartheid strike (Cawadas & Mitchell, 2012; Sorensen, 2012). Although possibly indicative of wide-spread socio-economic ills which plague the country, the strike action is commonly associated with the world's third largest producer of platinum group metals. Its employees were directly involved in the events taking place on 12 August 2012 and the company reported significant decreases in metal output and revenues as a result of the unrest (Lonmin, 2012; Reuters, 2012). Almost three years after the tragic loss of life, the Marikana incident also offers an established case for exploring how an organisation's ESG reporting responds to a social crisis. This is not only important for academics and practitioners wanting to understand the relevance of ESG reporting in the contemporary South African capital markets; the research is expected to contribute to the

[4] According to this viewpoint, corporate governance systems are seen as the product of multiple and conflicting experiences of individuals and not just a rational technical development. The purpose of research is, therefore, to explore the relevance of different views or opinions and avoid reducing the subject matter as is the case with positivist research (Creswell, 2009).

[5] From a neo-institutional perspective, accounting and governance systems are seen as one of the means of legitimising an organisation by creating the appearance of rationality and structure and not just a technical financial development.

[6] A strike begun by workers spontaneously or without support of a union.

limited body of local interpretive corporate governance research in African settings (Brennan & Solomon, 2008; Maroun & Jonker, 2014). It also offers evidence in support of the theorisations of Patten (1992; 2002) and De Villiers and Alexander (2014); highlighting how ESG disclosures change in response to a challenge to legitimacy.

The remainder of this paper is organised as follows. Section 2 provides the theoretical frame of reference and summarised prior research dealing with ESG reporting from a neo-institutional perspective. Section 3 discusses the method. Section 4 presents and discusses the results and Section 5 concludes and identifies areas for future research.

2. Theoretical framework and prior research

According to Suchman (1995), the term 'legitimacy' is a 'generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions'. He goes on to identify three 'types' of legitimacy: pragmatic, moral and cognitive.

Pragmatic legitimacy rests on the organisation being perceived as valuable or aware of the interests and needs of stakeholders (Dowling & Pfeffer, 1975) and is based mainly on 'self-regarding utility calculations' (Suchman, 1995). Moral legitimacy is more normative and arises from the entity following processes and producing outputs which are consistent with the moral values of its constituents (Dowling & Pfeffer, 1975; Suchman, 1995). Finally, cognitive legitimacy is dependent on the extent to which an organisation or its functions become institutionalised or so integrated in day-to-day life that its existence is simply taken for granted (DiMaggio & Powell, 1983; Powell, 2007).

2.1. Maintaining and repairing legitimacy

Being socially constructed, organisations can often find that their standing in society is threatened by either their own activities or exogenous events (DiMaggio & Powell, 1983; Powell, 2007). To this end, Suhman (1995) and Dowling and Pfeffer (1975) outline different strategies for repairing and preserving legitimacy:
In the first instance, the organisation offers a normalising account of the delegitimising event by denying, excusing or justifying it. The aim is to separate the threatening revelation from the rest of the organisation creating a type of 'firewall' which prevents a significant depletion of the organisation's legitimacy reserve (Suchman, 1995).

Similarly, an organisation faced with a threat to legitimacy can attempt to stress that the issue is limited to a specific sector and agree to remedy stated faults. The aim is to acknowledge shortcomings and appear responsive to the concerns of stakeholders while pre-empting additional scrutiny. This often goes hand-in-hand with the organisation inviting more monitoring and review, effectively providing assurances to stakeholders that future occurrences of the event in question are unlikely (Suchman, 1995).

An entity can also make use of disassociation, attempting to create a clear line of demarcation between the threatening event and the rest of the firm (Suchman, 1995). This can be achieved using symbolic displays with the entity making public statements, participating in forums and encouraging active debates on how to best deal with the delegitimised action or event (Ashforth & Gibbs, 1990). It can also depend on formal restructuring of the organisation, relying on moving or closing problematic divisions, charismatic employees to defend a particular position or changes in the executive structure of the firm. The aim is to signal its allegiance with societal expectations and distance the entity from those identified as responsible for the questionable act (Dowling & Pfeffer, 1975).

2.2. Legitimacy theory and ESG reporting

There is a large body of research which deals with the link between ESG reporting and organisational legitimacy (for examples, see Patten, 1992; O'Donovan, 2002; Burritt, 2012; Higgins & Walker, 2012; Gray, 2013). De Villiers and Alexander (2014), for example, describe the development of CSR reporting as an institutional process influenced heavily by isomorphic pressures and the need to secure a sense of pragmatic and cognitive legitimacy. In this context, an organisation faced with additional public scrutiny as a result of a poor environmental track record can use additional disclosure to signal an awareness of societal interests (De Villiers & Van Staden, 2006). For example, Deegan, et al. (2002) examined the environmental disclosures of BHP, and found that the company publishes positive social and environmental information in response to unfavourable media attention. Similarly, Patten (1992) – while examining the effect of the Exxon Valdez oil spill on corporate reporting – argues that changes in the nature and extent of environmental disclosures can be ascribed to perceived changes in the perceptions or expectations of stakeholders. More specifically, the quantum of disclosure dealing with environmental disasters is found to be directly proportional to the perceived significance of the relevant incident (Patten, 2002). These findings are consistent with research suggesting that, due to added political pressure and public interest, large firms are more likely to prepare separate or more detailed CSR reports (Thorne, et al., 2014).

Through the lens of legitimacy theory, additional reporting plays an important role in demonstrating that the organisation acknowledges prior shortcomings and is taking steps to address society's concerns (Laine, 2009b; Brennan & Merkl-Davies, 2014). ESG reporting can also be used to symbolic ends, appealing to the assumptions and beliefs of stakeholders in order to garner support and limit additional scrutiny (Tregidga, et al., 2014). By constructing the image of a sustainable organisation in annual or integrated reports, it also possible for ESG disclosure to be used as a type of legitimacy-buffer, relying on the appearance of effective CSR to immunise the entity form isolated failures (Laine, 2009a; Tregidga, et al., 2014). In this way, non-financial reporting often depends on content, structure and diction to de-emphasise negative ESG actions or deflect attention (O'Donovan, 2002). A resulting sense of sustainability as a 'natural' part of day-to-day operations is combined with references to competency, experience, transparency, accountability and responsibility, personifying the organisation and entrenching a sense of cognitive and moral legitimacy (Higgins & Walker, 2012; Tregidga, et al., 2014).

Attempting to repair or defend claims to legitimacy when faced with a significant ESG crisis can, however, have unanticipated consequences. As explained by Suchman (1995), explicit appeals designed to win credibility can, paradoxically, lead to stakeholder circumspection. As such, effective management of non-financial communication with stakeholders does not necessarily require the provision of more information (Ashforth & Gibbs, 1990). O'Dwyer (2002), for instance, notes that CSR reporting has the 'potential to engender rather diminish societal scepticism in an environment where public pressure is keenly felt by many organisations'. De Villiers and Van Staden (2006) reached the same conclusion. Companies with high environmental impact tend to find generic disclosures less threatening (Solomon, et al., 2013). They also tend to 'decrease specific disclosures when they perceive them to be potentially more damaging than helpful to maintain legitimacy' (de Villiers and van Staden, 2006, p. 426). The same logic may apply to Lonmin's reporting of social and governance-related information in the context of the events unfolding at Marikana.

On the date of the Marikana incident, Lonmin reported that industrial unrest had resulted in an immediate loss of 15 000 ounces of platinum production and resulted in a significant decline in share price on the date of the incident (Reuters, 2012c). In addition to the economic implications, the Marikana incident is considered a significant event in South African history with parallels drawn between the Marikana shootings and the Sharpeville and Soweto uprisings of 1960 and 1976 respectively[7] (Sorensen, 2012). The event attracted significant attention from local and international media due to the number of casualties, as well as the historical sensitivity associated with the South African Police Services' (SAPS) use of force[8] (Marinovich, 2012). Marikana also evoked a response from the investor community, with many questioning whether the industrial unrest was indicative of wide-spread labour problems and the beginning of the end of the South African mining industry (Cawadas & Mitchell, 2012). In line with the arguments of Patten (1992; 2002) and Deegan, et al. (2002) one would expect this to result in an increase of social and governance disclosures from 2011 (one year before the incident) to 2013 (one year after Marikana). At the same time, the company may rely on more generic disclosure to signal its commitment to effective CSR practices and avoid dealing with specific metrics which, as per De Villiers and Van Staden (2006), may simply result in more negative press.

3. Method

This study subscribes to a social constructivist worldview. Language and imagery found in annual or integrated reports does not just describe corporate activity but plays an important role in constructing and reconstructing varying realities (Laine, 2009b). As such, an interpretive textual analysis was relied on to analyse the social and governance-related disclosures in Lonmin's annual reports[9].

[7] These are two well-known uprisings against the Apartheid Government during which police opened fire on protestors. The events attracted significant international media attention and were widely condemned.

[8] The Apartheid Government relied on the South African police to suppress worker rights for almost 60 years (Welsh, 2011).

[9] This is in keeping with the fact that these are the primary reports used by the company to communicate with its stakeholders (see IOD, 2009; Lonmin, 2012a).

For this paper, the emphasis is on the annual reports published in 2011, 2012 and 2013. This is to ensure that there is a 'base' (determined before the outbreak of violence in August 2012) for evaluating changes in the extent of ESG information being included in the reports in the year of and one year after the Marikana incident. It should also be noted that reports prepared before 2011 were specifically excluded due to the possible effects of the, then, recently released discussion paper on integrated reporting and the transition from King II to King III (see IOD, 2009; IRCSA, 2011).

The aim was to examine the content and themes of social-related disclosures, their frequency, and how the information is presented to readers (Laine, 2009b). Due to the fact that the research is concerned with how Lonmin is using social-specific disclosures in its communications with stakeholders to manage legitimacy, articles published by third parties (which may not reflect the company's position) were excluded from the analysis.

Overall, the approach followed is subjective with the data collection and analysis progressing in a hermeneutical manner which was not restricted by a rigid methodological framework (Llewelyn, 2003; Laine, 2009b). In the first stage, the researcher read the 2011, 2012 and 2013 annual reports and identified passages with references to social and governance issues and to the Marikana incident in particular. Relevant excerpts were organised thematically to provide a comparison of the nature and frequency of social and governance-related disclosures from 2011 to 2013. The research uses the same procedure as Solomon and Maroun (2012) and Carels, et al. (2013). The aim was not to follow a scientific approach by counting words and testing for changes in disclosure trends which were statistically significant. Instead, an interpretive approach is followed where the researcher constitutes the data collection and analysis 'instrument' (Merkl-Davies, et al., 2011).

The researcher relied on a systematic analysis of each report to identify main disclosure themes or categories (theme codes) and the specific sections of the annual reports in which these themes were discussed (adapted from Solomon & Maroun, 2012). These themes were interpretively derived from the analysis of the annual and sustainability reports informed by the guidelines provided by Sustainability South Africa and, due to its widespread application, the GRI G3. In addition, the final theme register specifically took into account the disclosure categories identified by similar studies examining reporting trends in South African integrated reports (Marx & Van Dyk, 2011; Solomon & Maroun, 2012; Carels, et al., 2013; PwC, 2014). Duplicated disclosures were eliminated and disclosure themes which were very similar were merged. As an additional validity check, the theme codes were re-examined by the researcher and a research assistant one month later to ensure that the register was accurate and complete.

The final result of the analysis was a simple matrix which disaggregated each annual report into sections and recorded the frequency of social and governance-related disclosure per section. These sections were the main components of the annual reports and were largely consistent with those used in similar prior studies (see Solomon & Maroun, 2011; Carels, et al., 2013). The matrix was then used to compute (1) the cumulative disclosure of social and governance information in the 2011, 2012 and 2013 annual Reports; (2) the frequency of disclosures per theme; and (3) the change in disclosure frequencies over time. These statistics were not intended to 'quantify the social disclosure found in the reports or provide measure of the quality of disclosures. Instead, they were used to gain a sense of the change in the extent of social and governance-related disclosures one year before and after the Marikana incident (Patten, 1992; Patten, 2002).

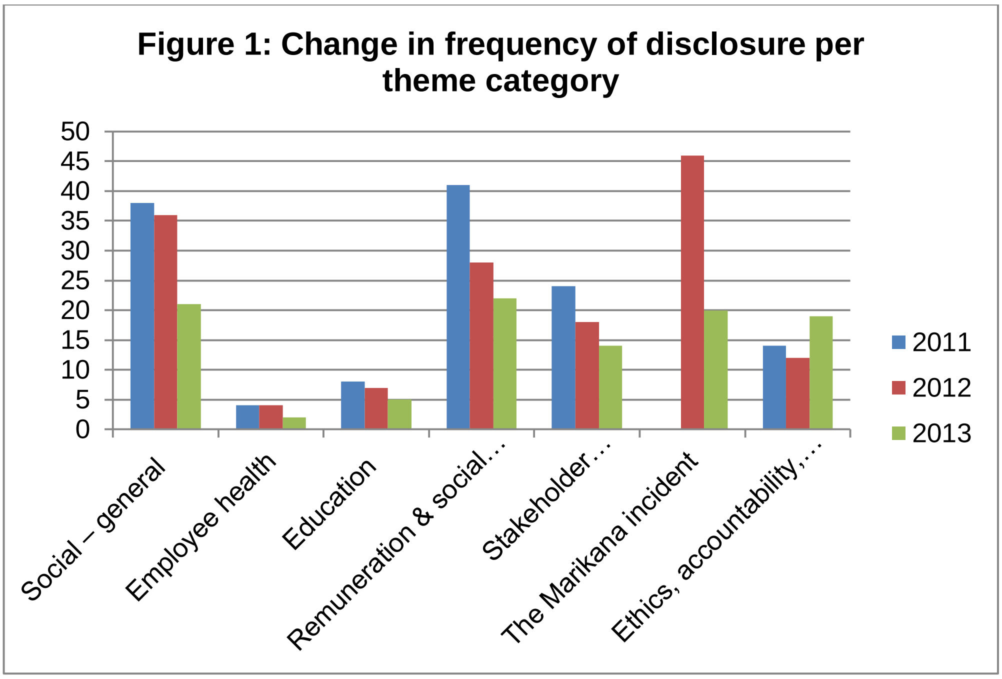
4. Results and discussion

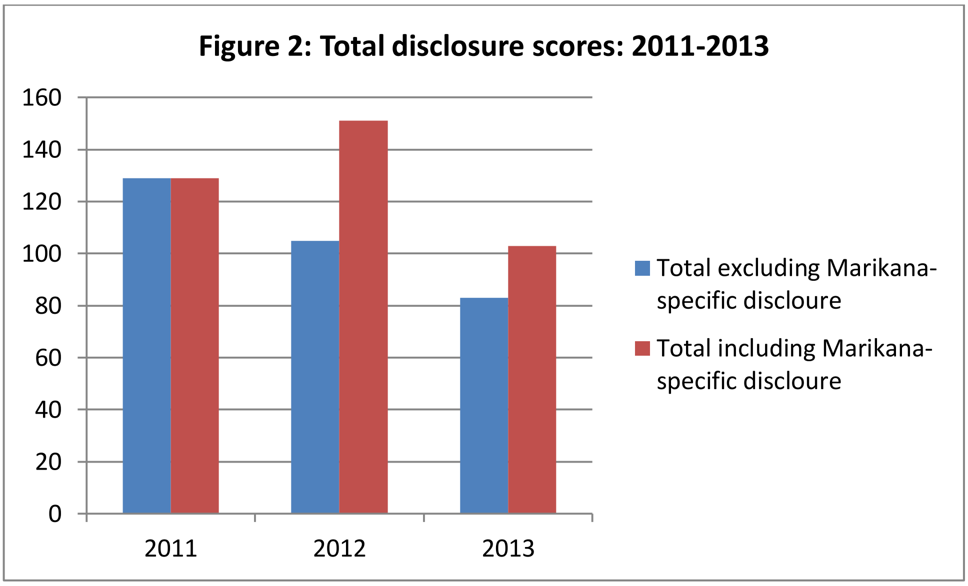
Preliminary results are presented in Table 1 and are consistent with the predictions of Patten (1992; 2002). In response to the events taking place at Marikana, Lonmin appears to have increased the extent of social and governance-related disclosures included in its annual report (2012). The total frequency of social and governance disclosures increases by 18% from 2011 (total score of 128) to 2012 (total score of 151) with most of this attributed to disclosure dealing specifically with the events taking place at Marikana. If, however, the changes in the frequency of disclosures are considered per category, a slightly different perspective emerges.

Table 1: Disclosure scores per theme category

	2011	2012	2013
Social – general	37	36	21
Employee health	4	4	2
Education	8	7	5
Remuneration & social investment	41	28	22
Stakeholder engagement/management	24	18	14
The Marikina incident	0	46	20
Ethics, accountability, transparency	14	12	19
Totals	**128**	**151**	**103**

The statistics in Table 1 above shows that contrary to initial expectations, Lonmin actually decreased the extent of ESG reporting per category year on year, with Marikana-specific information (which is included in a separate section of the 2012 annual report) and the 'Ethics, accountability and transparency' category (which shows a net increase from 2011 to 2013) as the only exceptions. The change in categories is also visually depicted in Figure 1 and Figure 2 below:





At first glance, these results are inconsistent with prior research which posits that companies include additional non-financial information in their annual reports when faced with a crisis of legitimacy (Patten, 2002; Tregidga, et al., 2014). The results, however, suggest that Lonmin adopted a different legitimation strategy. Faced with a crisis of confidence in the aftermath of the strike action, the company cannot simply ignore the implications of Marikana for investor confidence (see Suchman, 1995). In order to ascertain how the Marikana-incident was dealt with by Lonmin, the Author thoroughly scrutinised the 2012 annual report.

The information provided to readers includes are both qualitative and quantitative in nature data. For example, the company reported on lost production time and the direct cost of the strike. It also dealt with issues such the loss of life; the work of the Farlam Commission of Enquiry; and the role of the company's corporate governance systems for implementing any remedial action (Lonmin, 2012).This allows the entity to be seen as responsive to the interests of stakeholders according a sense of pragmatic legitimacy. In particular, multiple examples of the company expressing regret and offering condolences (found throughout the 2012 annual report) personify the organisation and highlight how it is functioning according to socially expected standards thereby securing moral and cognitive legitimacy.

Maintaining and repairing legitimacy, however, also involve the establishment of clear lines of demarcation between the delegitimised event and the remainder of the organisation (Suchman, 1995; De Villiers & Van Staden, 2006). To this end the social and governance disclosures dealing specifically with the Marikana incident are included in a separate section of the 2012 annual report. To further signal how the event was an extraordinary one – and not indicative of daily operations at Lonmin – other ESG disclosures were not increased. As explained by Suchman (1995), the aim is to protect past achievements Decreasing the extent of other ESG information is, therefore, used to signal subtly how - barring the events taking place at Marikana - the company continues to operate as a credible part of the South African mining industry.

A decrease in ESG disclosures in other sectors of the report also highlights how the company is possibly seeking to preserve and repair legitimacy by avoiding scrutiny (Suchman, 1995). As found in an earlier study by De Villiers and Van Staden (2006), South African mining companies frequently decrease the quantum of specific environmental disclosures in their annual reports in order to avoid the added attention of various stakeholders. As discussed above, the unprecedented nature of the strike action means that the company is probably compelled to deal with Marikana in detail in the report in order to avoid accusations and further negative publicity. As explained by Suchman (1995), denial or avoidance of a clearly significant social event is unlikely to be an effective strategy for preserving legitimacy. This must, however, be juxtaposed with the ESG reporting on other parts of the organisation.

It is possible that including additional ESG information on the remaining segments or business units could have acted as an unintended signal to the users of the annual reports that Marikana was indicative of a pervasive ESG challenge being faced by the organisation rather than an isolated issue. In other words, reducing the ESG disclosures in other sections of the reports acts as a subtle signal to stakeholders, allowing the organisation to build trust and preserve its legitimacy reserves. This also provides an explanation for the only other category which reported an increase in the frequency of disclosures.

Ethics, accountability and transparency information tends to be less specific and, as such, pose less of risk of stakeholders asking difficult questions on the basis of ESG metrics included in the 2012 annual report. At the same time, these disclosures often deal with the corporate ethos and, as such, play an important role in communicating the values of the organisation. By increasing the quantum of these disclosures, the entity is able to demonstrate how its values are aligned with generally accepted social standards which champion good governance and corporate transparency. This accords pragmatic legitimacy. At the same time these disclosures preserve the image of the organisation as a responsible actor ensuring that a general decrease in ESG disclosure (other than Marikana-specific information) goes almost unnoticed.

5. Conclusion

This draft paper provides initial evidence in support of the relevance of legitimacy theory for explaining changes in the extent of social and governance information being provided by companies to their stakeholders. In particular, the research deals with how Lonmin changes the extent of its social and governance information included in its annual reports following the widely publicised strike action at Marikana.

In line with expectations (Patten, 1992; 2002), the study shows that Lonmin increased the total social- and governance-related disclosures from 2011 to 2012, followed by a decrease in the following year. Most of this increase is, however, attributable to disclosure dealing specifically with the events at Marikana. Given the unusually violent nature of the strike – and significant public scrutiny – it is simply not possible for Lonmin to relegate the implications of Marikana to a footnote in its 2012 annual report (see Suchman, 1995). In order to create the impression of an organisation which is aware of societal concerns (and which empathises with the loss of life at Marikana) dealing with the strike action in the opening section of the annual report accords moral and pragmatic legitimacy. At the same time, the disclosure strategy is used to create a clear line of demarcation.

By including most of the social and governance information on Marikana in a separate section of the Annual Report (2012), the company is able to signal subtly that it regards the incident as isolated and not indicative of the 'real' organisation. This is supported by decreasing the ESG information (which is not Marikana-specific) in other sections of the annual report (2012). At the same time, the company – mindful of the added public scrutiny – can avoid drawing attention to the CSR activities at other operations which have gone largely unnoticed.

In order to examine exactly *how* the company is mobilising its ESG disclosures to maintain and repair legitimacy, additional research will be needed. This review note simply provides an introductory perspective. The data collection and analysis process has not been completed. In particular, discourse and interpretive text analysis is needed to explicate the functioning of specific legitimation strategies (see Jones & Solomon, 2013; Tregidga, et al., 2014). The preliminary results have also been limited to examining Lonmin's disclosures. To understand better the relevance of legitimacy theory for non-financial reporting, future research needs to explore how other platinum mining houses altered their ESG reporting from 2011 to 2013. Finally, interpretive research making use of detailed interviews with primary stakeholders is needed to illuminate the social construction of South African corporate reporting and how annual/integrated reports are interpreted by their readers.

References

Ashforth, B. E. & Gibbs, B. W. 1990. The Double-Edge of Organisational Legitimation *Organization Science,* 1 (2)**,** 177-194.

Brennan, N., M. & Solomon, J. 2008. Corporate governance, accountability and mechanisms of accountability: An overview. *Accounting, Auditing & Accountability Journal,* 21 (7)**,** 885-906.

Brennan, N. & Merkl-Davies, D. 2014. Rhetoric and argument in social and environmental reporting: the Dirty Laundry case. *Accounting, Auditing & Accountability Journal,* 27 (4)**,** 602-633.

Burritt, R. L. 2012. Environmental performance accountability: planet, people, profits. *Accounting, Auditing & Accountability Journal,* 25 (2)**,** 370-405.

Carels, C., Maroun, W. & Padia, N. 2013. Integrated reporting in the South African mining sector. *Corporate Ownership and Control,* 11 (1)**,** 991-1005.

de Klerk, M. & de Villiers, C. 2012. The value relevance of corporate responsibility reporting: South African evidence. *Meditari Accountancy Research,* 20 (1)**,** 21-38.

de Villiers, C. & Alexander, D. 2014. The institutionalisation of corporate social responsibility reporting. *The British Accounting Review,* 46 (2)**,** 198-212.

de Villiers, C. & van Staden, C. J. 2006. Can less environmental disclosure have a legitimising effect? Evidence from Africa. *Accounting, Organizations and Society,* 31 (8)**,** 763-781.

de Villiers, C. J. & Barnard, P. 2000. Environmental reporting in South Africa from 1994 to 1999: A research note. *Meditari Accountancy Research,* 8 (1)**,** 15-23.

Deegan, C., Rankin, M. & Tobin, J. 2002. An examination of the corporate social and environmental disclosures of BHP from 1983-1997. *Accounting, Auditing & Accountability Journal,* 15 (3)**,** 312-343.

DiMaggio, P. & Powell, W. 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociology Review,* 48 (2)**,** 147-160.

Dowling, J. & Pfeffer, J. 1975. Organizational Legitimacy: Social Values and Organizational Behavior. *The Pacific Sociological Review,* 18 (1)**,** 122-136.

Gray, R. 2013. Back to basics: What do we mean by environmental (and social) accounting and what is it for?—A reaction to Thornton. *Critical Perspectives on Accounting,* In press (0).

Higgins, C. & Walker, R. 2012. Ethos, logos, pathos: Strategies of persuasion in social/environmental reports. *Accounting Forum,* 36 (3)**,** 194-208.

Hindley, T. & Buys, P. W. 2012. Integrated Reporting Compliance With The Global Reporting Initiative Framework: An Analysis Of The South African Mining Industry. *The International Business & Economics Research Journal (Online),* 11 (11)**,** 1249-n/a.

Hughen, L., Lulseged, A. & Upton, D. R. 2014. Improving Stakeholder Value through Sustainability and Integrated Reporting. *CPA Journal***,** 57-61.

IIRC. 2013. International Integrated Reporting Framework. Available: http://www.theiirc.org/wp-content/uploads/2013/12/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf [Accessed 5 June 2012].

IOD 2009. *The King Code of Governance for South Africa (2009) and King Report on Governance for South Africa (2009) (King-III)*, Lexis Nexus South Africa, Johannesburg, South Africa.

IRCSA. 2011. Framework for Integrated Reporting and the Integrated Report. Available: www.sustainabilitysa.org [Accessed 5 June 2012].

Jones, M. J. & Solomon, J. F. 2013. Problematising accounting for biodiversity. *Accounting, Auditing & Accountability Journal,* 26 (5)**,** 668-687.

KPMG. 2012. Carrots and Sticks - Promoting Transparency and Sustianability: An Update on Trends in Voluntary and Mandatory Approaches to Sustainability Reporting. Available: https://www.globalreporting.org/resourcelibrary/Carrots-And-Sticks-Promoting-Transparency-And-Sustainbability.pdf [Accessed 30 June 2013].

Laine, M. 2009a. Ensuring legitimacy through rhetorical changes? A longitudinal interpretation of the environmental disclosures of a leading Finnish chemical company. *Accounting, Auditing & Accountability Journal,* 22 (7)**,** 1029-1054.

Laine, M. 2009b. Towards Sustaining the Status Quo: Business Talk of Sustainability in Finnish Corporate Disclosures 1987–2005. *European Accounting Review,* 19 (2)**,** 247-274.

Llewelyn, S. 2003. What counts as "theory" in qualitative management and accounting research? . *Accounting, Auditing & Accountability Journal,* 16 (4)**,** 662-708.

Maroun, W. & Jonker, C. 2014. Critical and interpretive accounting, auditing and governance research in South Africa. *Southern African Journal of Accountability and Auditing Research,* 16**,** 51-62.

Marx, B. & Dyk, V. v. 2011. Sustainability reporting and assurance: An analysis of assurance practices in South Africa. *Meditari Accountancy Research,* 19 (1)**,** 39-55.

Marx, B. & van Dyk, V. 2011. Sustainability reporting at large public sector entities in South Africa. *South African Journal of Accounting Research,* 25 (1)**,** 103-127.

Merkl-Davies, D., Brennan, N. & Vourvachis, P. 2011. Text Analysis Methodologies in Corporate Narrative Reporting Research. *23rd CSEAR International Colloquium.* St Andrews, United Kingdon.

O' Dwyer, B. 2002. Managerial perceptions of corporate social disclosure: An Irish story. *Accounting, Auditing & Accountability Journal,* 15 (3)**,** 406-436.

O'Donovan, G. 2002. Environmental disclosures in the annual report. *Accounting, Auditing & Accountability Journal,* 15 (3)**,** 344-371.

Patten, D. M. 1992. Intra-industry environmental disclosures in response to the Alaskan oil spill: A note on legitimacy theory. *Accounting, Organizations and Society,* 17 (5)**,** 471-475.

Patten, D. M. 2002. The relation between environmental performance and environmental disclosure: a research note. *Accounting, Organizations and Society,* 27 (8)**,** 763-773.

Powell, W. W. 2007. The New Institutionalism. 2007. Available: http://www.stanford.edu/group/song/papers/NewInstitutionalism.pdf [Accessed 17 October 2011].

PwC. 2014. Value creation: The journey continues. A survey of JSE Top-40 companies' integrated reports. Available: http://www.pwc.co.za/en_ZA/za/assets/pdf/integrated-reporting-survey-2014.pdf [Accessed 10 May 2014].

Solomon, J. & Maroun, W. 2012. Integrated reporting: the new face of social, ethical and environmental reporting in South Africa? *In:* ACCA (ed.). London: The Association of Chartered Certified Accountants.

Solomon, J. F., Solomon, A., Joseph, N. L. & Norton, S. D. 2013. Impression management, myth creation and fabrication in private social and environmental reporting: Insights from Erving Goffman. *Accounting, Organizations and Society,* 38 (3)**,** 195-213.

Suchman, M. C. 1995. Managing Legitimacy: Strategic and Institutional Approaches. *The Academy of Management Review,* 20 (3)**,** 571-610.

Thorne, L., S. Mahoney, L. & Manetti, G. 2014. Motivations for issuing standalone CSR reports: a survey of Canadian firms. *Accounting, Auditing & Accountability Journal,* 27 (4)**,** 686-714.

Tregidga, H., Milne, M. & Kearins, K. 2014. (Re)presenting 'sustainable organizations'. *Accounting, Organizations and Society,* 39 (6)**,** 477-494.

AUD009 Stakeholders' perceptions on the association between ERM structures and internal auditing's contribution towards risk mitigation

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Abstract

A gap is widening between the expectations of internal audit stakeholders and the value that the function adds. One of the areas that internal auditing, based on the professional definition, should add value is the mitigation of risks threatening an organisation. This paper investigates the views of chief audit executives, the chairpersons of audit committees and senior management on the contribution to enterprise risk management that the internal audit functions make in the public sector. This contribution is considered in the context of existing risk management structures and the level of coordination between these structures and internal auditing. Findings reveal that the chief audit executives have very different views from the other two parties, supporting the concern of the Institute of Internal Auditors that stakeholders are in general of the opinion that their expectations of the contributions of internal auditing are not met. The results also indicate that the existence of enterprise risk management structures have very little effect on how the contribution of internal auditing to enterprise risk management is perceived.

Keywords: Enterprise risk management, Internal audit function, Level of coordination, Public sector enterprise risk management, Enterprise risk management structures, Stakeholders of internal auditing

1 INTRODUCTION

Richard Chambers (2014), the chief audit executive of the Institute of Internal Auditors (IIA) Global, the governing body of the internal audit profession, raised a serious concern when he asked the question whether a gap is widening between stakeholders' expectations of the contribution and the value of internal auditing. He based his concern *inter alia* on the findings of the annual studies conducted by PricewaterhouseCoopers on the seemingly deterioration of the perceived value of internal auditing. In the 2014 study (PwC 2014) the three major findings highlighted the significant differences of opinion between the internal audit stakeholders and the head of the internal audit function (IAF) or the chief audit executive (CAE) on what is expected of internal auditing; with only 49% of senior management and 64% of board members indicating that internal auditing is delivering on expectations and 55% of senior management are of the opinion that internal auditing do not add significant value. A survey conducted by Grant Thornton (2015) supports this view, providing evidence that the CAE and audit committee's priorities are not aligned. It seems that internal auditing is at a cross road and that a new way of thinking of what value adding entails is necessary. This is echoed by the IIA (2014) in a research document where one of the top five strategies of internal auditing is to focus on the alignment of activities with the expectations of key stakeholders. The question to be asked is – who are these stakeholders and what are their expectations?

One of the areas that are reoccurring in these surveys as well as in other research, is the role that internal auditing should play in the mitigation of key risks threatening the organisation. The rise of the insurance business, which dates back to the early 1700s, resulted in the emergence and development of risk management techniques (Merna & Al-Thani 2005:31-32). However, not all risks are insurable, thus much development has taken place in modern risk management, as this field is known and used by organisations world-wide today (Deloitte 2013; E&Y 2013). Increasingly, legislation and other forms of guidance on governance include the concept of risk management. One such example is the South African King reports on governance: the first report, *King I* (IoD 1994), did not discuss risk management; the second, *King II* (IoD 2002), addressed risk management to a limited extent; the third report, *King III* (IoD 2009), advanced risk management as a cornerstone of sound governance principles.

The roots of current risk management principles lie in the ultimate objective of private sector management, namely maximising value for shareholders (Meulbroek 2002:5), or the objective of the public sector, namely delivering a service to the public, thus serving the country and/or community (Van der Waldt & Du Toit 2005:46). With reference to risk management in the public sector, according to the IBM Center for the Business of Government (Hardy 2010:7), risk management is not a new concept, and a study performed by Accenture and Oxford Economics (2013:6) indicates that the concept is evolving rapidly. Nevertheless, the idea of viewing risks in a holistic manner (hereafter referred to as Enterprise Risk Management or ERM), is still somewhat unfamiliar in practice, and has been somewhat slower to be implemented across the globe and across various sectors (Odoyo, Omwono & Okinyi 2014:169; Accenture & Oxford Economics 2013:22).

According to various studies by Odoyo *et al.* (2015: 174), E&Y (2013:6), Bolger (2011:12) and De Zwaan, Stewart and Subramaniam (2011:599-600), supported by a position paper by the IIA (2009a), the IAF can and should play a prominent role in supporting ERM. Moreover, the IIA is providing its members with guidance on how internal auditing can contribute to ERM in an organisation (IIA 2012a) and other bodies also provide additional guidance on this topic (Deloitte 2014; Cowan, Camfield, English & Hammond 2014). Although the role of internal auditing in the ERM domain has already been studied, it seems, after a thorough search on various databases, that limited research has been conducted on the public sector specifically and nor has the contribution of internal auditing in association with existing ERM structures (such as a risk management department, framework, committees, etc.) been investigated. In addition, the views of the IAF's stakeholders on this aspect have not yet been obtained and compared.

In the context of the above, the main objective of the study is to determine, based on the opinion of internal audit stakeholders, whether there is an association between the ERM structures and the contribution that IAF makes towards public sector ERM activities. Hence, the views of CAEs as well as senior management are obtained and compared – specifically the views of the chair of the independent oversight committee (audit committee chairs or CACs) and Accounting Officers (AOs) in the South African public sector. Furthermore, the extent to which ERM is embedded within organisations (the maturity of risk management) and the level of coordination between ERM structures and the IAF are likely to influence the possible contribution made by internal auditing. Therefore, to address the main objective, two secondary objectives need to be addressed; first to determine the coordination between ERM structures and the IAF, and secondly, the contribution of the IAF towards ERM activities.

This study will contribute to the body of knowledge of both risk management and internal auditing. It will also provide public sector senior management and CAEs with valuable information on whether internal auditing is perceived by stakeholders to contribute to ERM, as well as on the role that existing ERM structures play, which could result in CAEs or AOs implementing a different strategy to enhance ERM and/or internal auditing, if necessary. It will also provide the audit committee with information on whether internal auditing is adding value, taking into account the existence (or a lack thereof) of ERM structures. Lastly, based on the possible contribution of and the coordination between internal auditing and ERM structures, the legislator and regulator of the public sector could be influenced to provide clearer guidance or regulations to enhance the effectiveness and efficiency of risk management practices.

A literature review was conducted to provide a theoretical foundation for the research objectives, after which the empirical research was conducted. The findings of the review and the empirical research are presented in the remainder of the paper.

2 STAKEHOLDERS OF INTERNAL AUDITING

As indicated above, it seems that the gap between the expectations of stakeholders and the services that internal auditing is providing, is widening. To understand what is expected of internal auditing, it is firstly necessary to understand who these stakeholders are, specifically within the public sector, and what their expectations entail. According to Miles (2012), stakeholder theory implies that apart from the traditional shareholders of organisations, other parties are involved; from employees to even competitors, classified in either primary stakeholders, secondary stakeholders or other stakeholders (Preble 2005:415). Paape, Scheffe and Snoep (2003:251) suggest that internal auditing's primary stakeholders are either internal or external; the first being senior management and the latter being external auditing, regulators and the public. Güner (2008:31) argues that internal auditing should always be aware of who its stakeholders are, what their expectations are, identify the performance gap, prioritize their demands and develop responses to meet their expectations.

With regard to the role of internal auditing in mitigating the risks of an organisation, prominent risk guidance documents (COSO 2004:83; AS/NZS 2004:27) suggest that the board of directors (and its audit and/or risk committee) and senior management (and the risk department and/or chief risk officer (CRO)) are the key role-players. However, in the South African public sector, the AO is the main authority, supported by an independent oversight body, namely the audit committee (RSA-MFMA 2003:S62(1)(C)(ii); S165(1)(b); S166(1); RSA-PFMA 1999:S38(1)(a)(ii)) as well as a senior management team. For internal auditors to be able to identify and meet the expectation of these stakeholders, they will need to understand what these stakeholders' duties with regard to risk management are; which are briefly explained below.

2.1 Accounting Officer

The AO is according to legislation (RSA-MFMA 2003:S62(1)(c)(i); RSA-PFMA 1999:S38(1)(a)(i)) and guidelines (IoD 2009:73-74; IIARF 2009a:50) ultimately responsible for sound corporate governance structures, including a risk management framework; with duties including, *inter alia*, setting the risk philosophy for the organisation as a whole; approving the risk appetite and risk tolerance that the organisation is willing to accept; understanding all the key risks; ensuring that the treatment of key risks is effective; ensuring that the overall risk management framework is efficiently implemented and maintained; and that communication of risk management to all stakeholders are effective and efficient. The AO mostly delegates these responsibilities to a committee, being either the audit committee or, if appropriate or necessary, a separate risk committee (De Zwaan *et al*. 2011:594; IIARF 2009a:51; PwC 2008:10). The risk committee's ultimate responsibilities are to ensure that the risk management framework is implemented and maintained, and to provide the AO with assurance that the above is functioning as approved. It also has the objective to ensure that the organisation's risk management framework keeps track of current best practices (IoD 2009:75).

Studies (IIARF 2009a:50; PwC 2008:34-36; PRMIA 2008) on the status of global best practices of risk management report that respondents also agreed that risk management should be a board priority – both in the private and public sectors. But is the board or the AO recognising and accepting its responsibility when it comes to risk management? In a Deloitte study (cited in Beasley, Branson & Hancock 2008:44), the percentage of financial institutions acknowledging that oversight responsibility lies with the board rose from 57% in 2002 to 70% in 2008. However, the IIA Research Foundation (IIARF 2009a:12) found that only 39% of executive management and 52% of board members are of the opinion that sufficient information on risk reaches the appropriate decision making parties, with 51% of the respondents being satisfied with accuracy, 31% with completeness and 50% with the timeliness of information used in risk management activities. More recently, a study conducted by Coetzee and Lubbe (2013:50) on the risk maturity of South African organisations revealed that the implementation of a formal risk management framework in the public sector is lacking significantly behind that of the private sector, including the reporting and communication of risk-related issues. This raises the question as to whether the AO can really take full ownership of risks if they are not properly informed. Is it their responsibility to make sure they get the complete picture, or is it their senior management teams' responsibility to provide them with it, or do both parties have a responsibility? According to the professional definition (IIA 2012b), internal auditors, as assurance providers on risk management is most probably in the best position to ensure that the AO gets an overview of the whole risk management framework that is implemented and managed by the senior management team.

2.2 Senior management

The AO has as a main responsibility the establishment and implementation of the overall risk management strategy; thus the day-to-day risk-related activities that are in line with the organisation's vision. Thereafter, the strategic objectives has to be aligned with the risk appetite, as determined by the AO, by managing the organisation's risk profile in compliance with its risk framework (IoD 2009:75-76; COSO 2004:84-87; RSA-MFMA 2003:S62(1)(c)(i); RSA-PFMA 1999:S38(1)(a)(i)). Studies revealed that these tasks are mostly delegated to a CRO and/or risk department (Accenture & Oxford Economics 2013:14; PwC 2008:10) and a risk steering committee (Coetzee 2010:324); with their duties including, *inter alia*, establishing and communicating the risk management department's vision; ensuring that other relevant parties, such as the risk committee, are properly trained on risk management; and managing the risk function in terms of determining and implementing appropriate risk management infrastructures, policies and processes; establishing methodologies and facilitating the use of tools and techniques; facilitating risk identification and assessment; implementing risk reporting structures; and ensuring that risks are appropriately treated and monitored.

Summarising the view of prominent chief executives across the globe (Anonymous 2009:54-60), the future of risk management is a certainty with CROs playing a more prominent role in the ERM approach (which is a holistic approach to risk management), and the presence of a CRO being positively associated with the scope of implementation of a risk management framework (Beasley *et al.* 2005:529). For example, a company in the USA recently announced that they are adding the CRO to the board of directors and investors responded by increasing the stock price by 7% (Lam 2009:24). Concerning facts include that apart from the CRO, 70% of organisations (PwC 2008:36) do not have other full-time risk management staff; the risk department's staff complement ranges from between one to three employees (IIARF 2009a:8); and the credit crunch affected many global banks, resulting in a poor job market for risk professionals (Campbell 2009:12). The status of the risk management department and/or CRO is, however, complimented by the fact that many (between 30% and 40%) are actuaries, qualified risk managers or have a degree in a related field (PRMIA 2008:12; Kleffner, Lee & McGannon 2003:59). Various studies indicate growth in the appointment of risk management personnel – a few years ago, divisions averaged only one to two employees (PwC 2008:10), but by 2013, 58% of organisations indicated a significant increase in staff (Accenture & Oxford Economics 2013:14). For the South African public sector it seems that risk management is a relatively new concept and that most organisations have a risk management structure (Coetzee 2010:323), mainly consisting of a newly appointed CRO (Coetzee 2010:324), supported by a small budget (Erasmus, Barac, Coetzee, Fourie, Motubatese, Plant, Steyn, Van Staden 2014:6).

After obtaining an overview of the responsibilities of both the AO and senior management towards the mitigation of risks, it seems that these two parties have an enormous task. For internal auditing to assist in this task, it is important to obtain these stakeholders' perceptions on the contribution that internal auditing is making towards ERM.

3 RISK MANAGEMENT AND INTERNAL AUDITING

To answer the research question on what internal auditing contributes to ERM, it is first important to consider ERM structures in an organisation. It is argued that the maturity level of ERM structures is likely to influence the role of internal auditing; conversely, less risk maturity will probably result in a need for consultation, while a higher level of risk maturity will result in assurance activities (IIA 2009a:8). This section thus first addresses the secondary research question, namely the existence of ERM structures, and the level of coordination between these structures and internal auditing. Thereafter the main research question, namely the contribution of internal auditing toward public sector ERM, is investigated.

3.1 ERM structures and the level of coordination with internal auditing

As with any aspect of an organisation, ERM can only be successfully implemented and maintained if there is a well-defined strategy that informs the risk management framework; consisting of the totality of the structures, processes, systems, methodology, individuals involved, to name a few, that an organisation uses to implement its strategy (Psica 2008:53). To address the needs of a specific organisation, each organisation requires a unique ERM framework based on its strategy. Although the IAF is an internal function, the compilation of the function can be either in-house (all full-time employees), outsourced (appointing a consultant to conduct the services of the function) or co-sources (a combination of in-house and outsourced) (IIA 2009b). However, the type of IAF structure will be determined by the needs of the organisation and should not, in theory, affect the value that the function adds to the organisation (Barac & Motubatse 2009:947). Although there are benefits and pitfalls for all three options, in practice, studies within the South African public sector (Erasmus *et al.* 2014:9-11) indicate that stakeholders mostly rely more on the activities conducted by the outsource function.

The IIA (2009a:3-4; 2012a) stipulates that the role of internal auditing with regard to ERM is mainly to provide assurance on whether an ERM strategy has been correctly defined and implemented to assist the organisation in mitigating its risks. To be able to provide assurance on ERM, the IAF must be independent (IIA 2012b:1100). If the assurance engagement(s) performed by the IAF indicates that the ERM strategy is reliable and addresses the needs of the organisation, internal auditing should ensure that the key risk areas identified by ERM are covered in the audit plan (IIA 2012b:2010), and should perform risk-based internal audit engagements (IIA 2012b:2210.A1). The IIA (2009a:4-6) also indicates that the IAF can perform various types of activities related to consulting with regard to ERM, but that this should be done with safeguards – again, the IIA is guiding its members to operate independently from the ERM structures. To provide guidance on internal auditing in the public sector, the IIA Research Foundation has developed a capability model which identifies the fundamentals for an effective IAF in a government structure and the broader public sector (Ziegenfuss 2010:68; IIARF 2009b). With regard to risk management, for government organisations to be on Level 4 of the five-level capability matrix, internal auditing must provide overall assurance on, *inter alia*, risk management (IIARF 2009b:61).

In order for the IAF to be able to provide assurance on ERM and incorporate the outcomes of ERM processes into its activities (such as focusing on key risk areas and performing risk-based audit engagements), on the one hand, internal auditing has to be independent from ERM structures; on the other hand, it has to work together with such structures in areas such as communicating appropriately on risk-related issues (Liu 2012:288; Bolger 2011:12; IoD 2009:84-86; 97-99; PwC 2008:11). ERM structures and the IAF should thus constantly update each other on issues such as potential new risks, loss events or a lack of internal risk mitigating activities. A relatively new tendency is to implement an internal risk steering committee (Coetzee 2010:324), where various role players, such as the CAE and CRO, can meet on a regular basis and discuss risk-related issues. However, thus far, not much literature is available on the level of coordination practices between ERM structures and the IAFs; hence, the study reported in this paper obtained the views of CAEs, CACs and AOs in this regard for South African public sector national departments. This aim led to the first hypothesis, linked to the secondary research objectives:

H_1 There are differences between the perceptions of CAEs and internal audit stakeholders on the existing level of coordination between the IAF (in-house and outsourced) and ERM structures.

3.2 Internal auditing's contributions to ERM

As mentioned above, the IIA provides guidance to its members on the activities that they should, could and should not perform with regard to ERM (IIA 2009a). Core activities include providing assurance, as well as evaluating and reviewing the management of risks, such as the ERM processes followed. Legitimate activities that could be performed, but should be performed with caution, include consulting activities at both the strategic and the operational level. The IIA also stipulates that the IAF's annual plan should incorporate addressing key risks threatening the organisation (IIA 2012b:2010), as well as performing risk-based internal audit engagements (IIA 2012b:2210.A1), where each engagement should focus on the risks that affect the activity under review. The audit findings on what influences the current risks documented in the risk register should be communicated to the ERM structures to ensure that the risk register is updated (Campbell 2008), closing the loop which involves ERM structures identifying risks, and the IAFs providing assurance and reporting back to the ERM structures. Lastly, the IIA (2012:2050-2) also provides guidance to its members on the idea of combined assurance services, which, according to a study conducted by Decaux & Sarens (2015:57) means less surprises to the board and management, enhancing the adequate management of risk across the organisation, incorporating various assurance parties, but also minimising duplication.

With regard to the various areas discussed above where the IAF can or should contribute to the ERM, several studies, both in practice and academic, provide supporting evidence on the contributory roles that the IAF needs to maintain to enhance ERM in organisations (Odoyo *et* *al.* 2014; Liu 2012:290-292; De Zwaan *et al.* 2011:598-599). The second hypothesis as part of the secondary objectives tested in this study obtains the views of CAEs, CACs and AOs in this regard for the South African public sector:

H_2 There are differences between the perceptions of CAEs and internal audit stakeholders on the contribution of the IAF towards ERM.

As mentioned previously, the level of contribution of the IAF towards ERM is influenced by the risk maturity of an organisation; in other words, the extent to which ERM has been embedded across the organisation (IIA 2009a:8). However, very few studies integrate an examination of the contribution of the IAF towards ERM with an exploration of the risk maturity of the organisation. Sarens and Christopher (2010) obtained evidence on the association between governance guidance documents and the practices of risk management in Belgium and Australia. They concluded that weak guidance results in less developed risk management practices, while strong guidance is associated with better developed risk management practices. E&Y's (2013) study concluded that mature risk management within organisations drives financial results. The question arises whether this tendency will also be reflected in how the existence of an ERM structure (being independent from the IAF, with various levels of coordination between the two parties) influences the contribution of the IAF on seven aspects relating to the management of risk for the organisation; thus strong ERM structure results in high level of contribution of the IAF towards ERM and a weak ERM structure results in a lower level. This then led to the third hypothesis, addressing the main research objective:

H_3 There is an association between the existence of a full-time ERM structure, or the ERM structure's independence from the IAF, or the level of coordination between the ERM structure the IAF (in-house and outsourced), and the contribution of the IAF towards ERM.

The research method and research design applied in the study to test the hypotheses are outlined in the next section.

4 RESEARCH METHOD

To achieve the research objectives, a literature study were conducted to contextualise the existence of an ERM structure, its independence from the IAF, possible coordination between an ERM structure and the IAF, and the effect of these three elements on the possible contribution of the IAF towards ERM. Data on the status of and demand for internal auditing in South African public sector were gathered by means of a survey conducted at national, provincial and local government organisations. The questionnaires were mainly completed by means of personal or telephonic interviews with the departments' CAEs, CACs and AOs, or their representatives, namely chief financial officers (CFOs) or chief operation officers (COOs). The final survey includes the views of 124 CAEs, 93 CACs and 129 AOs from a targeted 40 national departments, five departments per province (45) and nine metros, 50 district and 53 local municipalities (112). The final response rate for national departments

(CAEs = 77%, CACs 75%, AOs = 77%), provincial departments (CAEs = 75%, CACs 37%, AOs = 100%) and municipalities (CAEs = 51%, CACs 39%, AOs = 40) were acceptable.

This article is based on the data gathered on their perceptions on the existence of an ERM structure in their organisations, and on whether the structure operates independently from the IAF (Yes/No/Unsure), the level of coordination between the ERM structure and the in-house and outsourced IAF (High/Medium/Low/None), and the contribution of the IAF with regard to seven ERM activities (a Likert-type scale ranging from 1=no contribution to 5=significant contribution). Not all questions were answered by all participants (refer to N in the tables below).

Non-parametric Kruskal-Wallis tests were conducted to obtain evidence on the first two hypotheses. The Kruskal-Wallis test was used because the data are ordinal scale data and the sample sizes are small. For the first hypothesis, "high" is coded as 1, "medium" as 2, and "low" as 3. This means that a lower mean indicates a higher level of coordination between the IAF and the ERM structures. The Chi-square test for independence was conducted to determine whether there is an association between the ERM structures and the contribution of the IAF towards ERM activities. The resultant cross-tabulations did not meet the requirement that less than 20% of all cells should have expected counts less than 5, and although 34.5% of the cross-tabulations meet the requirements, 65.5% do not, therefore the Linear-by-Linear test results were used to determine the statistical significance of the association. According to Agresi (1996, cited by Howell 2007), the standard Pearson Chi-square is more sensitive to small sample sizes than the ordinal or linear Chi-square; this underpinned the use of the Linear-by-Linear results in this instance. For this test, the Likert-type scale responses for each question are regrouped into two groups: responses of 1 to 3 are put in a group and recoded as '1', responses of 4 and 5 are put in a separate group and recoded as '2'. It is assumed that responses of 1 to 3 indicate a limited contribution by the IAF to ERM activities, whereas responses of 4 and 5 indicate a significant contribution.

Limitations of the study include that the study is only conducted in the South African government; further studies should be conducted to include the public service in other countries as well as the private sector. Furthermore, although most questionnaires are completed by means of a personal interview, some of the questionnaires are completed by the respondent on his/her own and then returned to the research team. However, it was confirmed with the participant that such questionnaires were completed by him/her and if not, these questionnaires were eliminated from the study. Lastly, it was decided not to include CRO due to most risk management structures within the South African public sector being relatively young.

5 RESULTS

The findings of the statistical analysis are presented in this section. For the first hypothesis, the differences between perceptions of CAEs, CACs and AOs on the level of coordination between the IAF and ERM structures were tested by using the Kruskal-Wallis test. The results are presented in Table 1. Fewer participants (between 26 and 37, compared to 42 to

110) answered the question relating to the outsourced IAFs' level of coordination because the structure of most IAFs was either in-house (all internal audit activities were performed by an in-house function) or co-sourced (most activities were performed by an in-house IAF with only a few activities outsourced to an external provider).

Table 1: Level of coordination between IAF and ERM structures

Stakeholder	In-house IAF			Outsourced IAF		
	N	χ^2	*p*	N	χ^2	*p*
CAE	110	13.387	0.001	30	0.102	0.950
CAC	42			26		
AO	54			37		

For the first hypothesis, there is sufficient sample evidence, at a 5% level of significance, to accept H_1 for in-house IAFs. Thus, there is a statistically significant difference between the three groups with regard to the level of coordination between the in-house IAF and the ERM structures ($p<0.05$). Furthermore, the mean ranks indicated that the CAE group (a mean rank of 92.65) tend to rate this level of coordination as more prominent than the AO and CAC groups (mean ranks of 129.26 and 105.56 respectively). However, for the views on the outsourced IAF, at a 5% level of significance, the sample evidence is not sufficient ($p > 0.05$) to accept H_1. This implies that the three sets of stakeholders do not differ statistically significantly on the level of coordination between the outsourced IAF and the ERM structures (a mean rank for CAEs of 46.73, a mean rank for CACs of 45.94 and a mean rank of 47.96 for AOs).

Guidance (IIA 2009a; 2012:2050; IoD 2009:84-86) and other studies (Coetzee & Lubbe 2011:29-40) identifies seven areas where the IAF can contribute to ERM. Kruskal-Wallis tests were performed to ascertain whether the three groups perceive the contribution of the IAF towards these ERM activities differently. The results are shown in Table 2.

Table 2: Contribution of the IAF towards ERM activities

Contribution	N			χ^2	*p*
	CAE	CAC	AO		
1) Assurance on ERM	107	79	119	2.098	.350
2) Assurance on risk management process(es)	110	80	119	1.193	.551
3) Strategic consulting	104	78	111	12.824	.002
4) Operational consulting	103	78	117	8.678	.013
5) Combined assurance	104	82	114	.072	.965
6) Risks included in audit engagements	114	84	125	7.099	.029
7) Update risk register with audit findings	105	79	118	1.620	.445

For four activities (nr 1, 2, 5, 7) the second hypothesis is not rejected at a 5% level of significance ($p > 0.05$), which implies that the three stakeholder groups do not perceive the level of contribution by the IAF towards providing assurance on these activities differently. However, for the other activities, statistically significant differences at a 5% level of significance are recorded between the three groups with regard to the perceived level of contribution by the IAF. These three activities are strategic consulting, operational consulting and internal auditing incorporating risks into the internal audit engagement(s). Furthermore, the mean ranks indicated that the CAE group tends to rate most of the contribution of the IAF towards ERM as more significant than the AO and CAC groups (strategic and operational consulting, risks incorporated into the audit engagements and updating of the risk register with internal audit findings). The AO group believes that the IAF contributes to assurance on risk management processes (mean rank of 158.59 compared to 156.96 for CACs and 146.96 for CAEs) and combined assurance (mean rank of 151.87 compared to 150.17 for CACs and 149.01 for CAEs). The CAC group (163.52) tends to rate the contribution of the IAF towards assurance on ERM as more significant than the AO and CAE groups (150.3 and 148.24 respectively).

With regard to the third hypothesis, on the association between the ERM structures and the contribution of the IAF towards risk management activities, Linear-by-Linear Association tests were used. The ERM structures include the 'existence of a full-time ERM structure', 'the operation of the ERM structure independent from the IAF', 'the level of coordination between the ERM structure and in-house IAF', and 'the level of coordination between the ERM structure and outsourced IAF'. The contribution of the IAF towards ERM activities includes the seven categories as mention above. The results are set out in Table 3.

For this hypothesis, H_3 is rejected at a 5% level of significance for most associations. The AO respondents perceive the highest level of association between the ERM structure and the contribution of the IAFs towards mitigating risks (10 of the 28 possible associations), followed by the CAE respondents (4 of the 28 possible respondents). Concerning is that, according to the CAC respondents, which are the overseer of internal auditing, no association exists between the existing ERM structures within the organisation and the contribution of the IAF towards mitigating risks. According to the CAE group, the IAF has to be independent from the ERM structure to be able to provided assurance on ERM; coordination between ERM structures and the IAF is essential in providing strategic ERM consulting as well as updating the risk register with internal audit findings; and the existence of an ERM structure is needed for the IAF to incorporate key risks into the internal audit engagements performed. The AO group is of the opinion that the existence of a full-time ERM structure will influence the contribution of the IAF in providing assurance on ERM and incorporating key risks when performing audit engagements; and the coordination between ERM structures and the in-house IAF will influence almost all areas of IAF contribution whereas for the outsourced IAF, only strategic and operational consulting will be affected.

It can thus be concluded that there is a statistically significant association between the ERM structures and the contribution of the IAF towards risk management activities in only 14 of the 84 cross-tabulations, mostly perceived by the AO. This may be due to perceptions among senior management that in-house IAFs should contribute to providing assurance on ERM, (three significant associations) as well as incorporate the key risks of the organisation into their daily activities (three significant associations), and that outsourced IAFs should contribute more on consulting advice (two significant associations).

Table 3: Association between ERM structures and contribution of IAF towards ERM activities

Stakeholder	ERM structures	Contribution of IAF to ERM activities																				
		Assurance on ERM			Assurance on risk management process(es)			Strategic consulting			Operational consulting			Combined assurance			Risks incorporate in internal audit engagements			Update risk register with internal audit findings		
		N	χ^2	*p*	N	χ^2	*p*	N	χ^2	*p*	N	χ^2	*p*	N	χ^2	*p*	N	χ^2	*p*	N	χ^2	*p*
CAE	Full-time	105	3.398	.065	108	.784	.376	102	.954	.329	101	.415	.520	102	.133	.716	112	5.443	.020	103	.210	.647
	Independent	76	6.189	.013	79	4.049	.44	73	.331	.565	72	.099	.753	72	.537	.464	80	1.689	.194	74	1.916	.166
	Coordinate (In-house)	97	1.836	.175	98	.488	.485	95	8.556	.003	93	3.052	.081	93	.792	.373	102	2.210	.137	96	7.391	.007
	Coordinate (Outsourced)	27	.981	.322	30	.063	.802	29	.000	.983	30	.683	.409	28	3.305	.069	30	.262	.609	29	.019	.891
CAC	Full-time	76	1.013	.314	77	.117	.732	75	.073	.787	75	.208	.648	79	.802	.371	81	.001	.975	76	.024	.877
	Independent	66	.081	.776	66	.231	.631	65	.001	.973	65	1.393	.238	68	.507	.476	71	.408	.523	67	.083	.773
	Coordinate (In-house)	36	.780	.377	37	1.735	.188	35	.050	.823	33	.157	.692	38	.150	.698	38	1.690	.194	35	.598	.439
	Coordinate (Outsourced)	22	.658	.417	22	1.381	.240	21	1.364	.243	20	.954	.329	23	1.255	.263	22	1.493	.222	21	.848	.357
AO	Full-time	118	4.859	.028	118	.440	.507	110	.182	.670	116	.333	.564	113	1.500	.221	124	3.896	.048	117	.459	.498
	Independent	94	.249	.618	92	.030	.862	85	.417	.518	91	.035	.851	88	.062	.803	98	.574	.449	92	.819	.365
	Coordinate (In-house)	53	2.248	.134	53	5.083	.024	51	13.31	.000	51	9.306	.004	51	6.379	.012	52	13.153	.000	50	11.29	.001
	Coordinate (Outsourced)	36	2.505	.114	37	1.177	.278	36	5.274	.022	34	4.508	.034	36	3.602	.058	37	3.639	.056	35	1.106	.293

6 CONCLUSION AND RECOMMENDATIONS

In this article, the contribution of internal auditing to the ERM activities of organisations, as perceived by the main stakeholders of an IAF (CAEs as heads of the IAF, CACs and AOs representing senior management) is investigated. The literature confirms that the perceptions of internal auditing's stakeholders differ from their expectations and is a concern for the profession. Furthermore, according to legislation as well as applicable guidance from the IIA and King III regarding the South African public sector, internal auditing should play a prominent role in risk-related activities to ensure that the risks threatening an organisation are mitigated to an acceptable level. The perceptions of these three sets of stakeholders on the contributions made by the IAF with regard to ERM activities are investigated in the context of the ERM structures currently in place, as well as the level of coordination between these structures and the IAF. The reason for this is that the role that internal auditing can play where a sound ERM structure and proper coordination are in place should differ vastly from its role where these are not in place.

With regard to the perceptions of these groups on the level of coordination between the IAF and the ERM structures, the participants rated the perceived level of coordination between in-house IAF and the ERM structures as statistical significantly lower than between the outsourced IAF and the ERM structures. The CAE group indicates a significantly higher level of coordination (mean rank) than the other two groups for their in-house IAF. However, the CAE group's objectivity could be questioned, as the CAEs are responsible for the activities of the in-house IAF. It is a matter for concern that especially the CAC group, as the overseers of the IAF, do not hold the same views as the CAE group on the level of coordination between the in-house IAFs and the ERM structures. However, whether there is coordination between the IAF and ERM structures or not, the question could be asked whether the CACs and AOs of the organisation perceive the IAFs' contribution to ERM to be at an acceptable level (high or medium)? In respect of the perceptions of the three groups on the contribution of the IAF towards ERM, both the CAC and AO groups mostly rank the contribution on the seven activities listed lower than the perceptions of the CAE group. As was expected, for the three assurance-related contributions (nr 1, 2 and 5), no significant differences were found between the three groups.

There are some causes for specific concern. Firstly, the CAC group, as overseers of the IAF, rates the contribution of the IAF in most activities listed as very low (especially in respect of its providing assurance on the risk management process, strategic consulting and operational consulting and updating the risks register with audit findings). Secondly, there are some areas where statistically significant differences do exist (strategic consulting, operational consulting, and the IAFs' incorporating the risks of the organisation into their internal audit engagement plans). Thirdly, the CAEs mostly rate their perceived contributions substantially higher than the other two groups. Especially the results on core IAF activities, such as the IAF's incorporating the risks of the organisation into internal audit engagement plans (a result of a risk-based audit strategy), and the risk register's being updated with internal audit engagements' findings (a result of management's trust in the work of the IAF), are reasons for concern. These findings again reflect the negative perceptions of the CAC group and the

AO group on the contribution of the IAF towards core ERM activities as stipulated by the IIA.

The analysis of the various ERM structures and level of coordination in association with the contribution of the IAF towards ERM activities showed that only 16.6% of the cross-tabulation revealed a statistically significant association, mostly identified by the AO group (11.9%). However, even where the groups indicated that no formal ERM structures exist or that the level of coordination between the IAF and the ERM structures is very poor or not applicable, the contribution of the IAF towards the risk management activities is not influenced. This could be an indication that in organisations where ERM structures do not exist or are weak, the IAF fulfils these duties, to ensure that the organisation still adheres to the guidance and legislation applicable.

Given the finding that both senior management groups perceive the contribution of the IAF towards risk management activities as rather weak, CAEs should take cognisance of this fact and should try to improve this perception. AOs and audit committees could investigate the organisation's ERM structures and the role that internal auditing plays, which could be enhanced if the proper level of coordination is established. CACs should encourage the IAF to improve its role in risk management activities as a sound ERM framework is vital for a risk-based internal audit approach. Regulators and other guiding bodies should consider whether more specific guidance should be provided on the coordination between the two parties. If so, this coordination could also be stipulated more clearly in the legislation and other relevant documents. Lastly, the IIA should take note of the perceptions of senior management on the contribution of internal auditing towards the mitigation of risks threatening the organisation. The IIA is already concerned about the perceptions of stakeholders that their expectations are not met and should thus position its members to first, be aware of this concern and secondly, how they can change this perception.

REFERENCES

Accenture & Oxford Economics. (2013), *Risk management for an era of greater uncertainty.* Available at: http://www.accenture.com/Microsites/risk-management-research-/2013/Documents/download/Reports/Accenture-Risk-Management-Research-For-An-Era-Of-Greater-Uncertainty-Report.pdf (accessed 2 February 2014).

Anonymous (2009), 'The future of the CRO: risk professionals weigh in', *Risk Management,* Vol. 56(3), pp. 54-60.

Australian Standards Board & New Zealand Standards Board (AS/NZ) (2004), *Risk Management,* AS/NZS 4360:2004.

Barac, K. & Motubatse, K. N. (2009), 'Internal audit outsourcing practices in South Africa', *African Journal of Business Management*, Vol. 3(13), pp.696-979.

Beasley, M.S., Branson, B.C. & Hancock, B.V. (2008), 'Rising expectations', *Journal of Accountancy*, Vol. 205(4), pp. 44-51.

Bolger, D. (2011), *A call to action: Stakeholders' perceptions on internal auditing.* Altamonte Springs, FL: Institute of Internal Auditors Research Foundation.

Campbell, T. (2008), 'Risk management: Implementing an effective system', *Accountancy Ireland*, Vol. 40(6), pp. 54-57.

Campbell, A. (2009), 'Job market still poor for risk professionals', *Risk*, Vol. 22(4), p.12.

Chambers, R.F. (2014), *Is the value of internal audit on the wane?: A gap in stakeholder expectations may have opened up in some organisations,* Available at: http://www6.lexisnexis.com/publisher/EndUser?Action=UserDisplayFullDocument&orgId=1746&topicId=100046847&docId=l:2125333404&Em=7&start=18 (Accessed 24 September 2014).

Coetzee, G.P. (2010). *A risk-based audit model for internal audit engagements,* Unpublished PhD (Auditing) thesis, Bloemfontein, University of the Free State.

Coetzee, P. & Lubbe, D. (2011), 'Internal audit and risk management in South Africa: adherence to guidance', *Acta Academia*, Vol 43(4), pp. 29-60.

Coetzee, P. & Lubbe, D. (2013), 'The risk maturity of South African private and public sector organisations', *The Southern African Journal of Accountability and Auditing Research*, Vol. 14, pp. 45-56.

Committee of Sponsoring Organizations of the Treadway Commission (COSO) (2004), *Enterprise risk management integrated framework: executive summary,* Jersey City, NJ: Sponsoring Organisations of the Treadway Commission.

Cowan, M., Camfield, H., English, S. & Hammond, S. (2014), *State of internal audit survey 2014 – adapting to complex challenges,* Thomson Reuters, Available at: http://thomsonreutersaccelus.wordpress.com/2014/07/03/state-of-internal-audit-report-2014/ (Accessed 6 September 2014).

Decaux, L. & Sarens, G. (2015), 'Implementing combined assurance: insights from multiple case studies', *Managerial Auditing Journal*, Vol. 30(1), pp.56 – 79.

Deloitte (2013), *Financial institutions increasing their focus and resources on risk management*, Available at: http://www2.deloitte.com/is/is/pages/about-deloitte/articles/financial-institutions-increasing-their-focus-risk-management.html (Accessed 11 May 2015)

Deloitte (2014), *Risk committee resource guide,* Available at: http://www2.deloitte.com/content/dam/Deloitte/za/Documents/governance-risk-compliance/ZA_RiskCommitteeResourceGuideOnline2014_22052014.pdf (Accessed 14 September 2014)

De Zwaan, L., Stewart, J. and Subramaniam, N. (2011), 'Internal audit involvement in enterprise risk management', *Managerial Auditing Journal,* Vol. 26(7), pp. 586-604.

Erasmus, L., Barac, K., Coetzee. P., Fourie, H., Motubatese. N., Plant, K., Steyn, B. & Van Staden, M. (2014), *The standing of and demand for internal auditing in South African national government departments,* Available at: http://www.treasury.gov.za/publications/other/2014%20The%20Status%20of%20and%20Demand%20for%20Internal%20Auditing%20in%20SA%20National%20Government%20Departments.pdf (Accessed 7 February 2015).

E&Y (2013), *Turning risk into results: How leading companies use risk management to fuel better performance,* Available at: http://www.ey.com/Publication/vwLUAssets/Turning_risk_into_results/$FILE/Turning%20risk%20into%20results_AU1082_1%20Feb%202012.pdf (Accessed 7 May 2015).

Grant Thornton (2015), *Competing priorities: Are CAE and audit committee priorities in sync?,* Available at: ttps://na.theiia.org/standards-guidance/Public%20Documents/Grant-Thornton-Competing-Priorities.pdf (Accessed 2 February 2015).

Güner, M F. (2008), 'Stakeholders perceptions and expectations and the evolving role of internal audit', Internal Auditing, Vol. 23(5), pp. 21-33.

Hardy, K. (2010), *Managing risk in government: An introduction to enterprise risk management*. IBM Center for the Business of Government. 2nd edition, Available at: http://worldriskday.com/wpcontent/uploads/RiskinGovernment.pdf (Accessed 17 January 2014).

Howell, D.C. (2007), *Treatment of ordered variables in a contingency table,* Available at: http://uvm.edu/dhowell/methods7/Supplements/OrdinalChiSq.html (Accessed 17 February 2014).

Institute of Internal Auditors (IIA) (2009a), *IIA position paper: The role of internal auditing in enterprise-wide risk management,* Available at: https://na.theiia.org/standardsguidance/Public%20Documents/PP%20The%20Role%20of%20Internal%20Auditing%20in%20Enterprise%20Risk%20Management.pdf (Accessed 20 October 2011).

Institute of Internal Auditors (IIA) (2009b), *IIA position paper: the role of internal auditing in resourcing the internal audit activity*. Institute of Internal Auditors. Altamonte Springs. Florida.

Institute of Internal Auditors (IIA) (2012a), *Coordinating risk management and assurance: Practice Guidance,* Altamonte Springs, FL: Institute of Internal Auditors.

Institute of Internal Auditors (IIA) (2012b), *International standards for the professional practice of internal auditing,* Altamonte Springs, FL: Institute of Internal Auditors.

Institute of Internal Auditors (IIA) (2014), *The pulse of the profession - enhancing value through collaboration: a call to action,* Available at: https://global.theiia.org/about/about-internal-auditing/Public%20Documents/Global%20Pulse%20of%20the%20Profession%20-%20Enhancing%20Value%20Through%20Collaboration%20-%20A%20Call%20to%20Action.pdf (Accessed 20 August 2014).

Institute of Internal Auditors Research Foundation (IIARF) (2009a), *ERM benchmarking survey,* Global Audit Information Network, Altamonte Springs, FL: Institute of Internal Auditors Research Foundation.

Institute of Internal Auditors Research Foundation (IIARF) (2009b), *Internal audit capability model for the public sector,* Altamonte Springs, FL: Institute of Internal Auditors Research Foundation.

Institute of Directors (IoD) (1994), *King report on corporate governance for South Africa,* King Committee on Corporate Governance, Johannesburg.

Institute of Directors (IoD) (2002), *King report on corporate governance for South Africa,* King Committee on Corporate Governance. Johannesburg.

Institute of Directors (IoD) (2009), *King report on governance for South Africa 2009,* Johannesburg: LexisNexis.

Kleffner, A.E., Lee, R.B. & McGannon, B. (2003), 'The effect of corporate governance on the use of enterprise risk management: evidence from Canada', *Risk Management and Insurance Review*, Vol. 6 (1), pp. 53-73.

Lam, J. (2009), 'Key requirements for enterprise-wide risk management: lessons learned from the global financial crises', *RMA Journal*, Vol. 91(8), pp. 22-27.

Liu, J. (2012), 'The enterprise risk management and the risk oriented internal audit', *iBusiness*, Vol. 4, pp. 287-292.

Merna, T. & Al-Thani, F.F. (2005), *Corporate risk management: An organisational perspective,* Chichester: Wiley.

Meulbroek, L. (2002), *Integrated risk management for the firm: A senior management's guide,* Boston, MA: Harvard Business School Press.

Miles. S. (2012), 'Stakeholders: essentially contested or just confused?', *Journal of Business Ethics,* Vol. 108(3), pp. 285-298.

Odoyo, F.S., Omwono, G.A. & Okinyi, N.O. (2014), 'An analysis of the role of internal audit in implementing risk management: a study of state corporations in Kenya', *International Journal of Business and Social Science,* Vol. 5(6), pp. 169-176.

Paape, L., Scheffe, J. & Snoep, P. (2003), 'The relationship between the internal audit function and corporate governance in the EU – a survey', *International Journal of Auditing,* Vol. 7, pp. 247-262

Preble, J.F. (2005), 'Towards a comprehensive model of stakeholders management', *Business and Society Review,* No. 4, pp. 407-431

PricewaterhouseCoopers (PwC) (2008), *Enterprise risk management benchmarking survey,* Available at: http://www.pwc.fi/fi_FI/fi/julkaisut/tiedostot/erm_benchmarking_survey_2008.pdf (Accessed 19 December 2013).

PricewaterhouseCoopers (PwC) (2014), *2014 State of the internal audit profession study – higher performance by design: a blueprint for change,* Available at: http://www.pwc.com/en_NA/na/assets/pdf/pwcs-2014-state-of-the-internal-audit-profession.pdf (Accessed 19 April 2014).

Professional Risk Managers' International Association (PRIMIA) (2008), *Enterprise risk management a status check on global best practices,* Available at: http://www.robertrreitano.com/files/Enterprise%20Risk%20Management%20-%20A%20Status%20Check%20on%20Global%20Best%20Practices.pdf (Accessed 17 November 2009).

Psica, A. (2008), 'The right fit: Auditing ERM frameworks', *Internal Auditor,* Vol. 65(2), pp. 50-56.

Republic of South Africa (RSA) (1999), *Public Finance Management Act, Act 1 of 1999 as amended by Act 29 of 1999,* Pretoria: Government Printer.

Republic of South Africa (RSA) (2003), *Municipal Finance Management Act, Act 56 of 2003,* Pretoria: Government Printer.

Sarens, G. & Christopher, J. (2010), 'The association between corporate governance guidelines and risk management and internal control practices', *Managerial Auditing Journal,* Vol. 25(4), pp. 288-308.

Van der Waldt, G. & Du Toit, D.F.P. (2005), *Managing for excellence in the public sector,* 2nd edition, 4th impression. Cape Town: Juta.

Ziegenfuss, D. (2010), 'A framework for audit evolution', *Internal Auditor*, Vol. 67(1), pp. 68-69.

AUD010 The influence of public sector audit committees on external audit outcomes: case study evidence from an Eastern Cape municipality

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Abstract

Audit committees have become an important feature of corporate governance in the public sector due to concern about poor external audit outcomes in municipalities. The purpose of this paper is to examine the influence of audit committees on external audit outcomes in the public sector, specifically Eastern Cape municipalities. This study examines the process followed by audit committees to fulfil their oversight role by way of a case study of a municipality that has shown marked improvements in its external audit outcomes. Semi-structured interviews were conducted with the audit committee members, management and members of the internal audit team. It was found that the audit committee has an influence on external audit outcomes. Using the institutional theory, it was found that audit committee members strive to provide effective monitoring of financial reporting rather than being ceremonial. However, the influence of the audit committee is not as strong as that of municipality administrative leadership tone, with management rating the influence at 40% and 60% respectively. The study cannot be generalised as this was a case study on one municipality.

Key words: corporate governance, audit committee process, audit outcomes

1. Introduction

Eastern Cape municipalities have been faced with poor audit outcomes. According to the Auditor General of South Africa (AGSA 2013), only 20% of municipalities in the Eastern Cape received unqualified audit reports for the 2012 financial year. The Auditor General (AGSA) identified the cause of the problem to be significant weaknesses in internal controls. The Municipal Finance Management Act 56 of 2003 requires every municipality to appoint an audit committee (AC). The AC performs responsibilities as assigned to it by the Municipal Finance Management Act (MFMA). These responsibilities of the AC include providing assurance on the credibility of various reports produced for oversight, decision-making and accountability purposes. Should the AC fail in executing this responsibility effectively, vital decisions relating to the funding, accountability and service delivery will be based on information that may be inaccurate, incomplete and unreliable.

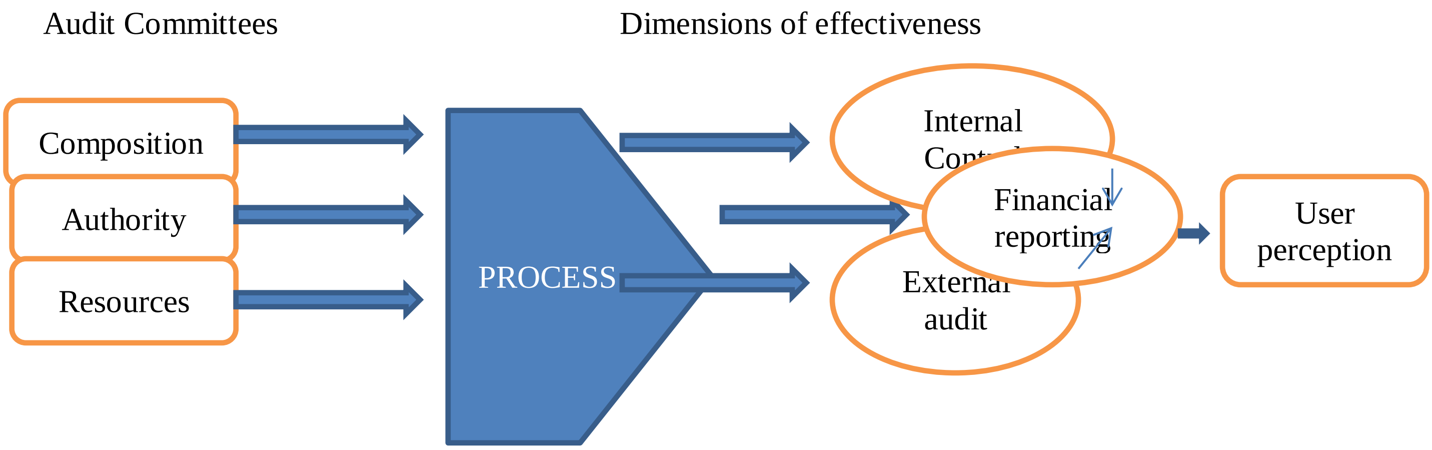
This study examines how and to what extent ACs influence external audit outcomes by focusing on a municipality in the Eastern Cape that improved its audit outcome markedly. The institutional theory (Spira 2002) will be used as an interactive process of data collection and analysis in this study. This theory suggests that it is necessary to understand the substance of the interactions between different governance parties and how these parties use, at times, ceremonial activities to maintain their form to all relevant parties. Therefore, this study will examine whether the AC process is substantive and will influence management decisions that affect the control environment or merely ceremonial where the AC's actions will suggest existence with no real influence. An improvement in the control environment will result in improved external audit outcomes. The case study approach is the most appropriate research strategy for this study because of its advantages in revealing in detail the unique perceptions and concerns of individual participants in a real-world situation which would be lost in quantitative or experimental strategies (Thomas 2011). We find that AC members strive for effective monitoring and do not want to serve on ceremonial ACs. There are, however, some ceremonial actions that have been identified.

2. Literature review

2.1 *Introduction*

In general, the regulators' goal for the AC is to enhance the quality of financial information and maintain confidence in the quality of financial reporting. The AC can improve the quality of information directly by overseeing the financial reporting process, and indirectly through the oversight of internal control and external audit. Bedard and Gendron (2010) present the following AC framework on AC and dimensions of effectiveness.

Figure 1: Audit committee framework



The dimensions of effectiveness ensue from the AC processes. This study seeks to study these processes of the AC.

2.2 *Composition*

Literature indicates the importance of an independent AC that is constituted correctly and includes financial experts (Bronson, Carcello, Hollingsworth & Neal 2009; Gul & Goodwin 2010; Cohen, Hoitash, Krishnamothy & Wright 2004). Municipalities are entrusted with public funds through equity share and grants. These public funds are monies collected from the public in the form of taxes. The use of public funds requires accountability. The AC is expected to play an oversight role to monitor the municipalities' use of funds. The AC can perform the oversight role effectively if its composition includes independent members and financial experts (Blue Ribbon Committee 1999; ASX 2010). The independence and financial expertise will help strengthen the oversight role that the AC plays during the AC process.

There are, however, studies that had different findings in terms of independence versus quality of information. A study by Osma and Noguer (2007) concluded that the presence of an independent AC did not affect the quality of accounting information. This statement was confirmed by Suarez, Garcia, Mendez & Gutierrez (2013); they found that a high proportion of independent members did not lead to significant improvement in quality of accounting information. Pucheta-Martinez and De Fuentes (2007) found that neither the existence nor the composition of the AC had any influence on the tendency to receive qualified opinions in the audit reports.

2.3 *Resources and authority*

The complex nature of financial and accounting matters to be reviewed by the AC requires a combination of skills and expertise that are relevant to the public sector. These resources will equip ACs to monitor external and internal controls through training. Skilled AC members will be able to speak to management with authority. Jermias and Gani (2014) found that qualified board members are better management monitors and constitute a more valuable resource for the firms than unqualified board members?. When the AC is effective, it is the organisational and operational behaviour of management that will result in credible information presented before the AC, the implementation of recommendations and thus an improvement in audit outcomes. Research on ACs recognises that a productive relationship between the AC and executive management as well as auditors improves the quality of financial reporting and related governance processes within organisations (Gramling, Maleta, Schneider & Church 2004; Turley & Zaman 2004). Stringent substantial monitoring by the AC should result in the improvement of internal controls which in turn will improve audit outcomes.

The above studies indicate that an AC with independent members and financial experts strengthens its oversight role, however, its composition neither affects quality of information nor influences the audit opinion. ACs can only have a positive impact on audit outcomes when the organisations they serve support their efforts and respond to their advice and recommendations. Van der Nest, Thornhill and De Jager (2008) made recommendations on improving the effectiveness of ACs, focusing on attendance of meetings, recruitment of AC members and recognition of the importance of ACs as an accountability instrument. My study focuses on the AC process. I interviewed all attendees of the AC meeting as part of testing the AC process. The combination of skills in the AC is also addressed. Should the AC fail in providing assurance on the credibility of the reports produced for oversight, decision-making and accountability purposes, vital decisions related to funding, accountability and service delivery will be based on inaccurate, incomplete and unreliable information AGSA (2013).

Deloitte (2006) and King III list the following as characteristics of high-performing ACs: the committee should constitute independent directors; a good mix of expertise (skills and competencies must complement one another); must have a financial expert; knowledge of the company's business and industry as well as the laws and regulations applicable to the company. Noting the above characteristics and the literature that supports them, there is minimal literature that focuses on AC processes. My study focuses on the AC process to find evidence as to whether the AC does in fact influence the external audit outcomes. A study by Beasley, Carcello, Hermanson and Neal (2009) examines the AC process used by AC members when fulfilling their oversight responsibility with special focus on the tension between the agency theory (Fama & Jensen 1983) versus the institution theory. My study extends the study by Beasley *et al*. (2009) by not interviewing the AC chairman only, but including all other attendees to the AC meeting.

The results of my study will assist the regulators in deciding whether or not they should ensure that municipalities comply with having effective ACs. The regulators will also be able to determine better ways of monitoring ACs to ensure they fulfil their oversight role. The study contributes to the literature that focuses on the AC process in order to identify which aspects affect the AC effectiveness, and the impact on external audit outcomes. This study is expected to give more insight on public sector AC process.

3. Research design

3.1 Case

In the 2013 financial period, 55 auditees submitted their financial statements for audit (AGSA 2014). The report indicated that nine auditees have improved in audit outcomes. The selection for this study was based on a municipality that had shown improvement in the audit outcomes in the years 2011 to 2013. I made the selection in the Eastern Cape because I was concerned about the poor performance of municipalities in this province compared to the other eight provinces. One municipality was selected for the case study. This municipality (hereafter referred to as Munic) is one of the two that accounted for 42% of the R37.4 billion total expenditure in the Eastern Cape (AGSA 2014). Munic improved from an adverse audit opinion in 2011 to a qualified audit opinion in 2013.

3.2 *Method*

The study uses a qualitative research method. As noted by Turley and Zaman (2004), there is a particular need for qualitative research case studies and interviews to understand the complex environment in which ACs operate. The case study approach gathers AC members' insights and allows investigations beyond the formal constitution and official policies, providing room to explore issues that are difficult to examine. The data for the case study was gathered from three sources: (1) semi-structured interviews, (2) annual reports, and (3) any internal documents made available by the municipality. The interviews were organised around six AC process areas adapted from Beasley *et al*. (2009). Management questions were tailor-made from the AC questions to address the expectations and observations from and by management. Several sources of information were used to design the questions, including: (1) academic literature (e.g. Beasley *et al*. 2009; Turley & Zaman 2007); (2) the professional literature (e.g. King III), and (3) the researcher's prior experience working with ACs, internal auditors and external auditors.

The following people were interviewed:

Table 1: Interviews with relevant personnel

1. Audit Committee Chair
2. Four audit committee members
3. Chief Financial Officer
4. Acting Chief Operating Officer
5. Acting Director: Corporate Services
6. Acting Internal Audit Manager
7. Former Internal Audit Manager
8. Acting Director: Health and Public Safety

Table 2: Attendees to AC meetings

Portfolio	Number attending audit committee meetings	Number interviewed
Audit committee members	6	5
City Manager	1	0
CFO	1	1
Directors	7	4
Compliance Manager	1	0
Municipal Public Accounts Committee chairperson	1	0
Internal audit	1	1
External audit	2	0

The interviews were recorded and interviewees were assured of confidentiality of information and anonymity. The AC members that were interviewed had different periods of experience within the AC of the municipality: three members had been with the municipality for three years and the other two for just less than a year. The directors and managers ranged from being in their current positions with the municipality for a period of one year and three months to twenty years. Although some are referred to as *acting*, they had been in these positions for a long time.

4. Limitations to the study

Limited participant availability made it necessary to restrict interviews to key management. Nevertheless, similar views were expressed by the interviewed managers, suggesting only a small chance that new significant information would have been discovered had the researcher interviewed all managers.

5. Findings and analysis

Table 3: Interview questions

A	**Acceptance and continuance of due diligence processes**
1	What steps do AC members take before agreeing to join the AC and agreeing to remain on the committee?
2	Why would a member decline to serve on the AC or leave an existing AC?
B	**Selection of AC nominees**
3	How are members identified to serve on the AC and why are they asked to join the committee? Who appoints the AC members?
C	**AC meeting processes**
4	How often do ACs meet, for how long, and which groups are included in the meeting? Management (M): Do you think the composition of the AC and the frequency of meetings assist the AC in fulfilling its oversight mandate?
5	How, when and by whom are the agendas for AC meetings prepared? M: Do you have any contribution to the agenda? How do you know if you have to make a presentation in the AC meeting?
6	Who determines the information included in the information pack received before committee meetings, when is the information pack received, what information is included in the pack, how do AC members review the information, and what are they examining for as they review the information? M: Do you think AC members present themselves as having reviewed the information?
7	What types of information do AC members receive between meetings, from whom is this information received, and how often is information received? M: Is there any information that you receive in-between meetings?
D	**AC oversight of the financial reporting process**
8	What financial risk areas are reviewed by the AC?
9	What is the nature of the AC's involvement in reviewing the municipality's accounting policies and accounting estimates/judgements/assumptions? M: To what extent is the AC reviewing the financial information?
10	How does the AC assess the risk of fraudulent financial reporting, including how it assesses management's integrity and interacts with the internal and external auditors in making this assessment?
11	What is the nature of the AC's involvement in reviewing alternative accounting treatments available under Generally Recognised Accounting Practice (GRAP)?
E	**Oversight of the internal and external audit processes**
12	What is the nature of the AC's interaction with internal audit (hiring and firing authority; setting budgets and scope of work, reporting relationships, and meeting frequency and type)? Internal Audit (IA): Do the AC discussions impact the following: Audit risk assessment, IA plan, resolution of contentious issues, and the type of audit report?
13	What is the nature of meetings and other communications between the AC and the external auditor?
14	What types of purchases of non-audit services are approved by the AC, what factors are considered by the committee before approving the purchase of non-audit services that the AC would not purchase?
15	How does the AC know about the risk areas identified by the external auditors?

F	**Other AC activities**
16	How, and to what extent, does the AC benchmark its practices against "best practices"?
17	How, and to what extent, is the AC involved in reviewing the municipality's code of conduct?
18	On an overall basis, how comfortable is the AC that it understands the municipality's key financial reporting risks? M: How comfortable are you that the AC understands the municipality's key financial reporting risks?
19	How do AC members evaluate the strength of internal controls? Internal Audit: Does the AC play a role in respect of internal controls?
20	What do AC members view as their most important task in fulfilling their responsibilities? M: What do you view as the most important task for you as manager in enabling the AC to fulfil their oversight mandate?
21	What do AC members view as the most important personal attribute/ characteristic needed to be an effective AC member? M: What do you view as the most important personal attribute/characteristic to be an effective AC member?
G	**Conclusion (Management)**
22	How effective is your AC in turning things around?
23	Do you believe that the AC had an impact on external audit outcomes?
24	Who do you think has a significant impact between the leadership tone (City Manager) and the AC?

5.1 Acceptance and continuance of due diligence processes

This study found that members performed due diligence before accepting the AC position. The members focused on the risk profile of the municipality and challenges based on the management and audit report. The AC members assessed the reputation of the municipality through consultation with management and people they regarded as relevant. Members indicated that they would leave the municipality's AC if they thought they were not adding value and if their recommendations were not taken seriously. It appeared that the AC members accepted the position with a view of engaging in monitoring management rather than for compliance purposes.

5.2 Selection of AC committee nominees

The interest in the selection process was due to examining if the members were appointed because they were friends with management and would therefore not question management and management would not open up to the AC, keep issues to themselves and not make management account (Spira 2002). With Munic, appointment of AC members is done by the Council. Management advertises the vacant AC positions and on responding positively, CVs are scrutinised based on the required skill. No member indicated that he/she was friends with management; however, there was a member that had a spouse working at the municipality. The AC makes a recommendation on the kind of skill that is required based on the current composition of the AC. The committee currently has members with a number of different skills including the following: a financial expert that is a chartered accountant; a former senior manager with significant experience in the Office of the AGSA; a legal person; a member with significant municipal experience; a performance management expert and an academic.

The existing AC started with three members as per the charter. Due to the magnitude of work, the committee was increased to six members. Pucheta-Martinez and De Fuentes (2007) found that the AC size and the independence have a significant influence on the likelihood of receiving a qualified audit report.

Management expressed some satisfaction based on their observation of the composition of the AC, but indicated that it can sometimes be challenging to have members that do not understand the complex environment that the municipality operates in. The AC members appeared to take the monitoring role seriously as they considered the composition of the committee thoroughly.

5.3 AC meeting processes

An agenda and minutes give structure to proceedings and provide a formal recording of the meeting process. The agenda of each meeting constrains the consideration of specific issues within a particular time frame. A very crowded agenda may impose pressure on the committee which in turn limits full debate and this might be to the advantage of those that want to hide information (Spira 2002). If management prepares the agenda they can manipulate it or control it by talking to the chairperson beforehand. In Munic, the agenda and minutes are prepared by internal audit unit in consultation with the AC chairperson. AC meetings have consistently been found to be associated with higher financial reporting quality (Turley & Zaman 2004). The AC meetings were initially held once every quarter. The magnitude of challenges due to significant weaknesses in controls and the high risks that were identified by internal auditors and external auditors resulted in meetings being held monthly. This helped to prevent the overloading of the agenda and allowed more engagement with management and internal auditors. The meetings were formal and are attended by AC members, internal audit unit that also act as secretariat, external auditors, MPAC chair and the top management. The year planner for meetings is drafted by the chairperson based on legislative requirements. The agenda is prepared by the internal audit unit based on the planner and in consultation with the AC chair. The agenda determines what must be in the AC pack. The pack is sent to members seven days before the meeting, but sometimes the members receive the pack five days before the meeting. It was clear from the responses that even though the meetings are held monthly, members have sufficient time to review the pack. All interviewees confirm that they review the pack before the meeting.

The meeting runs for a maximum of five hours. Some members indicated that if they have a tight schedule they will skim through the minutes, read the agenda, and prioritize certain items that are critical. It appears that members attempt to engage with the pack rigorously and meaningfully. Although management is happy with the AC meeting process, there are some concerns. Some management members feel that sometimes the AC goes beyond its oversight role and becomes operational. Management is happy with the frequency of meetings as they believe the influence of AC will improve the control environment. Management attested to the AC reading the pack, and emphasised the importance of the kind of questions the AC asks. These responses point to substantive activities by the AC.

5.4 AC oversight of the financial reporting process

The internal audit plan is risk-based. The AC reviews all the financial reporting risks and mitigation plans. They formulate areas of focus from the qualification opinion, repeat findings, Supply Chain (SCM) and Human Resources (HR). The AC works on the basis of the AC charter. Significant funds go through SCM and revenue department, therefore AC focus will be on such areas. The AC examines all financial risks in the two meetings before the submission of annual financial statements. Financial statements are thoroughly reviewed only at year-end as monthly accounts are normally incomplete. The financial statements are reviewed thoroughly by internal audit followed by a high-level review by the AC. Internal audit is required to review disclosures, accounting policies and financial statements. There has been significant improvement in the quality of annual financial staments (AFS) at Munic. The AC has a plan with milestones that addresses all the findings and actions to address the findings. Internal audit validates if findings have been addressed. Munic's risk assessment is done annually. The AC participates in the process. The risk committee reports on a quarterly basis at the AC meetings. There is an agenda section for new risks. Prior research suggests that ACs can improve financial reporting quality by reducing the incidence of fraudulent reporting and accounting irregularities (Rainsbury, Bradbury & Cahan 2009). Fraud is a standing item on the agenda of all AC meetings.

It appears that the AC monitors the financial reporting process. There was, however, no indication of serious involvement in the analysis of judgements. Some members could not specifically identify the key financial reporting risk, and this could indicate a challenge in effective monitoring of the financial reporting process.

5.5 Oversight of the internal and external audit process

Audit committee interactions with external audit

The AC holds separate meetings with the AGSA. There were more of these meetings especially before and during the audit process. The meetings with external auditors also discussed the risks identified by the external auditors, including the risk of fraudulent financial reporting.

Audit committee interactions with internal audit

Regular meetings between the AC and the internal auditing department make it likely that the AC remained informed and knowledgeable about relevant accounting and auditing issues (Sarens, De Beelde & Everaert 2009). Munic's AC holds separate meetings with internal audit. Internal audit (IA) of Munic is co-sourced. The internal audit plan is approved by the AC. The study by Soh and Martinov-Bennie (2011) found that a full or partial in-house IA is, due to increased visibility and profile, more effective than one that is completely outsourced. There appears to be a strong relationship between the AC and internal audit. A close working relationship between internal audit and the AC is recognised as a fundamental principle of sound corporate governance (ASX, 2010).

5.6 Other AC activities

The members benchmarked themselves against the King III and other municipalities. The strength of internal controls is evaluated based on internal audit reports and the dashboard report on key controls that is supplied by AGSA. The AC views getting a clean audit report as the most important task in fulfilling their responsibilities. Management believe their main task is to ensure they report and submit quality reports with adequate information.

5.7 Effectiveness of the AC in turning things around

Management believe the AC is performing its oversight role. Their belief is based from the audit reports Munic received from AGSA which indicated improvements in internal controls. Management see a gradual turn in management attitude towards controls resulting in the improvement of the control environment.

5.8 Influence of the AC on external audit outcomes

Management believe the AC has a positive influence AC on external audit outcomes.

5.9 Influence of AC versus leadership (administration – City Manager)

Leadership tone appeared to have a greater influence than the AC on change in the control environment which then leads to changes in audit outcomes AC. There is consensus that the AC does influence external audit outcomes, but it has a smaller influence than leadership tone. The administration leader is very hands-on in the audit process and that affects the external audit outcomes. At a rating of 100%, management indicated that when looking at the parties that influence external audit outcome, leadership tone will be 60% and AC 40%.

5.10 Weaknesses identified by management on AC process

Management feel that the AC is not firm in their recommendations to Munic executive as a committee of Council like they do with management. Use of inexperienced trainees by auditors is problematic as the municipality is a very complex environment. The understanding of the municipality is very important to auditors in properly performing their jobs. The results demonstrate the importance of the AC process in fulfilling the oversight role. Beasley *et al*. (2009) found that members of the AC strive to provide effective monitoring of financial reporting and seek to avoid serving on ceremonial ACs. However, in six AC process areas they found evidence of both substantive monitoring and ceremonial action, such that neither agency theory nor institutional theory fully explains the results (Beasley *et al*. 2009). This study concurs with the finding of Beasley *et al*. (2009) that the AC strives to provide effective monitoring of financial reporting. The effective monitoring results in an improvement in internal controls which translates to improvement in external audit outcomes. This finding indicates that the AC strives to provide effective monitoring because of the challenges that have been identified from the interviews. The challenges that the AC appears to be facing include: (1) understanding the municipal environment fully due to its complexity, and (2) clear articulation of the key financial reporting risks. Management concur that decisions that are made by council should be based on credible financial information; however, they think the AC was not as firm with the executive as they were with the administration.

Table 4: Summary of substantive versus ceremonial activities

Activities	***Substantive***	***Ceremonial***
Due diligence process	100% extensive due diligence process done before joining the AC,	
Selection of AC	Approval and appointments made by council. Management have some involvement; however, no member was friends with management.	
	Members chosen based on expertise.	One member indicated that he was encouraged to apply for the position.
Resignation	50% indicated that they would resign if their recommendations were not taken seriously, and 50% if the admin was in shambles and there was unethical behaviour from admin.	
Composition (Financial expertise and independence)	50% of all AC members have financial expertise including a chartered accountant. 100% of AC members are independent.	
Agenda and minutes	Prepared by internal audit in consultation with the AC chairperson.	
Review of information pack	Pack received 5-7 days before the meeting. 60% review thoroughly all the time.	40% of AC members do a superficial review if they are pressed for time.
		Three managers and one AC member concerned with the types of questions asked by AC members.
Financial reporting process. Financial reporting risks	Two AC members spelt out the financial risks. Thorough review of AFS by internal audit that is co-sourced before being presented to management.	Though the AC reviews financial risks, other members were vague in their response — including on whether they review accounting policies and judgements. They did not spell out the specific financial reporting risk areas.
Review of accounting policies, estimates and judgements.	Involved in accounting policy through the review of AFS.	Minimal AC involvement in accounting policy choice.
Fraud risk of financial reporting	Management made to account on fraud at every meeting. Reliance on auditors for assessment of fraud risk.	
Oversight of internal and external auditors	There is extensive formal and informal contact with internal and external auditors.	AC does not approve the budget of the internal audit.
Other committee activities	AC benchmark themselves against best practise.	
Comfortable in knowing the municipality's key financial reporting risks	60% of members are comfortable.	40% not comfortable.

Note:

The percentages in this table are based on the number of members that were interviewed unless otherwise stated.

5. Discussion

The study makes three main contributions to the academic literature. Firstly, the study extends previous research, in some cases it confirms findings of the previous research on AC process (Gendron, Bedard & Maurice 2004; Beasley *et al*. 2009; Cohen, Krishnamorthy & Wright 2010; Spira 2002). This study examines the AC process in the public sector in South Africa with specific reference to the municipality, while the other studies focused on the private sector in The United States, Canada and The United Kingdom. Secondly, the researcher provides insights on what happens in the AC meetings of the municipalities. This study uses one case study to explain and explore the AC process with the views obtained from the different parties in the AC. The other studies used three corporations (Gendron *et al*. 2004), 42 AC chairpersons from different U.S. public companies (Beasley *et al*. 2009), and 30 audit managers and partners from three of the four big firms (Cohen *et al*. 2010). Thirdly, from a theoretical perspective, while AC members and management have appeared committed to substantive monitoring of financial reporting, the interviews revealed a mix of substantive and ceremonial activities with more weight on substantive activities. This agrees with the finding of Beasley *et al.* (2009). Additional theoretical work should further examine the role of the AC, possibly by increasing the sample of municipalities.

The results can be viewed in the context of the AC framework on AC and dimensions of effectiveness, according to Bedard and Gendron (2010) (see Figure 1). Academic literature states that for an AC to be effective, it should be independent and have the right composition which includes financial experts (Bronson *et al*. 2009; Gul & Goodwin 2010; Cohen *et al*. 2004). The findings from interviews confirmed this as the members believed it was important to have different skills, financial experts and independent members in a committee. Resources and authority assist in stringent substantial monitoring by the AC which should result in the improvement of internal controls. The study revealed that a productive relationship between the AC and executive management as well as auditors improved the quality of financial reporting and related governance processes within the municipality. This concurred with the findings of Gramling *et al*. (2004) and Turley and Zaman (2004). Jermias and Gani (2014) found that qualified board members are better management monitors and constitute a more valuable resource for the firms. The AC of Munic has qualified members.

The thorough review of the pack ensures that the process of preparing for the AC meeting is constructive and allows the AC members to contribute meaningfully to the meeting and that the municipality benefits from it. The analysis of this case study shows that ACs have significant influence on power relations between municipality participants. The existence and operation of the AC has pervasive behavioural effects. The interrogation of the reports to be tabled by management in the AC meeting could be as a result of the AC members having thoroughly read the pack. The increase in the frequency of meetings and the number of AC members shows the important role that is to be played by the AC to enhance quality of reporting. An effective AC enhances quality of accounting reporting (Al-Ajmi 2009).

The findings by Gendron *et al*. (2004) indicated that members place emphasis on financial statement accuracy, financial report wording, control effectiveness and audit quality. The findings of my study indicate that members put more reliance on internal audit for thorough review of financial statements, accounting policy choice and accounting judgements and estimates. This could create a weakness in the AC process. This control weakness could, however, be mitigated by the oversight of the internal audit. The municipalities are more complex in terms of operations and financial reporting. This creates a problem in terms of the AC fulfilling its oversight role as the questions they ask do not always reflect a sound understanding of the municipality. AC members who do not ask questions will cause management to try keeping things to themselves, sweeping them under the carpet rather than explaining an issue (Spira 2002). This weakness could represent rubber stamping. A matter of interest is the fact that management think that the AC is gradually turning things around in the municipality in line with the general response that things are being turned around.

The AC requested management to prepare an audit improvement plan in 2013 financial year. This plan was based on the external audit findings of 2012. Management had to report regularly on the progress in addressing the findings in the plan. This process contributed towards reducing the number of audit findings. The study therefore recommends that the AGSA should continue reporting on the effectiveness of the AC as that puts pressure on the AC to perform. There are a number of limitations that must be borne in mind when interpreting these findings. The sample size is small as the case study was done on one municipality and the findings cannot be generalised. In spite of these limitations, the results have important implications for regulators and others concerned with the role of ACs in corporate governance. Further research should be done on municipalities that do not have functional ACs, but that have improved in external audit outcomes. It would be interesting to include the external auditors in the interviews to test whether the AC process does improve internal controls that will result in the improvement of external audit outcomes.

6. Conclusion

This study examines the influence of an AC on external audit outcomes. The study finds that the AC influences the external audit outcomes. Members of the AC strive to provide effective monitoring of financial reporting rather than being ceremonial. The AC members appeared to view independence of AC members, composition of the AC, a variety of skills, attendance at meetings and being fully prepared, and enhancement of good quality reporting by management as key to what they regard as the most important task of the AC in attaining a clean audit report. The following recommendations should assist in improving the effectiveness of ACs in municipalities: (1) It should be compulsory that the accounting officer, management, internal audit and all AC members attend AC meetings. (2) Whilst members with financial expertise are appointed to an AC, there is a need for government to regulate serious training of the AC members in the municipality environment. The municipal environment is complex and for effective monitoring to occur there should be thorough understanding of the municipality. (3) The AGSA should continue reporting on the effectiveness of the AC to put pressure on the performance of the AC. (4) The frequency of meetings should depend on the control environment of the municipality. Meetings were changed from quarterly meetings to monthly meetings as there was a turn-around plan within the municipality. (5) Government must ensure that all municipalities appoint ACs. It appeared that improvements were due to a combination of different factors including the leadership tone and effective AC. Management believes that leadership tone has a greater influence on external audit outcomes than an AC at a rate of 60% to 40% respectively. However, the AC can only have a positive impact on audit outcomes when the municipality they serve supports their efforts and responds to their advice and recommendations.

7. REFERENCES

Al-Ajmi, J. 2009. Audit firm, corporate governance, and audit quality: evidence from Bahrain. *Advances in Accounting, Incorporating Advances in International Accounting*, 25:64–74.

Auditor General South Africa. 2013. *General report on the audit outcomes of local government Eastern Cape 2011–2012*. [Online] Available at: http:/www.agsa.co.za/Documents/Auditreports/Generalreportsprovincial.aspx. (Accessed 21 August 2013).

Auditor General South Africa. 2014. *General report on the audit outcomes of local government Eastern Cape 2012–2013*. [Online] Available at: http:/www.agsa.co.za/Documents/Auditreports/Generalreportsprovincial.aspx. (Accessed 30 July 2014).

ASX. 2010. *Corporate governance principles with 2010 amendments*. 2nd ed. Australian Securities Exchange (ASX) Corporate Governance Council. [Online] Available at: http://www.asx.com.au/about/pdf/cg_principles_recommendations_with_2010_amendments.pdf (Accessed 2 November 2010).

Beasley, M.S., Carcello, J.V., Hermanson, D.R. & Neal, T.L. 2009. The audit committee oversight process. *Contemporary Accounting Research*, 26(1):65–122.

Bedard, J. & Gendron, Y. 2010. Strengthening the financial reporting system: can audit committees deliver?. *International Journal of Auditing*, 14:174–210.

Blue Ribbon Committee. 1999. *Report and recommendations of the Blue Ribbon Committee on improving the effectiveness of corporate audit committee*. New York: Stock Exchange and National Association of Securities Dealers.

Bronson, S.N., Carcello, J.V., Hollingsworth, C.L. & Neal, T.L. 2009. Are fully independent committees really necessary? *Journal of Accounting and Public Policy*, 28(4):265–280.

Cohen, J.R., Krishnamorthy, G. & Wright, A.M. 2010. Corporate governance in the post-Sarbanes Oxley era: auditors' experiences. *Contemporary Accounting Research,* 27(3):751–786.

Cohen, J.R., Hoitash, U., Krishnamorthy, G. and Wright, A.M. 2004. The effect of audit committee industry expertise on monitoring the financial reporting process. *The Accounting Review,*89(1):243–273.

Deloitte. 2006. *Effective use of audit committees for real corporate governance in India.* [Online] Available at: http://www.corpgov.deloitte.com/site/in/binary/com.epicentric.contentmanagement.servlet.contentdeliveryservlet/InEng/Documents/audit-committee/ (Accessed April 2006).

Fama, E.F. & Jensen, M.C. 1983. Separation of ownership and control. *Journal of Law and Economics'*, 26(2):301–325.

Gendron, Y., Bedard, J. and Maurice, G. 2004. Getting inside the black box: a field study of practices in 'effective' audit committees. *Auditing: A journal of Practice and Theory,* 23:153–171.

Gramling, A.A., Maleta, M.J., Schneider, A. and Church, B.K. 2004. Role of the internal audit functions in corporate governance. *Journal of Accounting Literature,* 23:194–244.

Gul, F.A. & Goodwin, J. 2010. Short-term debt maturity structures, credit ratings, and the pricing of audit services. *The Accounting Review,* 85:877–909.

Institute of Directors in Southern Africa (IODSA). 2009. *King report on corporate governance*. Sandton: Institute of Directors in Southern Africa.

Jermias, J. & Gani, L. 2014. 'The impact of board capital and board characteristics on firm performance', *The British Accounting Review*, 46(2):135–153.

Osma, B.G. & Noguer, B.G.A. 2007. 'The effect of the board composition and its monitoring committee on earnings management: evidence from Spain', *Corporate Governance: An International Review,* 15(6):1413–1428.

Pucheta-Martinez, M.C. & De Fuentes, C. 2007. 'The impact of audit committee characteristics on the enhancement of the quality of financial reporting: an empirical study in the Spanish context', *Journal on Corporate Governance*, 15(6):1394–1411.

Rainsbury, E.A., Bradbury, M. & Cahan, S.F. 2009. 'The impact of audit committee quality on financial reporting quality and audit fees', *Journal of Contemporary Accounting and Economics,* 5:20–33.

Sarens, G., De Beelde, I. and Everaert, P. 2009. 'Internal audit: a comfort provider to the audit committee', *The British Accounting Review*, 41:90–106.

Soh, D.S.B. and Martinov-Bennie, N. 2011. 'The internal audit function. Perceptions of internal audit roles, effectiveness and evaluation', *Managerial Auditing Journal*, 26(7):605–622.
South Africa 2003. The Municipal Finance Management Act, No. 56 of 2003. *Government Gazette.* Pretoria: Government Printer.

Spira, L.F. 2002. *The audit committee: performing corporate governance*. London: Kluwer Academic Publishers.

Suarez, J.D.A., Garcia, E.C., Mendez, C.F. and Gutierrez, C.R. 2013. 'The effectiveness of the audit committee in Spain', *Series*, 4:333–352.

Thomas, G. 2011. *How to do Your Case Study. A Guide for Students and Researchers*. London; Sage Publishers.

Turley, S. and Zaman, M. 2004. The corporate governance effects of audit committees, *Journal of Management and Governance*, 8(3):305–332.

Turley, S. and Zaman, M. 2007. 'Audit committee effectiveness: informal processes and behavioural effects', *Accounting, Auditing and Accountability Journal*, 20(5):765–788.

Van der Nest, D.P., Thornhill, C. and De Jager, J. 2008. 'Audit committees and accountability in the South African public sector', *Journal of Public Administration,* 43(4):545–558.

PART C – FINANCIAL ACCOUNTING

Table of Contents

ACC001 Formalising the Definitions of the Elements of the Statement of Financial Position

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Abstract

In this paper, we take the position that the Conceptual Framework for Financial Reporting (CFfFR) serves as a representation of accounting principles regarding financial reporting currently shared within a large contingent of the accounting community. In philosophy, the aim of Ontology is to seek truth (Mäki 2011) and obtain knowledge. Computing (Computer Sciences and Information Systems) inherited the concept of ontology from philosophy and uses ontologies to formalise complex conceptualisations of a specified domain using a formalised language based on logic (Gruber 2002). Ontologies are successfully used in computing to build computer readable artefacts that are inherently consistent and unambiguous (IHTSDO 2011; Noy and McGuinness 2000). In this paper we investigate whether the definitions of the elements of the Statement of Financial Position (SFP) as provided in the CFfFR (IASB 2010) and the Discussion Paper on the CF (DP/2013/1) (IASB 2013), could be formalised using ontology technologies. It is investigated whether such an artefact would benefit the accounting community by providing definitions that are inherently consistent and unambiguous. Based on an ontological analysis of the current definitions for the elements of the SFP provided in the CFfFR and DP/2013/1, we propose definitions for “asset”, “liability” and “equity” in a formalised language, which are computer readable artefacts that are inherently consistent and unambiguous.

The general contribution of the paper is that it uses established ontology technologies from Computing and applies it to a natural language text from a specified domain i.e. financial reporting. The contribution towards the accounting community is that the methodology and ontology technologies used in this paper provides a tool, based on formal logics, to identify inconsistencies and ambiguities in a text, written in natural language such as the CFfFR. During the process of building the formal ontology certain inconsistencies and ambiguities in the current definitions of the elements of the SFP were identified. By building the formal domain ontology, the authors demonstrate that it is possible to successfully represent the elements of the SFP in a formalised language that is a computer readable artefact and is inherently consistent and unambiguous. The accounting community can now decide if the inherently consistent and unambiguous definitions of the elements of the SFP proposed in this paper, correctly describe the instances of the concepts, asset, liability and equity.

Keywords: Accounting Ontology, Conceptual Framework, Formal ontology, Financial Accounting Standards, Knowledge Representation.

1 INTRODUCTION

In this paper, the position is taken that the Conceptual Framework for Financial Reporting (CFfFR) as published by the IASB (IASB 2010) should define the most basic financial reporting concepts currently shared within a large contingent of the accounting community. In this study some of these concepts are evaluated from an ontological perspective. One of the uses of ontologies within computing is to provide a formal shared representation of a specific domain (Smith 2003).

Computing[1] adopted the concept Ontology as a formal representation from philosophy and ontologies are therefore used to formalise complex conceptualisations of a specified domain using a formalised logic-based language (Gruber 2002). Several applications of such computing ontologies exist where the goal of these computer readable artefacts include being inherently consistent and unambiguous (IHTSDO 2011; Noy and McGuinness 2000). In this paper we report on an investigation to determine whether the definitions of the elements of the Statement of Financial Position (SFP) as provided in the CFfFR (IASB 2010) and DP/2013/1 (IASB 2013), could be formalised using computing ontology technologies, and whether such an ontology artefact would benefit the accounting community by providing definitions that are inherently consistent and unambiguous.

In order to indicate the applicability of computing ontology technologies for the accounting domain, we provide a brief background discussion on ontologies (section 0): firstly discussing the historical development of the concept of Ontology in philosophy (section 0) and secondly, discussing the adoption of ontologies in computing (section 0). Lastly, in section 0 we indicate the applicability of formal ontologies to the accounting domain.

In Section 3 a design science research (DSR) approach (Hevner et al. 2004; Hevner and Chatterjee 2010; Kuechler and Vaishnavi 2008; Vaishnavi and Kuechler 2004) is used to build an artefact of the definitions of the elements in the form of a formal domain ontology. In the process of building the artefact, assumptions made to build the formal ontology are indicated in section 0. The design of the formal ontology includes a short discussion on the modelling of time (section 0) and the identification of the basic concepts and relations of the elements of the SFP in section 0. Based on the ontological analysis of the current definitions for the elements of the SFP provided in the CFfFR and DP/2013/01, definitions for "*asset*", "*liability*" and "*equity*" are proposed in section 0.3.3. We report on our findings of the modelling process in sections 0 and 0 and conclude on the benefits of a formal ontology of the definitions of the elements of the SFP for the accounting community in section 0.

[1] *Computing* is used to refer to both Computer Sciences and Information Systems.

2 ONTOLOGY BACKGROUND

2.1 Ontology in Philosophy

Computing adopted the concept of ontology from philosophy (Guarino et al. 2009), but ontologies within computing differs substantially from the original philosophical notion. Ontology defined from a philosophical perspective is “a branch of metaphysics concerned with the nature and relations of being, or a particular theory about the nature of being or the kinds of things that have existence” (Mirriam-Webster Dictionary 2014). According to Heidegger (1999) “*Ontology* means doctrine of being” and “Ontology” is used as a formal theory of objects and coincides with the ancient ontology or “metaphysics”. Wolterstroff (1970) describes ontology from a philosophical perspective as “a description of the most general structure of what there is.”

The concept of ontology originated with Aristotle who made the distinction between physics and metaphysics (Corazzon 2013; Heidegger 1999). Physics deals with material entities and metaphysics with immaterial entities, which are behind the physical world (Smith 1995). Through a cognitive process, Aristotle searched for the general properties of things that constitute their invariant form, namely the universal structures of patterns (universals) to be defined and axiomatized through first-order logic (Corazzon 2013). Ontology in the tradition of Husserl, Twardowski, Meinong Hartmann, and Heidegger forms the background of its adoption and use in computing (Corazzon 2013; Heidegger 1999). The importance of ontology for this study is that ontology is not isolated but connected to other disciplines, i.e. the *“field of being”* like ontology of nature, ontology of culture, and material ontologies (Heidegger 1999).

In philosophy, logic and ontology are diverse fields, but they overlap in the field of formal languages (Hofweber 2013). Hofweber (2013) identifies four notions of logic in philosophy:

- “(L1) the study of artificial formal languages;
- (L2) the study of formally valid inferences and logical consequence;
- (L3) the study of logical truths;
- (L4) the study of the general features, or form, of judgements.”

Hofweber (2013) furthermore divides the discipline of ontology in philosophy into the following four parts:

- “(O1) the study of ontological commitment, i.e. what we or others are committed to,
- (O2) the study of what there is,
- (O3) the study of the most general features of what there is, and how the things there are relate to each other in the metaphysically most general ways,
- (O4) the study of meta-ontology, i.e. saying what task it is that the discipline of ontology should aim to accomplish, if any, how the questions it aims to answer should be understood, and with what methodology they can be answered.”

Based on the four notions of logic and the four parts of ontology, Hofweber (Hofweber 2013) provides six areas of overlap between logic and ontology, namely:

1. Formal languages and ontological commitment. (L1) meets (O1) and (O4).
2. Is logic neutral about what there is? (L2) meets (O2).
3. Formal ontology. (L1) meets (O2) and (O3).
4. Carnap's rejection of ontology. (L1) meets (O4) and (the end of?) (O2).
5. The fundamental language. (L1) meets (O4) and (the new beginning of?) (O2).
6. The structure of thought and the structure of reality. (L4) meets (O3).

The use of ontologies and logic in computing is related to number three above - "Formal ontology (L1) meets (O2) and (O3)." The use and application of formal ontologies in computing is related to the characteristics that formal ontologies attempt to give precise mathematical formulations of concepts (properties) and the relations of these concepts in some formal language are based on a system of formal logic. In computing the formal language or ontolingua of the ontology is computer readable (Gruber 1992).

Based on this background of the transformation from ontology in philosophy to ontology in computing, the next section presents ontology within computing.

2.2 Ontology in Computing

The term *ontology* in computing is used widely referring to anything from taxonomy, a domain vocabulary, a conceptual model, to a formal logic-based ontology (McGuinness 2003). However, for this study the definition of an ontology as a shared, formal, explicit specification of a domain, typically describing a hierarchy of concepts and associating each concept's crucial properties with it is adopted (Broekstra et al. 2001). The purpose of ontologies in computing is to *represent* what exists (Gruber 1995) (a specified system or domain). Computational ontologies formally model the structure of a system (Guarino et al. 2009). In order to formally represent the relevant entities and relations of a system or domain, the ontology engineer analyses and organises the different entities of a system into its most basic concepts (also known in philosophy as universals) and relations between those concepts (Guarino et al. 2009). A taxonomy of the basic concepts (super-concepts and their sub-concepts) of a system or domain forms the backbone of an ontology (Guarino et al. 2009). An example from the accounting domain is to identify the concepts *resource*, *fixed asset*, and *building*. Resource is a super-concept of fixed asset and building. A physical building owned by an entity (business) would be an *instance* of its corresponding concept building.

Given the discussion above it is possible to make a distinction between Ontology in philosophy and computing ontologies. Ontology in philosophy aims to seek or discover the truth (Zúñiga 2001; Heidegger 1999; Mäki 2011). An ontology in computing is a *representational vocabulary* that is used to describe the relations between the set of objects of a domain to represent the knowledge of a specified domain without claiming to discover the truth or to obtain new knowledge (Mcguinness and Patel-schneider; Gruber 1995; Zúñiga 2001). Recent discussions in ontology engineering embrace the notion of philosophical Ontology through the use of upper ontologies such as DOLCE or BFO that adopts a specific philosophical stance during ontology construction (BFO 2011; Guarino 2015; Borgo and Masolo 2009; Gangemi et al. 2002; SUMO 2015).

2.3 Formal Ontology and Accounting

According to the philosophical overlap between logic and ontology this study forms part of the overlap where (L1) meets (O2) and (O3) i.e. a "*Formal ontology"* (Hofweber 2013). Hofweber (Hofweber 2013) identifies three kinds of formal ontologies: representational, descriptive and systematic. As this study only proposes to *represent* the definitions of the elements of the SFP in an inherently consistent and unambiguous manner, it falls within the representational formal ontology as identified by Hofweber (2013). The study does not attempt to truly describe, as a formal set theory, the entities of the financial reporting domain and is thus not a descriptive formal ontology. Accordingly, the *representational formal ontology* in this study is successful from a philosophical angle if the ontology successfully *represents* the definitions as presented in the CFfFR and DP/2013/1. The success of the proposed ontology is not dependent on whether the written definitions *truly describe* the financial reporting domain of entities, because there are several unresolved issues, and consensus within the domain is required to achieve this goal.

For the purposes of this study an *ontology* is a special kind of information object or computational artefact that captures the knowledge of a specified domain in a computer readable form. Furthermore, it is a formal ontology meaning that a computer can not only read the ontology but also reason with the knowledge and draw logical inferences from the assertions. The goal of this study is to build a representational formal domain ontology focused on the financial reporting domain using a representational vocabulary and formal language based on DL's and Web Ontology Language (OWL), with specific reference to the definitions of the elements of the SFP.

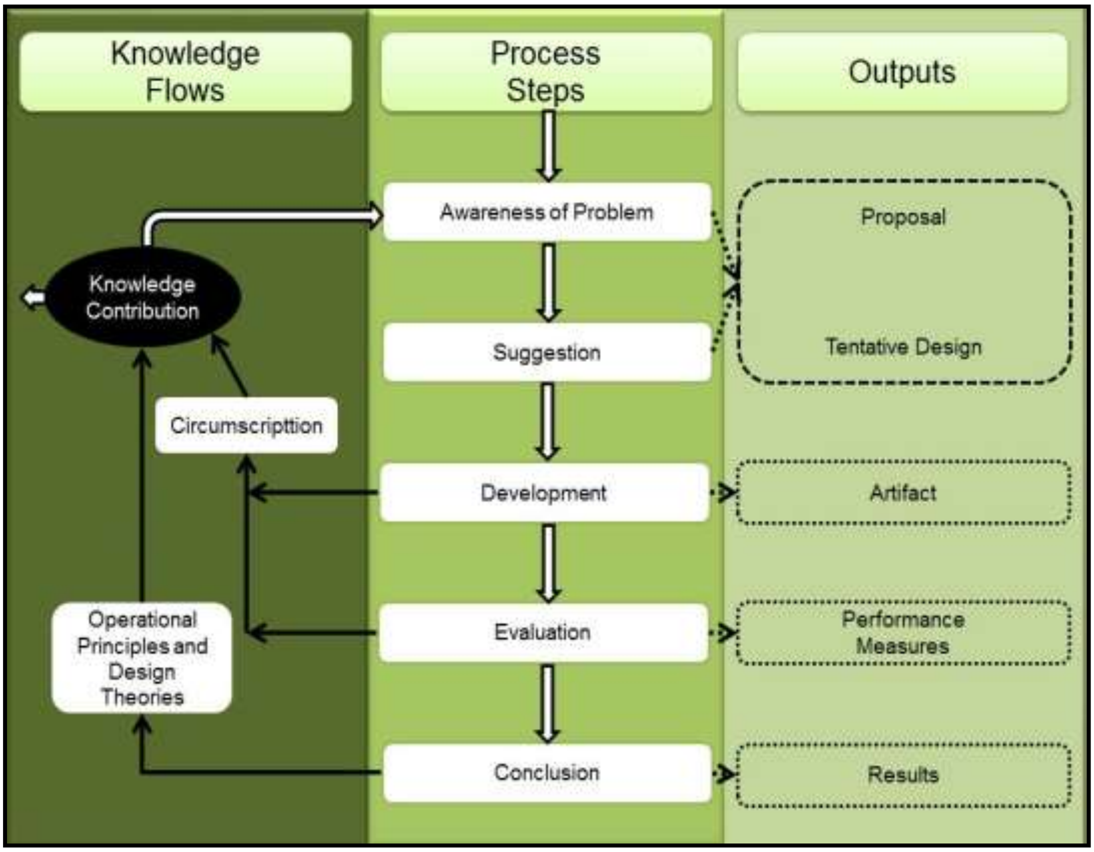
3 METHODOLOGY: DESIGN SCIENCE RESEARCH (DSR)

In this study *design science research* (DSR) [2] is adopted as research approach. DSR uses design as the research approach and the driving DSR concept is 'learning by building' (Hevner et al. 2004; Hevner and Chatterjee 2010; Kuechler and Vaishnavi 2008; Vaishnavi and Kuechler 2004). The DSR approach is relevant in cases where a study is testing previously untested interactions between existing artefact components or where new, untried principles are introduced (Kuechler and Vaishnavi 2011). The goal of a DSR project is to produce a purposeful artefact that addresses an identified pragmatic problem, especially in cases where elements of the problem will only arise during an attempted solution, or where the problem is not completely understood (Hevner et al. 2004). DSR is furthermore an iterative activity where the solution artefact is developed through various cycles of *awareness, suggestion*, *development* and *evaluation* (Vaishnavi and Kuechler

[2] As this paper reports on a second iteration of the first artefact, the same research methodology and development environment as in Gerber et al. (2014) is used.

2004; Kuechler and Vaishnavi 2011). Figure 3.1 below depicts a schematic presentation of a design science process model. [3]

Figure 3.1: Design Science Research Process Model



Crucial to DSR is the notion of rigour and relevance cycles, where *relevance* pertains to the interaction with the environment in which a real problem is identified and solved and rigour relates to the interaction with the scientific knowledge base where knowledge is used and contributed (Hevner and Chatterjee 2010; Hevner et al. 2004).

Within this research the *awareness* of vagueness, inconsistencies and ambiguities within the CFfFR resulted in a *suggestion* to use ontologies in computing to develop and ontology-based formal language to represent the concepts of the CFfFR. The first version artefact that was developed is an ontology that represents the definitions of *asset*, *liability* and *equity* of the CFfFR (Gerber et al. 2014). Feedback given the first iteration as well as the documentation and discussion in DP/2013/1, resulted in the development of the second iteration given the DSR approach. As before, an ontology engineering approach and development environment was used for the *development phase* as discussed in section 0.

[3] An advantage of DSR is that the researcher learns from knowledge obtained during a previous cycle and then builds on that knowledge during a following cycle. The development process continues until a satisfying answer / artefact is reached. The benefit for accounting is that DSR can be used in a cycle to investigate new untried principles in cases where elements of the problem will only arise during an attempt to a solution even when the problem is not fully understood.

3.1 Development Environment

The development of an ontology-based formal language for a domain commences with the construction of an ontology formally capturing the basic concepts and relationships of the domain. During the development cycles of the DSR project, Protégé 4.3 with bundled reasoners (e.g. FACT++ and Pellet) were used as tools to develop an OWL 2 ontology (W3C 2009). As a development approach during the DSR development cycle, an ontology engineering approach, described by Horridge (2009) and Noy and McGuinness (2000) was incorporated that consists broadly of the following steps:

- Identification of the concepts and concept hierarchy, including disjointness (section 5.2);
- Addition of all the relationships between concepts (section 5.2);
- Refinement of concepts based on relationships they participate in (sections 6.1 - 6.3);
- Identification of definitions (sections 6.1 - 6.3);
- Addition of annotations, which are used for meta-data or descriptions of anything that is represented (sections 6.1 - 6.3); and
- Refinement of the ontology through various iterations of the above steps.

The logical next step is the execution of the above steps for the ontology construction which is discussed below.

4 BASIC ASSUMPTIONS TO BUILD A FORMAL ONTOLOGY

4.1 Concepts and relations

A formal ontology consists of assertions about **concepts** and the **relations** between the concepts within a specified semantic (accounting) domain. The reasoner, which forms part of Protégé, uses the DL assertions to infer logical consequences about the domain and checks, for instance, whether these assertions are consistent. In order to build a logical consistent ontology the *semantic meaning* of the concepts and relations needs to be asserted formally. Before an ontology is constructed, assumptions are documented and whenever the modeller doubts the meaning of a specific concept or relation during the ontology construction process, it is usually an indication of an ambiguity and in this case it forces the identification of further assumptions about the meaning of concepts and relations.

Therefore, in order to build the formal ontology (or formal language), the semantic domain has to be analysed to identify the **most basic concepts and relations** within the specified domain. The CFfFR claims to represent the basic postulates or principles of the financial reporting domain and once the ontology has been built from these basic postulates, it should be possible to expand the ontology to principles (principle based standards) derived from the postulates to test if the principles are logically consistent with the most basic concepts.

4.2 Assumptions

For this research study we:

- adopt the view that the CFfFR should define the basic concepts and principles (postulates) necessary for the development of financial accounting standards;
- assume the position that the textual representation of the CFfFR, given its supposed role, is sufficient without any further explanations. It should not be necessary to explain concepts or statements from third party sources;
- use only the current textual representation of the CFfFR and DP/2013/1 to develop the ontology;
- regard situations where the published texts are unclear, ambiguous or inconsistent, as omissions and propose that this should be amended;
- accept the textual description as presented in the CFfFR and DP/2013/1, but suggest that this could be augmented with an ontology-based formal language where the semantics are captured unambiguously;
- consider the explanations provided in DP/2013/1 to clarify terminology used in the proposed definitions of DP/2013/1; and
- suggest that, if inconsistencies and ambiguities exist, they do not necessarily have to be solved as the solution may be complex, but they should at least be known.

5 FORMAL ONTOLOGY OF THE ELEMENTS NECESSARY FOR THE MEASUREMENT OF FINANCIAL POSITION

5.1 Representation of time: Past, Present and Future

Within the accounting domain, an important basic concept is **time** as *time* functions as a **deciding factor** between inclusion or exclusion of a concept (element) in terms of the relations **owned by** / **owed by** the concept entity.

Adding temporal dimensions to OWL is not straightforward as OWL's specific logic-based formalism does not support the representation of dynamically changing information (Krieger 2008). Several solutions to the representation of time in OWL have been proposed in literature, either by equipping the formal semantics (Artale et al. 2008; Lutz et al. 2008; Krieger 2008), or through modelling constructs (Hobbs and Pan 2004; Ma 2007; Connor and Das 2011). An ontology engineer would choose a solution based on the requirements that the ontology should fulfil.

In the basic definitions of the CFfFR, the concepts Past, Present and Future are pertinent.[4] Unfortunately, the CFfFR definitions do not clearly state what is meant with Past, Present and Future. It would be straightforward to assume that Past and Future are Intervals. Present is problematic, and for the first version of our ontology, the choice was made to represent Present as an Instant, with a member (individual) TimeOfConsideration. Past then has a temporalEnd, which is the TimeOfConsideration, and Future temporalBegins at

[4] In Gerber et al. (2014) the notion of time is discussed in more detail.

the TimeOfConsideration. TimeOfConsideration in this study refers to the instant whenever the inclusion or exclusion of an element is considered. This implies that it may for example, be the time when a contract is concluded, the reporting date, when an obligation is settled or an asset is derecognised.

The following is a schematic presentation of the notion of time:

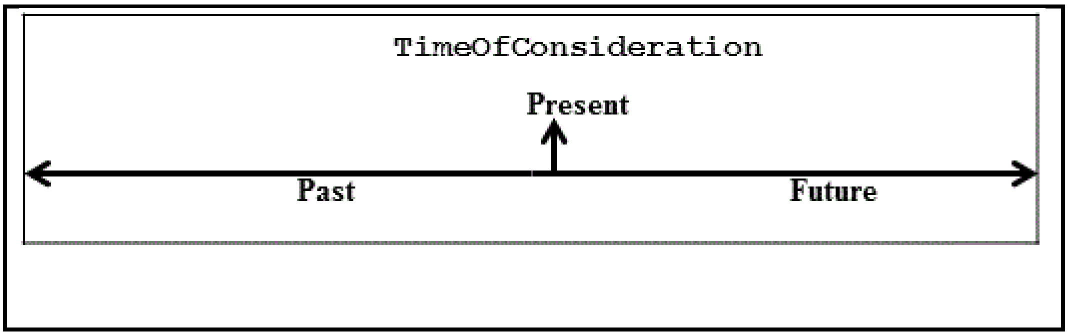


Figure 5.1: Presentation of Present as an Instant (TimeOfConsideration), with Past and Future as related Intervals (Gerber et al. 2014)

Identification of basic concepts and relations

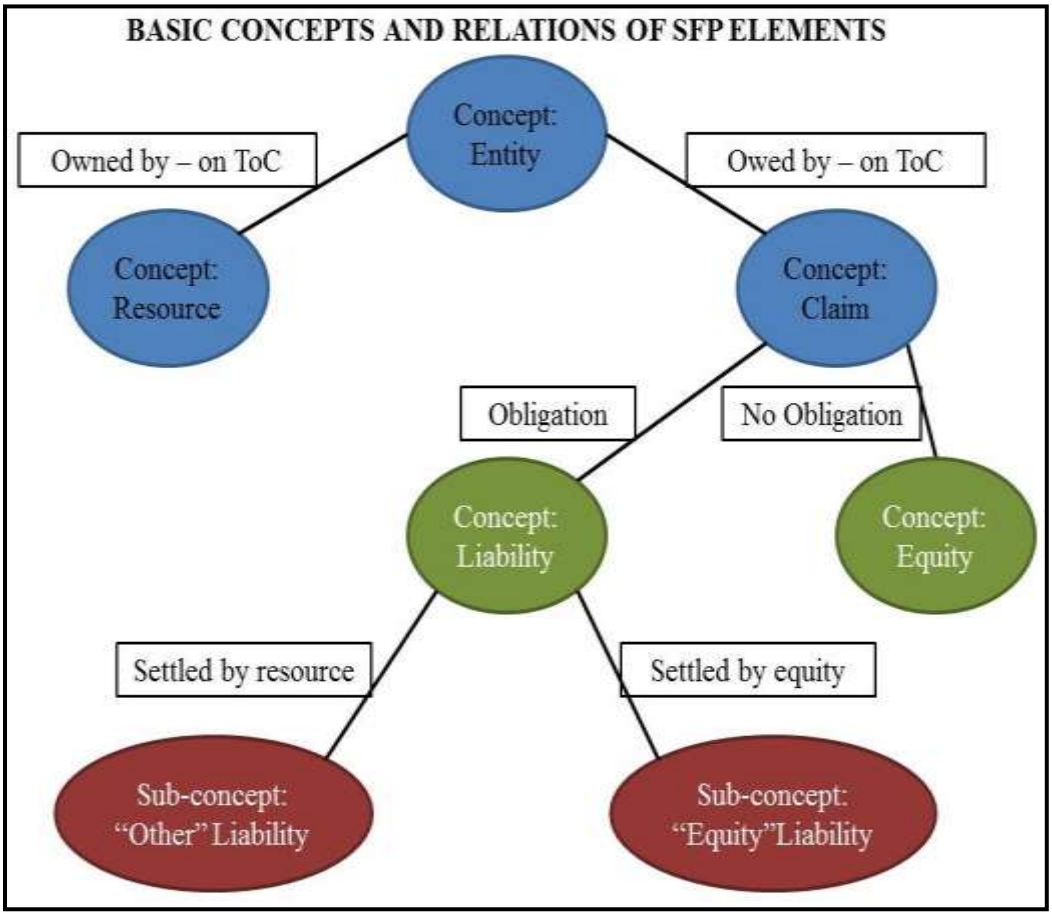
For the purpose of this study, we endeavoured to identify the **basic concepts** represented in the elements of the SFP. According to our analysis of the current definitions of the elements of the SFP, the basic concepts contained in them are **resources**, **claims** (against those resources) and **entity** (the owner of the resources and claims). These concepts are disjointed from each other as a **resource** cannot be a **claim** or an **entity**. Within ontology engineering, the identification of the concept hierarchy / taxonomy is a departure point for ontology construction. The taxonomy is the logical relationship between **sub-concepts** (lower on the hierarchy of concepts) to its **super-concepts**. These concepts should be defined in an unambiguous way to achieve an unambiguous formal language. Once these basic concepts of the elements are identified, sub-concepts presented in the current definitions of SFP elements could be identified.

No sub-concepts were identified under the concept *resources*, whilst two sub-concepts were identified under *claims*, i.e. *equity* and *liability*. The most onerous part was to determine **the most basic distinguishing aspect** between equity and liability. According to our reading of the comments in DP/2013/1, the most distinguishing aspect is the concept **obligation** as defined and explained in the DP/2013/1 on the reporting date / TimeOfConsideration.

Equity is linked to *entity* with the relation *owed by*, but it is not an *obligation* on the TimeOfConsideration (ToC) (distinguished from liability by the concept time). Once *equity* was distinguished from *liability* by the concept *obligation*, two sub-concepts of liability were identified. The most basic distinguishing aspect according to the discussion in the DP/2013/1 is: **How will the obligation be settled**? The two most basic ways in which an obligation may be settled is either by equity or by a resource. Even when an obligation is partially settled by equity and partially by a resource (hybrid instrument), it only represents a combination of the two most basic settlement methods.

Other concepts identified and included in the definitions and the ontology are: **control, past event** and **economic benefit**.
The following is a schematic presentation of basic concepts and relations of SFP elements.

Figure 5.2: Schematic presentation of basic SFP concepts and relations



Using the analysis of concepts and relations as presented in figure 5.2, the definitions as provided in the CFfFR and DP/2013/1 were analysed.

6 REPRESENTATION OF DEFINITIONS

6.1 Representing an Asset

6.1.1 The CFfFR

> *"An asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity*" (IASB 2010, 4.4(a)).

As the first modelling cycle of an asset was reported on in Gerber et al. (2014) this paper only reports on the findings of the second modelling cycle.

6.1.2 The Discussion Paper

> An asset of an entity is: "*a present economic resource controlled by the entity as a result of past events*" (IASB 2013). Economic resource is defined as: "*a right, or other source of value, that is capable of producing economic benefits*" (IASB 2013).

The asset definition as stated in DP/2013/1 addresses the following questions raised on the definition in the CFfFR:

1. A "resource" is defined as "a right, or other source of value". This provides some clarity, but from a logical modelling perspective, the definition "*resource*" is in the first instance "*a source of value*" of which a "*right*"[5] is one type of source of value. The implication is that there are also "*sources of value*" other than rights that are resources. It is open for interpretation to determine what the "*other sources of value*" may be. We suggest that the concept "sources of value" should be elaborated upon.
2. The sub-concept EconomicBenefit is still used in the definition of economic resource. The question is whether EconomicBenefit refers to a benefit with monetary value? Some clarity on the intended meaning of the concept "*economic*" is needed to avoid ambiguous interpretations of the concept "*economic*".
3. As the words "*controlled by*", is still used in the same manner in the definition in DP/2013/1 as in the CFfFR, the comments made in Gerber et al. (2014) regarding the concept of Control are still applicable.
4. DP/2013/1 excludes the term "expected", which solves the problems experienced with the representation of the CFfFR definition. We are in agreement with the discussion and preliminary views on uncertainty in the DP/2013/1 (IASB 2013). There is however still some uncertainty built into the term "capable" as it is used in the definition, which should make provision for some uncertainty.
5. Regarding the use of the time concept "*future*": We welcome the omission of "*future*" as we are of opinion that the term is not a deciding and essential concept or relation in the definition to determine an asset.
6. Regarding the use of time "*past*": The authors view the use of the time concept PastEvent as a deciding and essential concept in the definition and it does contribute to identify an asset and must therefore be included in the definition of an asset.

[5] See the DP/2013/1 (IASB 2013) par 2.14 (a) for an example of a "*right*".

7. Regarding the use of time "*present*": As acknowledged by the IASB (IASB 2013) par. 2.16 (b) "this notion is already implicit in the existing definition" and by making it explicit does not contribute to make the definition more clear, in fact it created some problems." To include "*present*" in the definition on the basis of "emphasising the parallel with the definition of a liability " (IASB 2013, para. 2.16 (b)) is not enough motivation to include it in the definition of an asset. When attempting to represent "*present economic resource*" it was unclear what "present" means? Is it the resource that has economic value at "*present*", or is it a "*present*" resource? What does the time notion "*present*" refer to, is it for example the *reporting date* or *the time of consideration*? If "*present"* refers to the reporting date, it is assumed and not clear from the text.

Based on the comments above we propose the following definition for an asset, which can be represented in an ontology-based formal language.

6.1.3 Proposed asset definition

An asset of an entity is: "*a resource (right or other source of value), which is under the control of an entity as a result of past events and which is capable of producing economic benefits.*"

The following is a formal representation of the proposed asset definition:

Asset

$$\mathrm{Asset} \equiv \mathrm{Resource} \sqcap \exists\, \mathrm{isCapableToProduce.EconomicBenefit} \sqcap \exists\, \mathrm{isUnderControlOf.Control}$$
$$\mathrm{Control} \sqsubseteq \exists\, \mathrm{isControlOf.Entity} \sqcap \exists\, \mathrm{isResultOf.PastEvent}$$
$$\mathrm{Resource} \equiv \mathrm{SourceOfValue} \equiv \mathrm{OtherSourceOfValue} \sqcup \mathrm{Right}$$
$$\mathrm{OtherSourceOfValue} \sqsubseteq \neg\, \mathrm{Right}$$
$$\mathrm{EconomicBenefit} \sqsubseteq \mathrm{Benefit}$$
$$\mathrm{PastEvent} \sqsubseteq \mathrm{Event} \sqcap \exists\, \mathrm{happenIn.Past}$$
$$\mathrm{Past} \sqsubseteq \mathrm{Interval} \sqcap \exists\, \mathrm{temporalEnds}.\{\mathrm{TimeOfConsiderationInstant}\}$$

Figure 6.1: Formal representation of the proposed asset definition

The following serves as motivation for the proposed asset definition:

1. The proposed definition includes the additional definition provided in the DP/2013/1 for economic resource. We are of opinion that the combination of the two definitions will eliminate possible ambiguities and vagueness. At this stage, we included "right or other source of value" in brackets after "resource" to clearly indicate what the intended meaning of the concept resource is.
2. The sub-concept EconomicBenefit was kept as it is a deciding concept in the process to determine an asset. The remarks regarding the clarity on the meaning of "*economic*" are maintained.
3. Based on the discussion above we omitted the notion of time "present" in the proposed definition. However, it is suggested that, should the IASB be of the opinion that "present" is a deciding notion in the definition, *present* should be

replaced with *time of consideration* as this should indicate the intended meaning of present as an instant and not a period of time. The proposed definition would then read as follows: "a resource (right or other source of value), which is *on the time of consideration* under the control of an entity as a result of past events and which is capable of producing economic benefits." This way it is stated clearly that the control of the resource happens on the date of reporting. It is also clear that the time before the date of reporting is the past and the time after the date of reporting is the future.

4. The notion of control is complex[6] and in order to represent this complexity *control* was modelled as a concept, control, and not as a relation as it is formulated in the current definitions. To represent *control* as a concept will make it possible to model different types of control as it is used in IFRS 10. The IASB proposes a definition for control on par. 3.23 with some further guidance in par 3.26 - 3.32 (IASB 2013).
5. It was decided not to dissect the proposed definition of *control* as provided in par. 3.23 at this stage, however we identified some possible issues in the proposed definition namely:
    a) The intended meaning of "present ability";
    b) The intended meaning of "that flow from it"; and
    c) The previous comments on "economic", "present" and "benefit" that are also applicable to the proposed definition of control.

6.2 REPRESENTING A LIABILITY

6.2.1 The CFfFR

> "*A liability is a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits*"(IASB 2010, 4.4(b)).

As the first modelling cycle of a liability was reported on in Gerber et al. (2014) this paper only reports on the findings of the second modelling cycle.

6.2.2 The Discussion Paper

> A liability of an entity is: "*a present obligation of the entity to transfer an economic resource as a result of past events.*" (IASB 2013).

When attempting to model *liability* as proposed in the DP/2013/1, the following was found:

[6] The complexity and different uses of control is discussed in the DP/2013/1 in detail (IASB 2013).

1. The transfer of an economic resource poses the same problem as "outflow of resource" in the definition in the CFfFR. A specific entity can only transfer economic resources defined as assets under control of that specific entity and not any economic resource.
2. As "expected" is not included in the definition proposed in the DP/2013/1 the problem identified in the CFfFR is resolved.
3. The discussion on the use of the time notion "present" in the definition of an asset is also valid in the use of the time notion "present" in the liability definition. The IASB should consider to rather use "time of consideration" instead of "present".
4. The use of the time concept TimeOfConsideration depends on the IASB's opinion if TimeOfConsideration contributes as a deciding and distinguishing factor to the definition of a liability. In the DP/2013/1 (IASB 2013, par. 2.16 (a)) it is emphasised that "present" / (TimeOfConsideration) contributes to decide whether a liability exists at the reporting date.

6.2.3 Proposed liability definition

Based on the modelling problems indicated and keeping the proposed definition of equity in mind, the following definition for a liability is proposed:

> A liability of an entity is: "*An obligation, owed on the time of consideration by the entity as a result of past events*".

The following is a formal representation of the proposed liability definition:

Liability

$$\text{Liability} \equiv \text{Obligation} \sqcap \exists\ \text{isOwedBy.Entity} \sqcap \exists\ \text{isResultOf.PastEvent} \sqcap \exists\ \text{isValidInTime.TimeOfConsideration}$$
$$\text{Obligation} \equiv \text{PresentObligation} \equiv \sqsubseteq \exists\ \text{isValidInTime.TimeOfConsideration}$$
$$\text{Obligation} \sqsubseteq \text{Claim} \sqcap \exists\ \text{isResultOf.PastEvent}$$
$$\text{Liability} \sqsubseteq \neg\ \text{Equity}$$

Figure 6.2: Formal representation of the proposed liability definition

1. The words "of the entity" in the definition in the DP/2013/1 is replaced with "*owed by the entity*". The change is to emphasise and clearly formulates the relation between the concepts obligation and entity.
2. The word "present" could be replaced with "time of consideration" as it will indicate clearly the intended meaning of present.
3. The phrase "*transfer an economic resource*" is not included in the proposed definition as a result of the problem discussed above. This concurs with the narrow equity approach as discussed in the DP (IASB 2013). The reason we opted for this option is not to have an inconsistency with the proposed definition of equity.

4. In order to accommodate the advantages of the strict obligation approach (IASB 2013, par. 5.37-5.43) we suggest that obligations must differentiate between "obligations to transfer an asset" and "obligations to transfer equity".
5. From the perspective of a liability, the only distinguishing factor between a liability and equity will be if a claim is an obligation at the date of reporting or not.

The proposed definitions of asset and liability concur with the IASB view that "an asset is a resource and a liability is an obligation**"** (IASB 2013, 25, par. 2.13-2.15)**.**

6.3 REPRESENTING EQUITY

6.3.1 The CFfFR

> "*Equity is the residual interest in the assets of the entity after deducting all its liabilities*" (IASB 2010).

"Analysing this definition, Interest as an additional and disjoint concept to be used for equity. ResidualInterest is a type of Interest that has to be refined further as it is *interest* in assets *after deducting* liabilities. A possibility for formalising the notion of deduction in a DL ontology is through set difference or formally: $B \backslash A = \{x \in B \mid x \notin A\}$[7]. For the proposed definition it is viable to use set difference and therefore Equity was initially represented as Asset and not Liability.

However, this definition of Equity resulted in an inconsistency in Protégé. The reasoner inferred that the Equity and therefore Asset concepts are inconsistent (or sub-concepts of Nothing) as indicated in Gerber et al. (2014).

6.3.2 The Discussion Paper

The same definition for equity is proposed in the DP/2013/1. The comments made during the first modelling cycle in Gerber et al. (2014) are still valid.

6.3.3 Proposed equity definition

The following definition for equity is proposed:

> Equity is: "a *shareholder' claim against the entity, that is the result of a past event and which is not a present obligation*".

The following is a formal representation of the proposed equity definition:

[7] DL is formally based on set theory and conceptually; mathematical deduction is represented with set difference.

Equity

$$\mathrm{Equity} \equiv \mathrm{Claim} \sqcap \neg\, \mathrm{PresentObligation} \sqcap \exists\, \mathrm{isClaimOf.Shareholder} \sqcap \exists\, \mathrm{isOwedBy.Entity} \sqcap \exists\, \mathrm{isResultOf.PastEvent}$$
$$\mathrm{Equity} \sqsubseteq \neg\, \mathrm{Obligation}$$

Figure 6.3: Formal representation of the proposed equity definition

The following discussion partly results from the analysis to identify the most basic concepts and relations of the accounting domain. During the modelling process, it became clear that the concept entity is in relation to only two basic concepts, namely resources and claims. Although all the items on the equity and liability side of the statement of financial position are claims, the entity does not have an obligation on the date of reporting to settle all the claims.

An obligation implies that on the date of reporting, the entity **must**, due to an event in the past, settle a specific claim in the future. By introducing the concept obligation, claims may be subdivided into "*claims with an obligation*" and "*claims without an obligation*" on the date of reporting. Some of the claims without an obligation are the result of a specific type of agreement, a shareholders' agreement. We propose that claims, which are the result of a shareholders' agreement without an obligation to settle the claim on the time of consideration must be classified as equity and the remaining claims would be classified as liabilities. The logical implication is that equity is not an obligation. This analysis resulted in the proposed definition for equity and agrees with the narrow equity approach as described in the DP/2013/1 in par. 5.30-5.33.

When the settlement methods of claims with an obligation at the time of consideration are analysed, it is clear that those claims (liabilities) may only be settled either by transferring control of an asset (transferring control of a resource), or by delivering an equity claim. Our analysis brought us back to the two most basic concepts of an entity. An entity does not have anything else to settle an obligation, except to exchange one obligation for another obligation.
Schematically the discussion above is presented as follows:

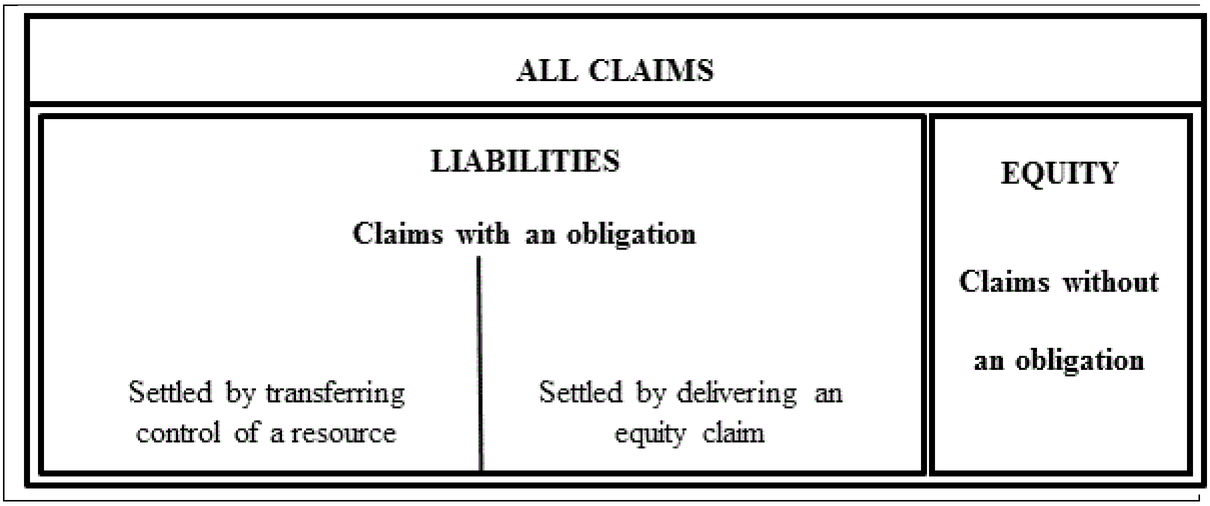


Figure 6.4: Analysis of claims

We suggest that disclosure requirements are formulated for the different classes of liabilities to accommodate the advantages provided by the strict obligation approach. This way one stays true to the modelling requirements and to the needs of the primary users of financial statements.

6.4 Summary of the representation process

The following table summarises the three definitions of *asset*, *liability*, *equity* and *economic resource* from the different sources in this study.

Table 1: Summary of definitions

Definition	CFfFR	Discussion Paper DP/2013/1	Proposed
Asset:	A resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity	A present economic resource controlled by the entity as a result of past events.	A resource (right or other source of value), which is, under the control of an entity as a result of past events and which is capable of producing economic benefits.
Liability:	A present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits.	A present obligation of the entity to transfer an economic resource as a result of past events.	An obligation, owed on the time of consideration by the entity as a result of past events.
Equity:	Equity is the residual interest in the assets of the entity after deducting all its liabilities.	Equity is the residual interest in the assets of the entity after deducting all its liabilities.	A shareholder' claim against the entity, that is the result of past events and which is not an obligation on the time of consideration.

Economic resource	No existing definition	A right, or other source of value, that is capable of producing economic benefits.	Incorporated into the definitions.

6.5 A summary of the changes proposed to the definitions

Comments on suggested changes from DP/2013/1 asset definition:

- The definition of an economic resource was included in the asset definition to avoid confusion with two separate definitions.
- "Controlled by" was rephrased to formulate "control" as a concept, as it is implied in the definition, and not a relation.

Comments on suggested changes from the DP/2013/1 liability definition:

- *Present obligation* is changed to "*An obligation … on the time of consideration"* because it is not clear what the meaning of *present* is. From the discussion of the concept *time*, it is possible to argue that *present* means *reporting date*. When the replacement of *present* with *reporting date* was evaluated with accounting experts, they mentioned a valid objection that the implication is that a liability has to be recognised when the transaction is concluded and not only on the reporting date. By replacing present with *time of consideration*, we address the objection as *time of consideration* refers to any time when the inclusion or exclusion of a possible liability (or any other transaction for that matter) is considered - on any reporting date.
- *"Of the entity"* is replaced with "*owed …. by the entity*". The word *owed* indicates clearly the relation between obligation and entity. See also the schematic illustration above.
- The phrase "*transfer an economic resource*" is not included in the proposed definition.
- From the perspective of a liability, as illustrated above, the only distinguishing factor between a liability and equity will be if a claim is ***an obligation on the time of consideration (reporting date)*** or not.
- To be consistent with the proposed liability and equity definitions two main classes of liabilities are proposed:
  1. Liabilities with the obligation to transfer **an economic resource**.
  2. Liabilities with the obligation to transfer **equity**.
- The proposal of two different classes of liabilities leaves room to have separate disclosure requirements for the two different classes of liabilities.
- It also provides room to disclose the different elements of hybrid liabilities according to the above mentioned disclosure requirements.

Comments on suggested changes from the DP/2013/1 equity definition:

- A new definition for *equity* is proposed. The current definition of equity does not contribute any distinguishing element between *asset* or *liability* and it was not possible to formally represent the current definition in the ontology.
- In the proposed definition, it is stated that equity is a claim against the entity, which is consistent with the schematic illustration above.
- The proposed equity definition distinguishes equity from liability by stating that although equity is a claim against the entity, it is *not an obligation at the time of consideration*.
- The proposed definition further limits equity to only business owners.

7 FINDINGS AND CONCLUSION

In this paper the position is established that using ontology is applicable both from a philosophical and computing perspective and can assist with the establishment of a rigorous, consistent and unambiguous CFfFR for accounting that represents the current knowledge of the financial reporting domain. In order to assess this position, we developed a representational formal domain ontology (artefact) from the natural text as provided in the CFfFR (IASB 2010) and DP/2013/1 (IASB 2013).

From a philosophical perspective of ontology, this study falls within the category representational formal ontology ((L1) meets (O2) and (O3)) as described by Hofweber (2013). This study does not propose to be a descriptive or systematic ontology as described by Zúñiga (Zúñiga 2001). The artefact represents the most basic concepts and relations (universals according to Aristotle) of the SFP elements of the accounting domain. The ontology of the definitions of the elements of the SFP stands in the tradition of the ontological thinking of Heidegger and the formal logic of Bolzano. In the philosophical terminology of Heidegger, this study provides a formal representation of the *being* of the concepts asset, liability and equity.

From a computing perspective, the result of this study is an artefact built by means of design science research in the form of a formal ontology. The formal ontology is formulated in a computer readable language (OWL) and tested for inconsistencies and ambiguities, using the reasoners provided by Protégé. The Protégé reasoner is based on formal logic (Description Logics). It can thus be concluded that the formal ontology of the elements of the SFP complies with Gruber's (1995) definition of an ontology as "an explicit specification of a conceptualization".

During the representation process of the formal ontology, various inconsistencies and ambiguities within the definitions of asset, liability and equity were identified. These inconsistencies and ambiguities were reported in section 0. The most important inconsistency identified was the inability to represent the CFfFR definition of *equity* due to the disjointness between the concepts *asset* and *liability*. In order to be able to represent the definitions of the elements of the SFP a definition for *equity* is proposed that is inherently consistent and unambiguous. Another result of the attempt to build a formal ontology of the definitions is the introduction of the concept "*claim"*, implied but not explicitly mentioned in the current definitions, as the most basic concept adjacent to the concept "*resource*".

A further contribution of the paper is that it uses established ontology technologies from computing and applies it to a natural language text from a specified domain i.e. financial reporting. The contribution towards the accounting community is that the methodology and ontology technologies used in this paper provides an approach and tool, based on formal logic, to identify inconsistencies and ambiguities in a text, written in natural language such as the CFfFR. By building the formal domain ontology, the authors demonstrate that it is possible to *successfully represent* the elements of the SFP in a formalised language that is a computer readable artefact and is inherently consistent and unambiguous.

In figure 7.1 a graphical representation of the basic concepts and relations of the definitions of the elements of the SFP, represented in the ontology is provided.

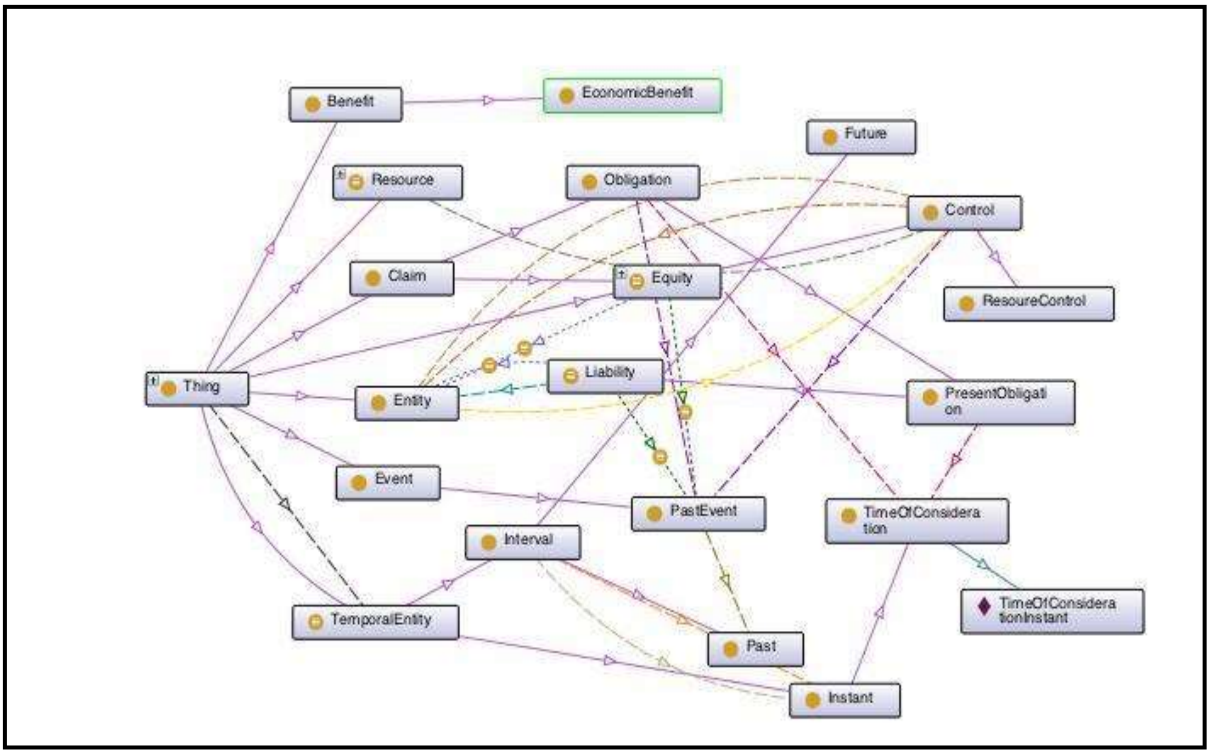


Figure 7.1: Represented ontology of the elements of the SFP

We acknowledge that our approach will not resolve all issues, but maintain the stance that a formal representation of the financial reporting domain in the form of an ontology should assist with the establishment of an unambiguous and consistent conceptual framework for financial reporting.

The accounting community could now be involved to decide whether the inherently consistent and unambiguous definitions of the elements of the SFP proposed in this paper, correctly represent the instances of the concepts, asset, liability and equity.

8 REFERENCES

Artale, A., N. Guarino, and C. M. Keet. 2008. Formalising Temporal Constraints on Part-Whole Relations. In Journal of Web Semantics, 5:46.

BFO. 2011. BFO. American Banker 168 (190): 572–577.

Borgo, S., and C. Masolo. 2009. Foundational choices in DOLCE. In Handbook on Ontologies (Second Edition), ed. S. Staab and R. Studer, 22:361–382. Springer Berlin Heidelberg.

Broekstra, J., M. Klein, S. Decker, D. Fensel, F. van Harmelen, and I. Horrocks. 2001. Enabling Knowledge Representation on the Web by Extending RDF Schema. In Accounting, Organizations and Society,, ACM 1-5811:467. Addison Wesley Professional.

Connor, M. J. O., and A. K. Das. 2011. A Method for Representing and Querying Temporal Information in OWL: 97–110.

Corazzon, R. 2013. Theory and History of Ontology. http://www.ontology.co/idx00.htm.

Gangemi, A., N. Guarino, C. Masolo, A. Oltramari, and L. Schneider. 2002. Sweetening Ontologies with DOLCE. In Knowledge engineering and knowledge management: Ontologies and the semantic Web., 166–181. Springer Berlin Heidelberg.

Gerber, M. C., A. J. Gerber, and A. J. Van der Merwe. 2014. An Analysis of Fundamental Concepts in the Conceptual Framework Using Ontology Technologies. South African Journal of Economic & Management Sciences 17 (4): 396–411.

Gruber, T. R. 1992. Ontolingua: A Mechanism to Support Portable Ontologies. Final. Stanford, CA, USA: Knowledge Systems Laboratory, Stanford University.

———. 1995. Toward principles for the design of ontologies used for knowledge sharing? International Journal of Human-Computer Studies 43 (5-6): 907–928.

———. 2002. What is an Ontology? Knowldedge Systems, AI Laboratory. Stanford University. http://www.ksl.stanford.edu/kst/what-is-an-ontology.html.

Guarino, N. 2015. DOLCE. Laboratory for Applied Ontology. http://www.loa.istc.cnr.it/old/DOLCE.html.

Guarino, N., D. Oberle, and S. Staab. 2009. What Is An Ontology? In Handbook on Ontologies, ed. S. Staab and R. Struder, 1–17. Springer-Verlag Berlin Heidelberg.

Heidegger, M. 1999. Ontology: The Hermeneutics of Facticity. Indiana, U.S.A.: Indiana University Press.

Hevner, A., and S. Chatterjee. 2010. Design Research in Information Systems: Theory and Practice. Integrated Series in Information Systems. Boston, MA: Springer US.

Hevner, A. R., S. T. March, J. Park, and S. Ram. 2004. Design science in information systems research. MIS quarterly 28 (1): 75–105.

Hobbs, J. R., and F. Pan. 2004. An Ontology of Time for the Semantic Web. ACM Transactions on Asian Language Processing (TALIP): Special issue on Temporal Information Processing 3 (1): 66–85.

Hofweber, T. 2013. Logic and Ontology. In The Stanford Encyclopedia of Philosophy, ed. E. N. Zalta. Stanford.

Horridge, M. 2009. Protege OWL Tutorial. http://130.88.198.11/tutorials/protegeowltutorial/.

IASB. 2010. The Conceptual Framework for Financial Reporting. London: IFRS Foundation.

———. 2013. A Review of the Conceptual Framework for Financial Reporting. DP/2013/1. Discussion Paper. London: United Kingdom.

IHTSDO. 2011. Snomed CT. International Journal of Disclosure and Governance. http://www.ihtsdo.org/snomed-ct/.

Krieger, H. 2008. Where Temporal Description Logics Fail : Representing Temporally-Changing. KI2008: Advances in Artificial Intelligence. Lecture Notes in Computer Science 5243: 249–257.

Kuechler, B., and V. Vaishnavi. 2008. On theory development in design science research: anatomy of a research project. European Journal of Information Systems 17: 489–504.

———. 2011. Extending Prior Research with Design Science Research : Two Patterns for DSRIS Project Generation. In DESRIST 2011,, 166–175. Springer-Verlag Berlin Heidelberg 2011.

Lutz, C., F. Wolter, and M. Zakharyaschev. 2008. Temporal Description Logics: A Survey. 2008 15th International Symposium on Temporal Representation and Reasoning: 3–14.

Ma, J. 2007. Ontological considerations of time, meta-predicates and temporal propositions. Applied Ontology 2: 37–66.

Mäki, U. 2011. Models and the locus of their truth. Synthese 5 (1): 47–63.

McGuinness, D. L. 2003. Ontologies come of age. In Spinning the semantic web: bringing the World Wide Web to its full potential, ed. D. Fensel, J. Hendler, H. Lieberman, and W. Wahlster, 1–14. First edit. MIT Press.

Mcguinness, D. L., and P. F. Patel-schneider. From Description Logic Provers to Knowledge Representation Systems: 271–288.

Mirriam-Webster Dictionary. 2014. Ontology. http://www.merriam-webster.com/dictionary/ontology.

Noy, N. F., and D. L. McGuinness. 2000. Ontology Development 101: A Guide to Creating Your First Ontology. Stanford, CA, 94305.

Smith, B. 1995. Towards an ontology of common sense. In International Journal of Human-Computer Studies, 43:641–667.

———. 2003. Ontology. In Blackwell Guide to the Philosophy of Computing and Information, ed. L. Floridi, 155–166. Oxford: Blackwell Publishing Ltd.

SUMO. 2015. SUMO. Suggested Upper Merged Ontology. http://www.ontologyportal.org/.

Vaishnavi, V., and W. Kuechler. 2004. Design Research in Information Systems. BRW. http://desrist.org/design-research-in-information-systems.

W3C. 2009. OWL 2 Web Ontology Language: Document Overview. http://www.w3.org/TR/owl2-overview/.

Wolterstorff, N. 1970. On Universals : An Essay in Ontology. Chicago, USA: The University of Chicago Press.

Zúñiga, G. L. 2001. Ontology: Its Transformation From Philosophy to Information Systems. In Proceedings of the international conference on Formal Ontology in Information Systems - FOIS ’01, 2001:187–197. New York, USA: ACM Press.

ACC002 Describing the GAP: Public Sector vs Private Sector Accounting and Reporting

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Abstract

"The state of government reporting is 'the elephant in the room.'"
— World Bank Group CFO Vincenzo LaVia

The global debt crisis has illustrated the dire consequences of insufficient transparency and accountability of governments and poor public finance management and reporting. Governments are not risk-free and the failure of fiscal management in the public sector has an economic impact that far exceeds the impact of losses incurred by corporate failures. This affects both the interests of the public as well as investors. With finances tight, growth stalling and unemployment high, the legacy of the financial crisis continues to play out across borders. Key decision-makers, politicians, and public finance management leaders are all taking key steps toward meaningful reform, including the adoption and implementation of accrual accounting and International Public Sector Accounting Standards (IPSASs).

Transformation within the public sector has never been more relevant as public institutions are being increasingly scrutinised in terms of their effectiveness in discharging government services and managing public funds. In South Africa, the public sector aims to bring financial transformation through increased legislation and regulation, and with accounting and reporting standards for the public sector entities that are closely aligned with IPSAS. However, while South Africa is rated first by the World Economic Forum for its strength in auditing and reporting standards, the accountability and reporting in the public sector lags far behind – how is it that this GAP exists?

The aim of this paper is to describe the reform in government accounting and the development of IPSAS to improve accountability in government reporting internationally. The IPSAS standards are then compared to the IFRSs that are developed and adopted broadly by private sector entities. Followed by the development and broad adoption of IPSAS, this paper describes the development of the local GRAP standards in South Africa. Key challenges, relating to public sector accounting in general, as well as the unique challenges in South Africa are then addressed, including the adoption of different types of accounting (cash basis accounting, modified cash basis accounting and accrual accounting) in South Africa.

Describing the GAP: Public Sector vs Private Sector Accounting and Reporting

The various economic and financial crises in recent years have highlighted the need for governments to not only improve the management of public sector assets and resources, but to also demonstrate this improvement by generating more transparent and comparable financial reports. Key decision-makers, politicians, and public finance management leaders are all taking key steps toward meaningful reform, including the adoption and implementation of accrual accounting and International Public Sector Accounting Standards (IPSASs).

Administrative reform within the public sector has never been more relevant as public institutions are being increasingly scrutinised in terms of their effectiveness in discharging government services and managing public funds. In South Africa, the public sector aims to bring financial transformation through increased legislation and regulation, and with accounting and reporting standards for the public sector entities that are closely aligned with IPSAS. However, while South Africa is rated first by the World Economic Forum for its strength in auditing and reporting standards, the accountability and reporting in the public sector lags far behind – how is it that this GAP exists?

The aim of this paper is to describe the reform in government accounting and the development of IPSAS to improve accountability in government reporting internationally. The IPSAS standards are then compared to the IFRSs that are developed and adopted broadly by private sector entities. Followed by the development and broad adoption of IPSAS, this paper describes the development of the local GRAP standards in South Africa. Key challenges, relating to public sector accounting and reporting in general, as well as the unique challenges in South Africa, are discussed. The findings indicate that the GAP is not so much in the application of different accounting frameworks, but rather in the quality and accountability of public sector reporting due to factors such as the cost of implementation, and the lack of systems, controls and expertise in government entities.

Introduction

Business and public sector entities today face several challenges such as emerging globalisation, new economic activities, and rapid advancements in information technology. In the wake of the global financial crisis, citizens, parliaments, the media and other interest groups are increasingly demanding timely, reliable and detailed information from public entities and institutions. To satisfy this demand for increased transparency and accountability, governments and other public sector organisations need to provide better and more comprehensive information about their financial position and performance. Many governments are exploring the adoption of accrual-based accounting frameworks in order to improve their decision-making ability, resulting in a push for the inclusion of accounting principles and practices in a set of globalised public sector accounting standards.

Global corporate collapses have also called for harmonisation between the accounting frameworks for private sector entities. This is demonstrated by the enlarged adoption of IAS/IFRS (International Accounting Standards/ International Financial Reporting

Standards) and the convergence project of the International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) (Nobes, 2011; Berger, 2012; Christiaens, Vanhee, Manes-Rossi, Aversano and Van Cauwenberge, 2014). The aim of the converging process of accounting standards is to enhance the international comparability of financial information in order to satisfy the information needs of different kinds of stakeholders in international markets. There has been a similar demand for the development and harmonization of public sector accounting.

Public sector entities often have a different purpose to that of private sector entities. In the public sector, the aim is for the entities to **provide the services** as set out in the entity's mandate, while the aim of private sector entities is to earn a profit for the owners of the entity. As a result, the accounting standards in the public sector need to cater for different circumstances to that of private sector entities, for example, the entity may be required to supply goods at a price which is below the market related price for the goods, the entity may hold assets which do not generate cash flows but which are necessary in order to fulfil its mandate, and the entity may earn revenue in a transactions for which it does not give anything to the counter-party in return (Berger, 2012; Deloitte, 2012).

Public sector accounting is in a phase of transition in many countries, where considerable differences still exist between the accounting systems and the published financial statements. There is a movement away from bureaucracy, towards accountability and transparency in public sector reporting. The key objectives of financial management and reporting in the public sector include achieving reliable, consistent and comparable accounting and financial reporting (Nobes, 2011; Berger, 2012; IPSAS Board, 2014). Debates in recent years have identified the International Public Sector Accounting Standards (IPSAS) as a suitable means of harmonising and aligning public sector accounting.

The development and adoption of the IPSAS on a global scale can be described as a revolution in government accounting. These standards aim for a greater focus on government financial accountability and transparency. IPSAS is a catalyst for providing high-quality transparent financial statements and, more importantly, enabling sound public finance management and improving operational performance (PwC, 2014). International organisations, such as the World Bank, that provide financial assistance to developing countries, are urging these countries to adopt IPSAS. Other countries, regardless of their political and economic systems, are encouraged to harmonize their national standards with IPSAS. Thus, IPSAS have become *de facto* international benchmarks for evaluating government accounting practices worldwide. For these reasons, IPSAS deserves the attention of accounting policy-makers, practitioners and scholars alike (Berger, 2012; Christiaens, et al., 2014).

The widespread move towards the adoption of IPSAS internationally, resulted in the development of Generally Recognised Accounting Practices (GRAP) by the Accounting Standards Board (ASB) for public sector (also referred to as government) accounting and reporting in South Africa. GRAP are accounting standards issued by the ASB in terms of section 89 of the Public Finance Management Act (PFMA), Act No. 1 of 1999. These standards are developed in alignment with IPSAS, with the aim to improve comparability at different governmental levels globally, as well as amongst the different spheres of government in South Africa. The Constitution of South Africa requires that national legislation must prescribe measures to ensure transparency by introducing GRAP to the three spheres of government. The PFMA addresses this requirement, by requiring public sector entities to comply with GRAP. The ASB issues GRAP standards based on all currently published IPSAS that are relevant to the National Treasury in South Africa. GRAP would be applicable to all levels of government (national, provincial and local), all public entities, parliament and provincial legislatures. However, national and provincial departments in South Africa are currently still using a modified cash basis for the presentation of financial statements, as set out in the 'Modified Cash Standard', published by National Treasury (2013).

This paper aims to describe the reform in public sector accounting and the development of IPSAS to improve accountability in government reporting internationally. The IPSAS standards are then compared to the IFRSs that are developed and adopted broadly by private sector entities. Followed by the development and broad adoption of IPSAS, this paper describes the development of the local GRAP standards in South Africa. The paper aims to identify the similarities and differences between these different reporting standards, and identifies certain challenges relating to financial reporting in the public sector and IPSAS's applications.

The development of public sector accounting standards

The International Federation of Accountants (IFAC) is the global organisation for the accountancy profession. The IFAC serves the public interest and contributes to the strengthening of the international economy by developing the global accountancy profession, establishing high quality standards, and promoting international convergence of standards. With the aim to focus on public sector entities, the IFAC established the Public Sector Committee (PSC) in 1986 as a standing technical committee. The PSC focused on the accounting, auditing and financial reporting needs of national, regional and local governments, related governmental agencies and constituencies. The PSC was renamed in 2004 the International Public Sector Accounting Standards Board (IPSAS Board), with the purpose to set standards for the general purpose financial statements in the public sector. Since 2011, the IPSAS Board has mainly focused on the development and issue of high quality accounting standards (Berger, 2012; IPSAS Board, 2013). The main objective of issuing IPSAS is to promote the significant benefits of achieving consistent and comparable financial information across jurisdictions, while the adoption of IPSAS by governments should improve both the quality and comparability of financial information reported by public sector entities around the world (Berger, 2012).

The IFAC and IASB agreed, in 2011, to strengthen their cooperation in developing public and private sector accounting standards, thereby committing to enhance initiatives of common and mutual interest. This includes collaboration such as regular liaison meetings, sharing of work programmes and input to specific projects, specifically to the Conceptual Framework project (Berger, 2012; IPSAS Board, 2014). The continued development and standardisation of public sector accounting is in the public interest, and the IPSAS Board achieves this by publishing International Public Sector Accounting Standards (IPSASs), promoting their acceptance and compliance on an international scale, and publishing other documents that contain guidance on issues and experience with financial reporting in the public sector (IPSAS Board, 2014).

IPSASs address issues on financial measurement and financial reporting for public sector entities, based on the accrual basis of accounting, as well as for financial statements prepared on the cash basis of accounting. Specifically, they define the form and content of the so-called “general purpose financial statements” and related financial disclosures in a government’s annual report. These financial statements consist of a statement of financial position and a statement of financial performance produced by an accrual financial accounting system, as well as a statement of cash flows produced by a cash accounting system. Budgets and the budgeting process is significant for government accounting, however, the IPSASs do not deal with the financial measures used in budgeting. IPSAS do not address the contents of reports produced to demonstrate compliance with laws and regulations, performance management and budget execution. These reports are regarded as “special purpose reports” outside of the scope of IPSAS, which are then often seen as a less-important spin-off of the financial information (Colyvas, 2014).

The emphasis on assuring financial integrity and a shift to accruals has led to the adoption of IPSAS in major countries and regions, including Australia, Canada, the UK and the United States, as well as countries such as the so-called BRICS countries, namely Brazil, Russia, India, China and South Africa (Berger, 2012; IPSAS Board, 2014). Developing countries require public sector institutional capacity for setting and implementing public policy, including the necessity for accounting reform (Chan, 2006). The social value of government accounting reform lies in its contribution to the development of goals, including poverty reduction.

The main features of IPSAS

The IPSAS program has evolved in two stages. From 1996 to 2002, the IFAC Public Sector Committee essentially imported international business accounting and financial reporting standards into the public sector by making relatively minor modifications. Since 2003, the IPSAS Board has consciously focused on issues that are unique to the public sector. These issues include taxation and other non-exchange transactions, the implications of the budget for financial reporting, and social policy commitments (IPSAS Board, 2014). The rising importance of financial accounting in the public sector, as epitomized by the emergence of the IPSAS on the world scene, reflects the belief in the power of objective financial recordkeeping, which has been credited with inducing business-like behaviour (Chan, 2006; Berger, 2014). The current focus of the IPSAS Board is on ‘public sector specific' issues, in areas where there is an urgent need for guidance regarding the financial accounting and reporting of the issue (IPSAS Board, 2014).

The initial goals of IPSAS were to promote greater government accountability, improved quality and reliability in accounting and financial reporting, better financial and economic performance, better financial management and discipline, and international harmonisation of reporting requirements (IFAC, 1996). Even though IPSAS was not meant only for developing countries, is may be reasonable to infer that developing countries were intended to be its primary beneficiaries. In recent years, the IPSAS Board has addressed developing countries by issuing a set of comprehensive 'cash basis IPSAS'. The cash basis, by definition, exclude the recognition of grants receivable and loans payable, and other non-cash assets and liabilities. Public sector entities that keep their accounts in accordance with IPSASs can choose to use either accrual accounting or cash accounting (Berger, 2012). The emphasis and preferred basis of accounting, as supported by the IPSASs, remains the accrual basis of accounting, although the cash-basis accounting is still very common, especially in Asia and Africa.

Rossi, Aversano and Cristiaens (2012) argue that IPSASs are more comprehensible if one is aware of their underlying assumptions. The first assumption is that there are so many common transactions in the private and public sectors that it is possible, and indeed preferable, to have one set of generally accepted accounting principles for both sectors. That is why most IPSASs are set by making modest changes to the standards promulgated by the IASB. Additionally, specific standards are developed for transactions and events that are unique to the public sector. The second assumption is that since business firms annually prepare consolidated financial statements under the accrual basis, governments should do the same. Consolidated financial statements cover a primary organisation and its subsidiaries in which the primary organisation has a majority ownership interest. This is only possible if all of the underlying entities apply the same set of accounting standards. The third assumption is that accounting standards are more objective and of a higher quality if an expert group that is independent of the organisations obliged to follow the standards sets them. For the public sector, independence can be achieved or at least enhanced by giving the task to a separate body, an advisory board, or increase the number of public (non-government) members. Finally, accounting standards should be produced through a due process. Due process means that research and deliberation should precede decisions. Furthermore, adequate opportunities are provided for interested parties to provide inputs before standards are finalised (Rossi, et al, 2012).

Among the more than thirty IPSASs, the most important standards are the first and second ones, which require governments to issue government-wide financial statements under the accrual basis at the end of a fiscal year. IPSAS1 provides the bases of presentation for general purpose financial statements in order to ensure comparability on the one hand with entity's financial statements of previous periods, and, on the other, with the financial statements of other public sector entities. It provides the structure and minimum requirements of the content of such financial statements, the recognition and measurement of specific transactions and other events, and the corresponding disclosure requirements. IPSAS2 requires the presentation of information about the historical changes in cash and cash equivalents of an entity by means of a statement of cash flows that classifies cash flows during the period between operating, investing and financing activities. Cash flow information allows users to understand how a public sector entity raised the cash it required funding its business and administrative operations and how that cash was used. Other IPSASs provide guidance on accounting for specific accounts, for example property, plant and equipment, inventories, intangible assets, investment property, and accounting for financial instruments; and required disclosures, for example related parties and segment information.

IPSAS versus IFRS – a comparison

There is a close relationship between IPSAS and the International Financial Reporting Standards (IFRS) as IPSAS standards are largely based on the principles of IFRS. The rationale for drawing from IFRS is to ensure greater comparability between private and public sector reporting when accounting for similar types of transactions (IPSAS Board, 2014; Deloitte, 2012). However, IFRSs are developed primarily for profit-oriented entities, whereas IPSASs are written for public sector entities that provide services to enhance and maintain the well-being of the citizens of a state. These differences between the two reporting frameworks stem primarily from the following three sources (Ernest & Young, 2013):

- Changes made by the IPSAS Board when developing an equivalent IPSAS based on an IFRS, to reflect differences between the public and private sectors
- Differences in the range of topics covered by the two sets of standards because of differences in the prevalence of particular types of transactions, such as non-exchange transactions
- Differences in the timing of when new or amended requirements are introduced into each set of standards Process of setting IPSAS standards

The following summary includes some of the **key differences** between IPSAS and IFRS (Ernest & Young, 2013, 2014; Deloitte, 2012), based on standards issued up until the end of 2014. This information is available in the public domain, and has been verified against several sources and publications. A more comprehensive table listing and comparing the various standards is included in Appendix A.

Service potential as part of the definitions and recognition criteria

Many of the assets and liabilities of entities within the public sector are acquired or incurred as a result of the entity's service delivery mandate, for example, heritage assets and parks maintained for public access. IPSAS introduces the concept of service potential into the definition of assets, liabilities, revenue and expenses. Service potential is also a supplementary recognition criterion to account for items that do not result in the inflow or outflow of economic benefits, where an item either contributes to or detract from the entity's ability to deliver its services.

Exchange versus non-exchange transactions
Non-exchange transactions are those transactions where an entity either receives value from another entity without directly giving approximately equal value in exchange, or gives value to another entity without directly receiving approximately equal value in exchange. Within the public sector, non- exchange transactions are prevalent. IPSAS provides principles to guide the measurement and recognition of non- exchange transactions, whereas IFRS is generally silent on the matter.

Recognition of revenue from government grants
IPSAS focuses on whether there is entitlement to the revenue from government grants (even though there may be restrictions on how the funds are spent), or an obligation to meet certain conditions, which is recorded as liability. The distinction between restrictions and conditions is crucial in determining whether to recognise revenue from a non-exchange transaction. As a result, government grants are generally fully released to income earlier under IPSAS than under IFRS.

Income tax
IPSAS presumes that entities that operate within the public sector are generally exempt from income taxes and therefore does not cater for the accounting of income taxes. In the unlikely event that an entity reports using IPSAS but is liable for tax, reference should be made to IFRS (IAS 12, *Income Taxes*) for guidance.

Financial instruments classification and measurement
With the introduction and ongoing development of IFRS 9, *Financial Instruments*, the classification and measurement of financial instruments under IFRS is changing from IAS 39. Prior to IFRS 9, the recognition and measurement of financial instruments were similar under IFRS and IPSAS. The impact of IFRS 9 on the public sector accounting and reporting is currently under review by the IPSAS Board.

Impairment of non-cash-generating assets
In light of the assets recognised based purely on their service potential (as opposed to economic benefits), IPSAS also caters specifically for impairment considerations for non-cash-generating assets. IFRS assumes that all assets will be cash-generating; whereas IPSAS assumes that the majority of a public sector entity's assets are likely to be non-cash generating. IPSAS 21, *Impairment of Non-cash-generating Assets* provides specific guidance on how to determine the value-in-use of such assets.

Reporting of budgets versus actual
With the increased focus on stewardship, service delivery and budget management in the public sector, IPSAS requires a comparison of the actual financial performance of an entity with the approved budget of that entity, where the budget is publicly available. There is no equivalent requirement in IFRS.

Elimination of private sector specific concepts
IFRS provides principles for certain economic phenomena that are irrelevant to the operations of a public sector entity, such as accounting for share-based payments and earnings per share disclosures. IPSAS excludes such guidance and refers reporting entities back to IFRS if and when applicable.

Consolidations and interests in associates and joint ventures
With the introduction of IFRS 10, *Consolidated Financial Statements*, IFRS 11, *Joint Arrangements* and IFRS 12, *Disclosures of Interests in Other Entities*, there are significant differences between IFRS and IPSAS. However, the IPSASB has issued a similar 'package of five' new IPSASs for the public sector, with final adoption in 2017. IPSAS 34, *Separate Financial Statements*, IPSAS 35, *Consolidated Financial Statements*, IPSAS 36, *Investments in Associates and Joint Ventures*, IPSAS 37, *Joint Arrangements*, and IPSAS 38, Disclosure of Interests in Other Entities. Because the underlying IFRSs have changed, the IPSASB has developed IPSASs 34 to 38 so that convergence with the related IFRSs is maintained to the extent appropriate. These IPSASs also incorporate important guidance to make them appropriate for application in the public sector. "These five IPSASs establish requirements for how public sector entities, including governments, should account for their interests in other entities," said IPSASB Chair Andreas Bergmann (2014). "Accrual-based accounting practices provide a comprehensive picture of the financial performance and position of public sector entities. Appropriate accounting for interests in other entities is an important aspect of this comprehensive picture."

Growing divergence in the conceptual framework of the IPSAS Board and IASB
The IPSAS Board is in the process of developing its own conceptual framework, proposing concepts that may be more suitable in the public sector context. We may see further differences in the outlook and focus of the IPSAS Board and IASB in the future. The development of the public sector conceptual framework is discussed in more detail below.

Consideration of other recently published IFRSs, namely IFRS 13, *Fair Value Measurement*, and IFRS 14, *Regulatory Deferral Accounts*, have not yet been completed by the IPSAS Board for its appropriateness for the public sector. The IASB has recently published IFRS 15, *Revenue from Contracts with Customers*. The impact of this new standard on the existing public sector IPSAS 9, *Revenue from Exchange Transactions*, and IPSAS 23, *Revenue from Non-exchange Transactions (Taxes and Transfers)* has not yet been determined (ASB, 2014).

It is noticeable that the differences listed above are mainly limited to the specific information needs of users of public sector financial information, and timing differences between IFRS and IPSAS. The major differences are to be expected, since the IFRS is developed for profit-oriented entities while the IPSAS is geared towards public sector entities that provide public services.

Challenges in public sector accounting

In their study of accounting and reporting systems in Europe, Rossi, et al (2012) argues that even though the IPSAS Board has, as one of its main purpose the harmonisation process, that its efforts are rather towards unification of accounting procedures and tools. The IPSASs and IPSAS Board Conceptual Framework project are based on accrual accounting, while many countries still applies the cash basis of accounting, or in other cases a modified cash basis. In many countries, the cash based accounting system remains an important condition to enable democratic decisions regarding the resources to be collected and to be spent by government (Rossi, et al., 2012).

The IPSAS is considered the definitive set of accrual-based international accounting standards for the public sector. However, a key issue for public sector financial reporting is that many governments still adhere to the cash basis of accounting, and therefore provide minimal disclosures relative to what the public, banks, investors, and credit providers generally expect of the private sector (Bergman, 2014). There is a growing demand for the same level of financial transparency and accountability from the public sector as is already expected from the private sector, given the multitude of banks and private sector investors that hold government debt. Accrual-based accounting ensures greater transparency and accountability in public sector finances as well as better monitoring of government debt and liabilities. Implementing these standards would in effect compel a government to open its books to outsiders. As mentioned earlier, IPSAS seeks to balance some governments' possible reluctance to tell and the public's right to know. In addition to the historical use of the cash basis for accounting and reporting, there are several other challenges in public sector accounting. These include adequate accounting systems that support the IPSAS reporting requirements, comprehensive internal controls, accountability and authorisation, and the shortage of appropriately skilled individuals, which are all external to the scope of the IPSAS.

System Capability and Skills Shortages

Annual financial reporting to the public is not the only function of a government's accounting system. Throughout the year, the accounting system is responsible for producing reports in response to requests by department managers, political executives, and parliamentary committees or members. Reports to management and other authorities, including reports against budgets and predetermined performance indicators and objectives, require sophisticated accounting systems and internal controls. Public sector entities and government departments need to ensure the implementation of the right software and other reporting systems to meet their accounting and reporting requirements. Too often, the wrong systems are in place, or the systems are insufficient to meet the information requirements or vice-versa, the right systems are in place but not implemented effectively (Rossi, et al., 2012). Government accounting systems' hardware is useless without software applications, and software is mindless without an adequate and integrated system of internal controls.

The collection, recording, analysis and extracts of financial data are all products of the capacity, security and efficiency of the accounting system, whether it is situated within a private or public entity. Decision useful financial information on the accrual basis can be produced only by an accounting system with sophisticated features. These features include: (1) the accounting equation, as its conceptual foundation; (2) a detailed chart of accounts for the elements of the accounting equation, as well as revenues and expenses as changes in net assets; (3) a double-entry recording system; and (4) the ability to translate standards (such as IPSAS) into specific policies and procedures applicable to the organisation concerned. These features have to be incorporated in the accounting system, along with human resources and financial resources made possible by political support and managerial leadership. By assuming these prerequisites, the IPSAS is silent on the necessity of building system capability. The emphasis in IPSAS is rather on the outputs of a government's accounting system, and pays little attention to its "through-puts" (operating procedures) and inputs. Reporting in accordance with IPSAS has little value if the financial information reported is not supported by operational systems that include features and controls ensuring the completeness, accuracy, validity, classification and authorisation of the underlying transactions. This means that officials responsible for designing and funding a government's accounting system have to take a holistic and operational perspective.

There is a significant shortage of appropriately skilled professionals in the public finance management area (specifically in South Africa), which is affecting financial reporting and good governance (Gloeck, 2012; Warren, 2014; Ramabulana, 2015). This is an ongoing challenge which needs to be addressed with urgency. The public sector needs to be innovative in attracting and retaining the best talent, ensure resources are equipped to execute their mandates and should enforce a stronger ethical compass in order to better serve the public. An emphasis on accountability and political will, as well as collaboration between the government and private sectors, will address some of the current challenges.

Conceptual Framework

The Conceptual Framework (CF) project has been the priority of the IPSAS Board for the past eight years, resulting in its approval and publication in October 2014. The CF establishes the concepts that are to be applied in developing IPSAS and Recommended Practice Guidelines (RPGs) that are applicable to the preparation and presentation of general purpose financial statements for public sector entities (IPSAS Board, 2014). It reflects key characteristics of the public sector in its approach to elements of financial statements, the measurement of assets and liabilities, and the presentation of financial reports.

The main view of the developers of the CF is that it should address certain key characterises of the public sector and include both **accountability** and **decision-making** as objectives of financial reporting. The notion of accountability is broad, and includes the provision of information about the public sector entity's management of the resources entrusted to it, which is useful to assess the sustainability of the entity's activities and the continuity of the provision of services in the long term. Financial reporting should further provide information that is useful to lenders, creditors, donors and others to inform their decisions about whether they should provide resources on a voluntary basis. Taxpayers generally provide resources on an involuntary basis, but they need information to inform their voting decisions (Stanford, 2014). This emphasis on accountability of governments and public sector entities give rise to an increased importance of the reporting of information such as service performance and long-term fiscal sustainability reports.

Critics feel that government accounting principles are not likely to be derived from the kind of conceptual framework being formulated at the IPSAS Board (Chan, 2006; Rossi, 2012). They argue that conceptual frameworks have not been helpful in making *specific* accounting policy choices, and if the experience of other accounting standards boards' is any guide, constructing conceptual frameworks is a never-ending exercise and requires a delicate balance between generality and specificity. Andreas Bergmann, the Chair of the IPSAS Board (2014) comments that, "without robust, transparent, and accountable arrangements for financial reporting and financial management, it is not possible to reliably assess whether decision- making by governments has been in the public interest" (Bergmann, 2014, p2). Bergmann (2014) states that for governments to adequately discharge their accountability and provide the standard of information required by investors, the reporting of high-quality financial information is paramount.

Impact of global financial crisis

The stress in the economy and the debt crisis in several countries around the world have demonstrated the challenges of maintaining financial stability for many countries. Many governments are exploring the adoption of accrual-based accounting frameworks in order to improve their decision-making ability to prevent and respond to these issues. The global financial crises in 2008 – 2009 broad the interdependency between the public sector (governments) and private enterprises to the foreground, and required unprecedented government interventions. Such interventions typically included the recapitalisation and investments by governments in public sector entities (for example Freddie Mac and Fannie Mae in the US, Hype Real Estate in Germany and Northern Rock in the UK). In some cases, direct asset purchases were made, for example public sector entities purchasing illiquid or toxic bonds from banks. In many countries, state guarantees were provided for bank deposits, interbank loans and even corporate loans. These interventions raised the question of how to reflect these actions appropriately in the financial reporting of public sector entities, emphasising the need for a clear and fair presentation of the economic consequences of these interventions (Ernest & Young, 2011; Berger, 2012).

The global financial crisis has raised a number of issues that required thorough consideration in the analysis and development of accounting standards. When some governments purchased interests in financial institutions and other corporate entities, the public sector entities became shareholders of these entities. From the perspective of the public sector entity, consideration had to be given to how these interests should be accounted for and whether they need to be consolidated. A further question was how to measure these assets, and the risk that impairment losses might need to be recognised in the public sector entities in subsequent accounting periods. In some of these examples IPSAS provides sufficient guidance to achieve accountability in reporting, however, in other cases where current IPSASs contain no specific guidance, for example non-contractual financial guarantees, this gives rise to financial risks not shown in the general purpose financial reports. Warren (2014) argues that to properly report on public finances, all the obligations of governments, and their movements, need to be reported. This emphasises the need of transitioning from cash- to accrual-based financial reporting. The move to accrual reporting is an important step in improving public sector financial management (Warren, 2014).

Developing countries face the daunting challenge of raising the standard of living of their peoples. The UN Millennium Development Goals and Poverty Reduction Strategies can be realised only if governments and government officials have the necessary capacity to manage scarce resources and institutional capacity building programs (Chan, 2006). The success of government accounting reform depends on political and management support, in addition to the availability of budgetary and human resources, and information technology.

Usefulness of IPSAS for developing countries

The application of IPSAS is relatively new for many developing countries. The historical orientation of financial accounting information further limits its *usefulness* for control and planning, which require real-time and future oriented information. Summarised financial statements are often not sufficiently disaggregated to match the scope of responsibility of managers. IPSAS-based financial statements are not designed to demonstrate the accountability of subordinates to their superiors, and of the executive to the legislature. Under the initial leadership and influence of mostly English speaking countries, the IFAC Public Sector Committee chose to emphasise year-end consolidated financial statements. This kind of reporting addresses only external financial accountability at best. As such, IPSAS can make only a limited contribution to institutional capacity building in developing countries (Chan, 2006).

Several government departments in developing economies are currently using the modified cash basis, with the aim to move towards accrual accounting as the long-term objective. The accrual basis of accounting provides users with more reliable and relevant information regarding governments' assets, liabilities and any obligations. It also provides users with information regarding managements' performances with resources to achieve its service mandate (Berger, 2015). A strong argument is made for government accounting and reporting in developing economies to not only include the accrual-basis of accounting for financial reporting purposes, but to also integrate it into the budgeting process. To the public at large and to most government officials, the budget is still the primary financial document of government. Warren (2014) argues that the budget is key for government financial decisions, and it is the budget to which governments are held accountable by their legislatures. Therefore, financial information based on the accrual basis should be integrated into the budget process (Warren, 2014). Accrual budgeting explicitly forecasts and shows how resources are raised and used, and how obligations are incurred and settled. Cash budgeting, on the other hand, only focuses on the forecasting and allocation of one economic resource, that is, cash. Fundamentally, accrual budgeting differs from cash accounting by being transparent about two separate decisions. First, there is a decision on the cost of an item, and secondly, there is a decision on how and when that cost will be settled. Cash budgeting conflates these two separate decisions, and therefore fails at times to fairly forecast their economic impact (Warren, 2014).

IPSAS assumes the existence of a robust system of internal control in a government's financial management and accounting systems. As recent corporate financial scandals in many developed countries have demonstrated, the reliability of accounting-based financial statements can be undermined by the manipulation of underlying transactions. This situation can also happen in public sector financial reporting. Considering the vulnerability of the government in developing countries to financial misconduct, the reliability of numbers in their financial statements cannot be taken for granted, even if IPSAS are used. For this reason alone, the accounting profession has an important role to play in the global fight against government corruption. A study by Olken and Pande (2011) has shown that developing countries are far more susceptible to corruption amongst government officials. The impact on service delivery is clear, in that government is forced to render services with greater resource constraints, thereby hindering either the quality and/or quantity of services rendered.

Public Administration recognises three models of administration that governments have followed over time. These models are not strictly and neatly applied, as overlapping would naturally exist when applied in a real world scenario. These models are *Traditional Public Administration*, *New Public Management*, and *Governance/Networking Theory*. The New Public Management and Governance are more recently developed administrative models that require the treatment of the State as a corporation, or for government to engage in intensive collaboration with the private sector in order to discharge its mandate. Some would argue that Traditional Public Administration is an out-dated model and would not be suitable as a framework by which to manage a country in the 21st century.

However, the general characteristics of Traditional Public Administration are far more appropriate in a developing country than the latter two models. These include, among others: hierarchical structures, highly regulated legal frameworks, and merit based appointments, rather than political (Hughes, 2003). Official corruption threatens a government's legitimacy and authority, and reduces the amount of public money available to fund public services. Incompetent financial management is costly in terms of the inefficiency and disruptions it induces in the government itself and the economic system. Mismanagement of cash results in financial losses. Imprudent financial investments can lead to greater risk exposure and reduced returns. Delayed or under-collection of taxes reduces the amount of available financial resources and increase liquidity and solvency risks. Failure to pay bills when they are due can potentially create liquidity or solvency problems for employees, contractors and other creditors. Defaulting on interest payments and principal repayments to bond holders harms creditworthiness and may raise the cost of borrowing. For all these reasons, government accountants, auditors and financial managers are on the front-line of the fight against corruption. In her address at the National Conference on Corruption and Governance Challenges, in Nigeria on 21 January 2010, the Public Protector of the Republic of South Africa, Advocate Thuli N. Madonsela, has drawn attention to the need to promote good governance, with specific reference to the values of accountability, integrity and responsiveness as pillars.

Currently, IPSAS seems to take for granted that transactions are duly authorised and properly executed. The role of accounting standards is to decide whether to recognise the consequences of these transactions and, if so, how to measure and report these effects. Accounting standard setters are certainly aware of the possibility that transactions may be "structured" to take advantage of what accounting standards allow. However, it is primarily the auditor's role to deal with this phenomenon. Similarly, unauthorised transactions and improperly executed transactions are matters of concern to auditors and management. This attitude overlooks the auditor's reliance on the capability of the accounting system to generate audit trails (Christiaens, 2014). Management is responsible for the authorisation and proper recording of transactions, and audits conducted in terms of the International Standards on Auditing (ISAs) would highlight these deficiencies and non-compliance.

Besides the broader economic and social considerations, the detrimental effects of financial misconduct on government financial reports should motivate the IPSAS Board to pay explicit attention to financial integrity. Specifically, the board might undertake or encourage research on the implications of financial integrity, or lack thereof, for IPSAS. In principle, weak internal controls may lead to unreliable numbers in financial statements. Generally, accounting standards take on a greater social role as accountability requirements in countries that require higher standards of ethical behaviour. Government accounting standards in effect become government accountability standards.

Public Sector Accounting in South Africa

The World Economic Forum (WEC) rates South Africa first for the strength of its auditing and reporting standards, and third for efficiency of corporate boards (WEC Global Competitiveness Report, 2014/2015). Yet, on the burden of government regulation South Africa is ranked 120th out of 144 countries. Given the tendency of developing states to be more prone to corruption, it seems that the model most appropriate for South Africa as a developing economy would be one which compliments most the internal and external audit process. Formal documentation usage and controls, management supervision, and suitably trained and skilled management are all components of a good control environment. A hierarchical organisational structure also allows for greater facilitation of audit procedures compared to a disaggregated organisational structure where operations are carried out in an inter-organisational manner. The Traditional Public Administration model is presently considered the most appropriate model for South Africa to use. This does not, however, preclude the government from applying principles from the more advanced models, such as outsourcing of certain functions to the private sector. The ranking on legislative burden identified above therefore may reflect an onerous administrative environment, but in reality, these requirements are unavoidable in order to minimise maladministration.

Most government departments in South Africa prepare financial statements in accordance GRAP. These financial statements, as well as performance reports, financial management and internal control, are some of the onerous reporting requirements set out in different legislature promulgated since 1995, as well as numerous sets of regulations and guidelines. In fact, as argued by Gloeck (2012), never before in the history of South Africa has the public sector undergone such a comprehensive, sustained and far-reaching programme of reforms.

South Africa has, since the promulgation of the PFMA, witnessed a torrent of financial management reforms in the public sector (Gloeck, 2012). As mentioned earlier, the ASB is required to determine GRAP for government departments, public entities, trading entities, constitutional institutions, municipalities and boards, commissions, companies, corporations, funds or other entities under the ownership control of a municipality, and parliament and the provincial legislatures, which are set out in Directive 5 (ASB, 2014). The ASB revises the GRAP Reporting Framework on a regular basis, and publishes 'Directive 5' to reflect new standards of GRAP, interpretations or other publications that have become effective or have been issued by the Board, standards and pronouncements issued by other standard-setters for a particular reporting period (ASB, 2014). This includes new standards and updates issued by the IPSAS Board and the IASB (where they are relevant to the South African public sector). The GRAP Reporting Framework for a particular reporting period comprise of a combination of the standards of GRAP and IFRSs. In practice, a number of departments and public entities have not implemented GRAP and are still using the modified cash basis of accounting.

Reporting on the modified cash basis of accounting recognises transactions and events only when cash is either received or paid. A transaction incurred on debt, for example normal purchases and sales where the creditors and debtors will pay or be paid later, is not recorded in the financial records when the transaction occurs. Recording is done only when the actual cash is received or paid on the credit sales and/or purchases (Berger, 2012). Under the modified cash basis, supplementary accrual information is provided in the notes to the financial statements to assist the users in identifying other assets and liabilities that would have been recognised had an accrual basis of accounting been applied (Modified Cash Standard, National Treasury, 2013). Currently, provincial legislatures are allowed to apply the modified cash basis, however, for financial periods commencing on or after 1 April 2015, all trading entities, parliament and the provincial legislatures are required to prepare their financial statements in accordance with the Standards of GRAP (ASB, ED128, 2014).

The financial management and reporting of South Africa's government departments and local municipal departments are showing marginal improvements, as evidenced by the slight increase in the number of 'clean' audits in the 2013/14 financial year. Of the 469 audits conducted by the Auditor General's office (AGSA) in the 2013/14 financial year, 119 (25%) attained clean audits – this is a year-on-year improvement of 3% from the 22% in the previous financial year. According to Ramabulana (2015) the three biggest losers of poor financial management in the public sector in South Africa are business, the economy and vulnerable communities. He argues that "poor financial management impacts negatively on service delivery to already marginalised previously disadvantaged communities already entrenched in the grip of poverty" (Ramabulana, 2014, p2). The biggest problem that needs to be addressed in the public sector in South Africa is the lack of skills, which is especially evident in the rural areas and smaller provinces (AGSA, 2014). The South African Institute of Government Auditors (SAIGA), states in their position paper about the financial skills shortage in South Africa's public sector (2012), that the financial skills shortage is the combined responsibility of the universities, the auditing firms, the public sector at large, and the AGSA (Gloeck, 2012).

Conclusion

The goal of IPSAS is to improve the quality of the financial information of public sector entities, to strengthen the transparency of public accounts and to make decision makers more accountable. This modernisation seems necessary particularly in the context of the sovereign debt crisis which requires particular attention to accountability and control of public accounts. Accrual accounting is a key element of modern public management, as it increases transparency of government accounting and provides more complete information. This improves, among other things, government decision making and makes them more responsible. However, IPSAS do not address all the accounting and reporting challenges in the public sector, for example, the preparation of budgets and its comparability to the reported financial results, setting and meeting predetermined objectives and key performance indicators, and issues relating to fraud and corruption.

This paper describes the development of IPSAS and the urgent need, globally as well as in South Africa, for compliance with independently set accounting standards that are attested by an independent auditor. This will not only validate the reliability of the reported financial information, but also assist in reducing the debates of smoke and mirrors in accounting, towards debates on financial and economic impact. This is where fiscal policy debates should be (Warren, 2014). Professional accounting skills are needed to introduce the accrual basis in all areas of public sector accounting and financial management, including accrual budgeting, in order to support transparency, accountability and financial decision-making in the public sector.

Several challenges are identified in public sector accounting, pointing towards areas for further studies. An investigation of the efficiency of internal systems and capacity building in South Africa may point to possible gaps in the availability of reliable financial information to support management decision-making, planning, and financial reporting in accordance with IPSAS. Stated differently, do regulations and legislature (including enforcing the application of IPSAS) actually lead to transparency and quality financial information that is useful for decision making and planning in the public sector? Lastly, how, if at all, will the new developments in Integrated Reporting result in a fresh, holistic approach to public sector accountability and decision-making?

References

Accounting Standards Board (ASB) (2014). *Invitation to comment on the proposed GRAP reporting framework for 2015/16 and amendments to Directive 5 (ED128)*, issued October 2014. Available online: http://www.asb.co.za/GRAP/Directives/Directive-5-GRAP-Reporting-Framework (accessed: 5 February 2015)

Auditor General of South Africa (AGSA) (2014). Report on municipalities. MFMA 2012/2013 Consolidated Report. Available online: http://www.agsa.co.za/Documents/Auditreports/MFMA20122013.aspx (Retrieved: 12 February 2015)

Berger, T. M. (2012) *IPSAS Explained, A summary of International Public Sector Accounting Standards*. 2nd edition. Ernest & Young. Wiley. UK.

Bergmann, A. (2014) Accountability. Now. We Must Enhance Government Accountability and Transparency, *International Public Sector Accounting Standards Board*, October 21, 2014 (Retrieved 10 February 2015: http://www.ifac.org/global-knowledge-gateway/viewpoints/accountability-now-we-must-enhance-government-accountability-and)

Chan, J. L. (2006), IPSAS and government accounting reform in developing countries. *Accounting Reform in the Public Sector: Mimicry, Fad or Necessity.* Expert Comptable Media 1: 31-42.

Christiaens, J. Vanhee, C. Manes-Rossi, F. Aversano, N. and Van Cauwenberge, P (2014) The effects of IPSAS on reforming governmental financial reporting: an international comparison. *International Review of Administrative Sciences*. DOI: 10.1177/0020852314546580

Colyvas, A. (2014) Special Report: Public Sector Performance Management and Reporting. *Accountancy SA*, September 2014 issue.

Deloitte (2012). GRAP/IFRS – Comparing apples with apples. Deloitte & Touche. Available on-line: http://www2.deloitte.com/content/dam/Deloitte/za/Documents/audit/ZA_GRAPToIFRSComparison_17042014.pdf (accessed: 30 November 2014)

Ernest & Young (2013). *A snapshot of GAAP differences between IFRS and IPSAS.* April 2013 issue.

Ernest & Young (2014). *IPSAS Outlook, Conceptual Framework* special edition. November 2014 issue.

Hughes, O.E. (2003). Chapter 2: The Traditional Model of Public Administration. In Public Management and Administration: An Introduction. Third edition: 17-43. Basingstoke and New York: Palgrave Macmillan.

International Federation of Accountants (IFAC) (1996). Responding to an Increasing Demand for Accountability in the Public Sector. *IFAC Quarterly*. October 1996.

International Federation of Accountants (IFAC) (2014). About IFAC. Accessed online: http://www.ifac.org/about-ifac

International Public Sector Accounting Standards (IPSAS) (2014). Accessed online: http://www.ifac.org/public-sector

International Public Sector Accounting Standards Board (IPSAS Board) (2014) *Fact Sheet: International Public Sector Accounting Standards Board*, April 2014 issue.

Gloeck, D (2012) Editorial: Is the public sector getting a raw deal? *Auditing SA*, Summer 2011/2012 issue. Available online: http://www.saiga.co.za/home_htm_files/07%20-%20Dieter%20Gloeck%20-%20Developing%20skills%20in%20government%20auditing.pdf

National Treasury (2013). Modified Cash Standard. *Generally Recognised Accounting Practice for National and Provincial Departments* (effective for financial periods beginning 1 April 2013).

Nobes, C (2011). IFRS practices and the persistence of accounting system classification. Abacus 47:267-283.

Olken, B.A. and Pande R. (2011). Corruption in Deveoping Countries. Cambridge: National Bureau of Economic Research. Retrieved: 24 February 2015, from: http://nber.org/papers/w17398

PwC (2014). Government/Public Services. Available online: http://www.pwc.com/gx/en/government-public-services/ipsas/index.jhtml (accessed: 12 February 2015)

Ramabulana, T. (2015). In the public Eye: The three biggest losers of poor financial management in the Public Sector. *Grant Thornton, An instinct for growth*. February 2015 issue. Available online: http://www.gt.co.za/publications/public-eye/2015/02/in-the-public-eye-the-three-biggest-losers-of-poor-financial-management-in-the-public-sector/ (Retrieved: 20 February 2015)

Rossi, F.M., Aversano, N. and Cristiaens. J. (2012) Accounting and Reporting Systems in the Public Administrations in Europe vis-a-vis the IPSAS Conceptual Framework Issue: Traditional Systems. JEL Classification SSRN

South African Institute of Government Auditors (SAIGA), (2012). *The financial skills shortage in South Africa's public sector*. Position paper. Available online: http://www.saiga.co.za/home_htm_files/13%20-%20The%20RGA%20solution%20to%20the%20financial%20skills%20shortage.pdf

Stanford, J. (2014). The Conceptual Framework – from start to finish. *IPSAS Outlook, November 2014*. In interview with EY. Available online: http://www.ey.com/Publication/vwLUAssets/EY-ipsas-outlook-nov-2014/$FILE/EY-ipsas-outlook-nov-2014.pdf

Warren, K. (2014). Beyond Enhanced Reporting—The Next Step in Public Sector Financial Management Treasury of the Government of New Zealand, September 16, 2014. *International Federation of Accountants*. Available online: http://www.ifac.org/global-knowledge-gateway/viewpoints/beyond-enhanced-reporting-next-step-public-sector-financial-mana

World Economic Forum (2014). The Global Competitiveness Index, South Africa. *The Global Competitiveness Report 2014 – 2015.* Available online: http://www.weforum.org/reports/global-competitiveness-report-2014-2015 (Retrieved: 20 February 2015).

APPENDIX

The following table lists the Standards of IPSAS and, if applicable, the equivalent IFRS standard which are in issue:

Standards and Interpretations of IPSAS for which there is an IFRS equivalent

Standards of IPSAS	IFRS Standards
Framework for the Preparation and Presentation of Financial Statements	Framework for the Preparation and Presentation of Financial Statements
IPSAS 1 Presentation of Financial Statements	IAS 1 Presentation of Financial Statements
IPSAS 2 Cash Flow Statements	IAS 7 Statement of Cash Flows
IPSAS 3 Accounting Policies, Changes in Accounting Estimates and Errors	IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors
IPSAS 4 The Effects of Changes in Foreign Exchange Rates	IAS 21 The Effects of Changes in Foreign Exchange Rates
IPSAS 5 Borrowing Costs	IAS 23 Borrowing Costs
IPSAS 9 Revenue from Exchange Transactions	IAS 18 Revenue
IPSAS 10 Financial Reporting in Hyperinflationary Economies	IAS 29 Financial Reporting in Hyperinflationary Economies
IPSAS 11 Construction Contracts	IAS 11 Construction Contracts
IPSAS 12 Inventories	IAS 2 Inventories
IPSAS 13 Leases	IAS 17 Leases
IPSAS 14 Events After the Reporting Date	IAS 10 Events After the Reporting Period
IPSAS 16 Investment Property	IAS 40 Intangible Assets
IPSAS 17 Property, Plant and Equipment	IAS 16 Property, Plant and Equipment
IPSAS 18 Segment Reporting	IFRS 8 Operating Segments
IPSAS 19 Provisions, Contingent Liabilities and Contingent Assets	IAS 37 Provisions, Contingent Liabilities and Contingent Assets
IPSAS 20 Related Party Disclosures	IAS 24 Related Party Disclosures
IPSAS 25 Employee Benefits	IAS 19 Employee Benefits
IPSAS 26 Impairment of Cash-Generating Assets	IAS 36 Impairment of Assets
IPSAS 27 Agriculture	IAS 41 Agriculture
IPSAS 28 Financial Instruments: Presentation IPSAS 29, Financial Instruments: Recognition and Measurement IPSAS 30, Financial Instruments: Disclosures	IFRS 7 Financial Instruments: Disclosures IFRS 9 Financial Instruments IAS 32 Financial Instruments: Presentation IAS 39 Financial Instruments: Recognition and Measurement
IPSAS 31 Intangible Assets	IAS 38 Intangible Assets
Package of five IPSAS (effective 2017) IPSAS 34, Separate Financial Statements; IPSAS 35, Consolidated Financial	'Package of five' (effective 2017) IFRS 10, Consolidated Financial Statements,

Statements; IPSAS 36, Investments in Associates and Joint Ventures; IPSAS 37, Joint Arrangements; and IPSAS 38, Disclosure of Interests in Other Entities. These five standards will replace current requirements in: • IPSAS 6, Consolidated and Separate Financial Statements; • IPSAS 7, Investments in Associates; and • IPSAS 8, Interests in Joint Ventures.	IFRS 11, Joint Arrangements and IFRS 12, Disclosures of Interests in Other Entities IAS27 Separate Financial Statements IAS28 Interests in Associates and Joint Ventures
IPSAS 33, First-time Adoption of Accrual Basis IPSASs	IFRS 1 First-time Adoption of International Financial Reporting Standards

(IPSASB, 2014; E&Y, 2014; Deloitte, 2014)

Standards of IPSAS for which there is no IFRS Equivalent

There is no equivalent IFRS for these Standards and so significant principle differences exist between IPSAS and IFRS.

- IPSAS 21 Impairment of Non-cash Generating Assets
- IPSAS 22 Disclosure of Information about the General Government Sector
- IPSAS 23 Revenue from Non-Exchange Transactions
- IPSAS 24 Presentation of Budget Information in Financial Statements
- IPSAS 32 Service Concession Arrangements: Grantor

(IPSASB, 2014; E&Y, 2014; Deloitte, 2014)

IFRS Standards for which there is no IPSAS Equivalent

No Standard of IPSAS has been issued for these topics. Some of these Standards form part of the IPSAS, for example IAS12

- IFRS 2 Share Based Payment
- IFRS 4 Insurance Contracts
- IFRS 6 Exploration for and Evaluation of Mineral Resources
- IAS 12 Income Taxes
- IAS 26 Accounting and Reporting by Retirement Benefit Plans
- IAS 33 Earnings per Share
- IAS 34 Interim Financial Reporting

(IPSASB, 2014; E&Y, 2014; Deloitte, 2014)

Recommended Practice Guidelines

The IPSASB has introduced Recommended Practice Guidelines (RPGs) in 2013. RPGs are pronouncements that provide guidance on good practice in preparing general purpose financial reports that are not financial statements. The following RPGs have been issued since 2013:

- RPG 1 Reporting on the Long-term Sustainability of an Entity's Finances
- RPG 2 Financial Statement Discussion and Analysis

(IPSASB, 2014)

Standards of Generally Recognised Accounting Practice (GRAP), published by the Accounting Standards Board (ASB) for which there are currently no IPSAS equivalent, but for which there is an IFRS equivalent

- GRAP 100 Discontinued Operations
- GRAP 103 Heritage Assets
- GRAP 104 Financial Instruments (refer to new IPSAS 'package of five')
- GARP 105 Transfer of Functions Between Entities Under Common Control
- GRAP 106 Transfer of Functions Between Entities Not Under Common Control
- GRAP 107 Mergers

(ASB, 2014)

ACC003 The Information Content of Cross-Listed Firms' Financial Information during the Convergence Period

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Abstract

This study examines the information content of earnings announcement over time. With the expectation that the use of IFRSs for the preparation of financial statements increases the information content of earnings over time, this study examines the market reactions around the release of earnings information during 2003–2011. This study finds some evidence to support that the use of IFRSs for the preparation of financial statements leads to the increasing information content of earnings information. This result indicates that the increasing use of IFRSs over time is priced by the market. The usefulness of IFRSs financial information has increased. The results inform the SEC's deliberations on the requirement for companies preparing financial reports using IFRSs.

Keywords: Usefulness earnings information, convergence accounting standards, IFRSs, market reaction.

1. Introduction

This study investigates whether the market reaction around the earnings announcement after the adoption of IFRSs is greater than before the adoption of IFRSs. It is motivated by the globalisation of accounting standards, culminating in the IFRSs adoption around the globe. Empirical studies have examined the capital market effect of earnings announcement in home country across countries (e.g., Landsman, Maydew, and Thornock, 2012). While this study documents that market reaction around earnings announcement in home countries vary across countries depending on IFRSs adoption, they do not examine whether such factor also affect to the market reaction to earnings announcement in the context of U.S. market where firms across country dual listed on the U.S. market.

This study expects that the market reaction around earnings announcement is greater for firms from countries that have adopted IFRSs than those from non-IFRSs countries, given that the market reaction to earnings announcement in home countries of non-IFRSs adopters are weaker than those in home countries of IFRSs adopters (e.g., Landsman et al., 2012). To investigate whether the market reaction around earnings announcement is greater for firms from countries that have adopted IFRSs than those from non-IFRSs countries, this study calculates and compares the cross-sectional average of abnormal returns between IFRSs and non-IFRSs adopters.

This study contributes to the academic literature by adding empirical evidence of a link between IFRSs adoption and market reactions to financial accounting information in the context of U.S. cross-listed firms.[8] Because this study's sample involves cross-listed firms in the U.S. market that employ IFRSs and non-IFRSs, this study also contributes in providing empirical evidence of the association between IFRSs and non-IFRSs accounting standards and the information content of earnings announcement. Evidence from this study will be helpful in accounting standards setting, corporate financial disclosure decisions, and capital market investment decisions.

The remainder of this study is organized as follows. Section 2 describes the institutional setting. Section 3 presents the theoretical background and hypothesis development. Section 4 demonstrates how the data, sample, and research methodology will be used to investigate the hypothesis. The following section, section 5, presents this study's empirical results. The final section, section 5, present summary, limitation, and suggestions for future research

2. Institutional setting

The globalization of accounting standards is a recent phenomenon.[9] One important development behind the expanded use of IFRSs took place in 2005, when the European Union (EU) required EU-listed firms to prepare their consolidated financial statements based on IFRSs as endorsed by the European Commission for financial reporting after 2005 (Ernst & Young, 2008). As of 5 August 2008, 85 countries were required to use IFRSs, including 30 EU member countries (Deloitte, 2008a), and about 7,000 listed companies in Europe switched to IFRSs (IASB, 2008a). Another 24 countries permitted the use of IFRSs as alternative standards from national/domestic GAAP. In July 2002, the Australian Financial Reporting Council formalised its support for IFRSs adoption by 1 January 2005.[1] In 2002, Hong Kong and New Zealand also announced their adoption of IFRSs (IASB, 2008a). In addition, since 2006, China has adopted accounting standards that are substantially in line with IFRSs (IASB, 2008a). Some countries, such as Brazil, Canada, Chile, India, Japan, Korea, and Indonesia, have committed and established schedules to adopt or converge toward IFRSs.

Table 1 presents one hundred and forty eight cross-listed firms on the U.S. market classified by the accounting standards used to prepare financial statements. The accounting standards are classified into domestic GAAP, IFRSs as issued by the IASB (including financial statements that are prepared under International Accounting Standards, the predecessor term for IFRSs), and other versions of IFRSs such as IFRSs as adopted by the European Union, Mexican Financial Reporting Standards (FRSs), New

[8] The studies of DeFond et al. (2007) and Landsman et al. (2012) use the sample and data of home countries capital market. In contrast, this study contributes to the literature by examining information content of earnings announcements of cross-listed firms in the U.S. market. The bonding hypothesis suggests that U.S. cross-listings must comply with U.S. securities laws and thus their market value increase (e.g., Doidge, Karolyi, and Stulz, 2004; Hail and Leuz, 2009; Reese and Weisbach, 2002).

[9] The International Accounting Standards Committee (IASC) was established in 1973 to formulate and issue International Accounting Standards to improve financial reporting and for global acceptance (Ernst & Young, 2008). In 1993, the IASC and the International Organization of Securities Commissions (IOSCO) agreed on a minimum body of accounting standards for the financial statements of cross-border offerings and listings firms. The IASC organization structure changed and become the IASB in 1999. IASC's work on the core accounting standards was completed in December 1998, and in March 2000 IOSCO recommended multinational firms use IFRSs for their financial reporting.

Zealand FRSs, and Hong Kong FRSs. There is a steady increase in the number of cross-listed firms using IFRSs (IFRSs as issued by the IASB and other versions of IFRSs) during 2002–2004, followed by a considerable increase during 2005–2007. More than half of this study's sample comprises firms that still used domestic GAAP up to 2007. Their domestic GAAP may have partially converged with IFRSs.[10]

Table 1 Accounting standards employed by the sample of cross-listed firms

Year	2002		2003		2004		2005		2006		2007	
Firm Numbers	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Domestic GAAP	136	91.89	135	91.22	130	87.84	101	68.24	91	61.49	86	58.11
IFRS:	12	8.11	13	8.78	18	12.16	47	31.76	57	38.51	62	41.89
- IFRSs as issued by the IASB	4	2.70	4	6.08	5	3.38	17	11.49	20	13.51	21	14.19
- Other versions of IFRSs[a]	8	5.41	9	2.70	13	8.78	30	20.27	37	25.00	41	27.70
Total firms	148	100	148	100	148	100	148	100	148	100	148	100

[a]For example, IFRSs as adopted by the European Union, Mexican FRSs, New Zealand FRSs, and Hong Kong FRSs.

The SEC pledged to support the development of IFRSs as issued by the IASB as global accounting standards. For example, on 2 July 2007, the SEC formalised their commitment by delivering a proposal to accept cross-listed firm's financial statements prepared under IFRSs without the need to reconcile to U.S. GAAP.[11] The SEC (2007) notes that the increasing use of IFRSs will lead to the greater consistency and better application of IFRSs in practice. The more IFRSs-compliant financial statements are used in the U.S. capital markets, the more familiar U.S. investors will become with such statements. This promotes and encourages the ongoing convergence process because standards setters can receive more feedback from the application of IFRSs. A further implication is that, in the future, IFRSs-compliant financial statements could be used by U.S. domestic companies as an alternative to U.S. GAAP. A significant step has been made by the SEC in the adoption of IFRSs in the U.S. On 27 August 2008, the SEC proposed a roadmap and specific rule changes that would permit the use of IFRSs for certain U.S. issuers. On 21 November 2008, the SEC (2008d) issued a roadmap for the

[10] For example, Chinese Accounting Standards have somewhat converged with IFRSs since 2006, even though China's standard setters have not officially adopted IFRSs.

[11] The final rule was released on 21 December 2007 in the SEC Final Rule Release No. 33-8879. The effective date of this rule was 4 March 2008, applicable to financial statements for financial years ending after 15 November 2007 (SEC, 2007). See SEC (2007), pages 37,963–37,963, for a detailed history of the reconciliation to U.S. GAAP.

potential use of financial statements prepared in accordance with IFRSs by U.S. domestic firms. This roadmap presents a timetable for the adoption of IFRSs (Hail, Leuz, and Wysocki, 2010a, 2010b; Sogoloff, Rowena, and Stephanie, 2008), despite the mandatory use of IFRSs for U.S. domestic remains a controversy.

3. Theoretical background and hypothesis development

The purpose of this study is to examine whether globalisation of accounting standards are valued by investors in United States (U.S.) capital markets. The theoretical background for the information content of earnings is derived from positive accounting literature. In particular, studies on the association between capital market (equity value) and accounting information follow early seminal studies of either association (value relevance) (Barth, 1994) or information content (Ball and Brown, 1968; Beaver, 1968; Fama et al., 1969). Ball and Brown (1968) and Beaver (1968) suggest that the usefulness of information contained in financial reports can be assessed by analyzing the changes in securities prices around earnings announcements. In an efficient market, security prices adjust quickly and correctly to fully reflect new information (Brown and Warner, 1980; Fama, 1965; Fama et al., 1969; Lev, 1989). As a consequence, the release of new information is reflected in changes in the variability of security prices or trading volume[12] over a short time period around the event (Fama et al., 1969; Kothari, 2001). Variability of security prices or volume reactions to new information in the set of financial reporting data is evidence that the information is useful for investors (Ball and Brown, 1968; Beaver, 1968; Kothari, 2001; Lev, 1989).

Prior studies suggest that earnings, as a measure of firm performance, are the premier information item provided in financial statements (Collins, Maydew, and Weiss, 1997; Francis, Schipper, and Vincent, 2002a; Lev, 1989). The release of earnings information conveys useful information and contributes to the determination of stock prices (Ball and Brown, 1968; Beaver, 1968; DeFond et al., 2007; Francis et al., 2002a; Francis, Schipper, and Vincent, 2002b). Both change and levels of earnings convey useful information and therefore affect stock prices (DeFond et al., 2007; Francis et al., 2002a, 2002b; Landsman and Maydew, 2002; Lev, 1989; Lev and Zarowin, 1999).

The level of earnings is the amount of earnings reported in a given year. The change in earnings is the difference between earnings in a given year and the prior year's earnings, proxying for a surprise element in firm's value and performance (Lev and Zarowin, 1999). The information content literature suggests that more informative accounting information is reflected in greater abnormal returns (Ball and Brown, 1968; Beaver, Lambert, and Morse, 1980). The underlying argument is that greater earnings differences supply a greater surprise effect and therefore lead to greater market reactions (Hora, Tondkar, and McEwen, 2003, 2004; Lev and Zarowin, 1999).

A larger market reaction around earnings announcements has also been interpreted as greater earnings usefulness (Francis et al., 2002a; Lev, 1989). Lev (1989) notes that if the usefulness of earnings information is significant to investors, then earnings should

[12] Both abnormal returns and abnormal trading volume are commonly used to assess the information content of financial information (Beaver, 1968; Cready and Hurtt, 2002; Kothari, 2001; Lev, 1989).

exhibit considerable explanatory power with respect to price revisions around earnings announcements. Conversely, if stock price revisions are found to be unrelated to earnings, then the usefulness of earnings information to investors cannot be great.

Prior to the convergence of accounting standards, research classified cross-country accounting standards differences based on differences in legal systems (e.g., Ball, Kothari, and Robin, 2000; Ball, Robin, and Wu, 2003; La Porta et al., 1998). For example, Australia, Canada, and the U.K. are classified as common law countries (Ball et al., 2000; Hung, 2001). Given that the U.S. is also classified as a common law country, one can argue that these countries have greater similarity with U.S. GAAP than code law countries such as France, Germany, Finland, Argentina, and Italy (Durand and Tarca, 2005).[13] Prior studies also (Hora et al., 2003, 2004), where micro-uniform countries have accounting systems more aligned to the U.S. accounting system than macro-uniform countries (Hora et al., 2003, 2004). The list of micro-uniform countries is similar to that of common law countries[14] and includes Australia, Hong Kong, Ireland, and the U.K. Given the increased convergence of accounting standards since 2002, research began to classify cross-country accounting into IFRSs and non-IFRSs preparers (e.g., Barth, Landsman, and Lang, 2008; Henry, Lin, and Ya-Wen, 2009; Plumlee and Plumlee, 2008).[15]

The different time schedules of IFRSs adoption across groups (firms or countries) and time can lead to different inferences on how the market reacts to financial information. Some common law countries, such us the U.K. and Australia, adopted IFRSs earlier than other common law countries, such as Canada. Some code law countries, such as France and Germany, also adopted IFRSs earlier than other code law countries, such as Korea, Argentina, and Brazil.

The issue of differences in accounting standards across groups (firms or countries) and time leads this study to examine the market reaction around the release of cross-listed earnings on the U.S. market. A number of studies find that the quality of financial reporting under IFRSs is likely to result in higher accounting quality compared to firms applying non-U.S. domestic standards (non-IFRSs) (Barth, 2008; Barth et al., 2008; Barth et al., 2006; Soderstrom and Sun, 2007).[16] A higher quality of IFRSs financial statements leads to lower investor uncertainty and unreliability about a firm's future cash flows (Dechow, 1994; Francis et al., 2005; Francis, Nanda, and Olsson, 2008), and thus higher

[13] Compared to common law countries, the demand for accounting income under code law is influenced more by government preferences and less by demand for public disclosure. In code law countries, governments establish and enforce national accounting standards. In comparison, the properties of accounting standards in common law countries are determined primarily in the disclosure market (Ball et al., 2000).

[14] Doupnik and Salter (1993) and Hora et al. (2003, 2004) classify cross-country differences in accounting systems as macro- and micro-uniform, where micro-uniform countries are considered to have accounting systems more similar to the U.S. accounting system than macro-uniform countries. The list of macro-uniform countries is similar to that of code law countries and includes France, Germany, Finland, Argentina, and Italy.

[15] Several studies find that the accounting standards of firms from countries that adopt IFRSs are likely to be more similar to U.S. GAAP, as indicated by lower numbers of reconciliation items (Henry et al., 2009; Plumlee and Plumlee, 2008).

[16] Firms adopting IFRSs have less earnings management, timelier loss recognition, and greater value relevance of earnings (Barth et al., 2008).

market reactions around the release of earnings information are expected (Clinch and Lombardi, 2011; Easley and O'Hara, 2004). If firms with national accounting standards have lower market reaction than firms with IFRSs as issued by the IASB or other versions of IFRSs in home country markets, it is expected that cross-country variations in the use of domestic GAAP, IFRSs as issued by the IASB, and other versions of IFRSs are reflected in the market reactions around the release of earnings information in the U.S. market. The variations are expected to follow home countries variation because earnings released in the U.S. market is the bottom line of home country's financial statements. Therefore, this study expects that the market reaction around the release of earnings information is lower for firms with national accounting standards than firms with IFRSs as issued by the IASB or other versions of IFRSs. Thus, the hypothesis investigated is as follows.

Ha: Market reactions around earnings announcement are greater for firms with IFRSs as issued by the IASB or other versions of IFRSs than for those with national/ domestic accounting standards

4. Sample, data, and research methodology

4.1 Sample selection

The period 2003–2011 is appropriate for this study. The year 2003 is the beginning of the convergence of IFRSs and U.S. GAAP.[17] The period of analysis finishes in 2011 because of the data availability. The sample for this study comprises cross-listed firms listed on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), or National Association of Securities Dealers and Quotation (NASDAQ) during 2003–2011. The sample for investigating H_1 is selected based on the following criteria:

1) Firms are listed on the NYSE, AMEX, or NASDAQ and issue level II and III American depository receipts (ADRs);
2) Firms' earnings release are available to determine the event date;
3) Firms are listed on the NYSE, AMEX, or NASDAQ during 2003–2011;
4) The release of earnings information (the event date) by firms is not potentially confounded by other information or events; and
5) Security price data are available to determine market reactions around the release of earnings information.

The following databases are used for the source data in this study. The SEC IDEA (EDGAR) database is used to obtain: 1) a list of cross-listed firms from 2003 to 2011;[18] 2) firm fiscal year-end; and 3) CIK numbers. This study also uses the Osiris database as a complementary source of information. The CIK number is used to collect the CUSIP[19] numbers and the securities identifier (PERMNO) from The Center for Research in

[17] A memorandum of understanding between the Financial Accounting Standards Boards (FASB) and the International Accounting Standards Board (IASB) for converging accounting standards was signed in October 2002 in the Norwalk Agreement (IASB, 2008a).

[18] A list of cross-listed firms is available at http://www.sec.gov/divisions/corpfin/internatl/companies.shtml.

[19] While the company name and CUSIP can change, the GVKEY can be used to track a company over time.

Security Prices (CRSP) and the Compustat database from Wharton Research Data Services (WRDS).[20] The five digits PERMNO and event dates are used to download return from the CRSP−Daily Extract with Time Window. The risk−free interest rate (RF, the−one month treasury bill rate) are obtained from the CRSP's from the WRDS. The market index and annual report dates are collected from the Bloomberg database.[21]

4.1 Market Reactions to the Release of Earnings Information

The market reaction to earnings information is investigated by using event study methodology. It is common for an event study to extend the window over more than one day. The argument supporting an extended length of time is related to the uncertainty in identifying exactly when the information becomes available to market participants.[22] It is unclear whether cross-listed firms file their annual reports electronically or via mail, and therefore there is uncertainty as to which day the information become publicly available. It is also not generally known whether market participants had the information during trading hours on the day the information was released (Peterson, 1989). Thus, the days around the event date are used to capture the market reactions to the release of earnings information. To address this issue, this study uses an event window from two days before the event (t - 2) to two days after the event (t + 2). Three-, five-, and seven-day cumulative abnormal returns ($CAR_{N=3,5,7}$) are calculated during this event window.[23]

The three-day cumulative abnormal returns (CAR_{N3}) are obtained by adding the abnormal returns from one day before to those one day after the release of earnings information (e.g., Foster, 1986). The five-day cumulative abnormal returns (CAR_{N5}) are obtained by adding abnormal returns from two days before to those two days after the release of earnings information. These cumulative abnormal returns are expressed as (Equation 1):

$$CAR_{N3,5,7} = \sum_{t=1}^{3,5,7} AR_{N_t} \tag{1}$$

where

$CAR_{N3,5,7}$ = cumulative abnormal returns for N securities for three- and five-day periods;

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[20] Rather than using Eventus Software, this study directly calculates the abnormal returns manually from the downloaded market index and return data from the CRSP database using CRSP−Daily Extract with Time Window. Abnormal returns are manually calculated because the market indices used in this study (e.g., S&P and BNYM ADRs Index) are not available in the CRSP database.

[21] The other two market indexes (the equally−weighted market index and the value−weighted market index) are obtained from CRSP-Daily Extract with Time Window.

[22] Cross-listed firms are required to file the annual report in electronic format via SEC's EDGAR. Filing in paper is also permitted by sending or delivering the document to the SEC File Desk between 9 a.m. and 5.30 p.m., Eastern Standard Time. When the document is received and stamped by the SEC, the stamp date may not represent the event date because the document may not be put in the Public Reading Room or become available online until the next day.

[23] Three and five days event periods are commonly used in U.S. stock price studies of foreign companies (Johnson, 1995). Rees (1995) states that five days event window is short enough to reduce the potential for confounding events but wide enough to capture the effects of the reconciliation on prices. The use of a shorter window, three days event window, is aimed at minimizing other factors that may have caused a market reaction (e.g., Kothari and Warner, 2004), allowing greater certainty that any abnormal returns are attributable to the release of reconciliation information.

N = number of securities; and
AR_{Nt} = average daily abnormal returns for N securities for period t.

A firm's abnormal return (AR_{it}) is the difference between the firm's actual return (R_{it}) and its expected return ($E(R_{it})$)[24] during the event window. To calculate actual returns, this study uses simple returns, which are defined as the difference between the security price for security i for period t (P_{it}) relative to the security price for security i for period t - 1 (P_{it-1}).

Comparing various models for estimating parameters for the calculation of expected returns, Armitage (1995) recommends that both the market model and CAPM be used in event study tests because these two most widely used models often produce different results.[25] In view of this, this study uses the Black (1972) one-factor CAPM and market model for sensitivity analysis (e.g., Armitage, 1995; Bowman, 1983). The CAPM has been used by prior studies employing cross-sectional analyses (e.g., Jain and Rezaee, 2006).

Prior studies also suggest that methodology based on the market model captures abnormal returns well under various conditions, such as small sample size, non-normality, and non-synchronous trading, when using either monthly and daily security returns (Brown and Warner, 1980, 1985). Brown and Warner (1985) note that methodologies based on the OLS market model and using standard parametric tests work better under a variety of conditions. Additionally, compared to the mean-adjusted model, the market model is more widely used in empirical event studies in accounting and finance (Jain, 1982; Leftwich, 1981; MacKinlay, 1997) and always superior in specification and power for estimating abnormal returns (Armitage, 1995; Binder, 1998; Lee and Varela, 1997). Thus, the market model is also used to calculate the expected returns in this study. The equation to calculate abnormal returns, with expected returns calculated using both the CAPM and the market model, is presented below.

With the expected returns, $E(R_{it})$, determined using the CAPM, the abnormal return for an individual security, AR_{it} , is calculated using Equation 2:

$$AR_{it} = R_{it} - \{R_f + \hat{\beta}_i(R_{mt} - R_f)\} \qquad (2)$$

where

AR_{it} = abnormal return on security i for period t;
R_{it} = actual return on security i for period t;
t = period during the event window;
$\hat{\beta}_i$ = the estimated beta for security i, that is, the slope of the regression line relating R_{it} and R_{mt} (Black, 1972; Strong, 1992) using daily share price data for a 200-day period (100 days before and 100 days after the event);
R_f = the 30-day risk-free rate of return from U.S. Treasury bills (T-bills); and

[24] Some studies refer to the expected return as the normal return or the estimated return.
[25] It is argued that the different results are caused by the use of the CAPM, which is a theoretical model and developed based on a set of assumptions. The other models, such as the market, index, average return, and Fama–MacBeth models, usually provide similar results (e.g., Armitage, 1995; Bowman, 1983).

R_{mt} = the return on the market index for period t.

Using the market model to determine the expected return, $E(R_{it})$, the abnormal return for an individual security, AR_{it}, is calculated using Equation 3:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \qquad (3)$$

where

AR_{it} = abnormal return on security i for period t;
R_{it} = actual return on security i for period t;
t = period during the event window;
$\hat{\alpha}_i$ = estimated intercept for security i;
$\hat{\beta}_i$ = estimated beta for security i, that is, the slope of the regression line relating R_{it} and R_{mt} using daily share price data for a 200-day period (100 days before and 100 days after the event); and
R_{mt} = return on market index for period t.

The estimates of $\hat{\alpha}_i$ and $\hat{\beta}_i$ are determined using daily share price data for a 200-day period (100 days before and 100 days after the event).

To examine the hypothesis, whether abnormal returns around the release of earnings of IFRSs adopters are higher than national / domestic adopters, a comparison over time of average CAR is performed. Significantly higher of CAR in the earlier year or period (before the adoption of IFRSs) relative to the later one indicate the increasing information content of earnings information. Before this comparison can be made, the cross-sectional average CAR around the release of earnings information must be calculated (Binder, 1998; Campbell, Lo, and MacKinlay, 1997; Kothari and Warner, 2004; MacKinlay, 1997).[26] Following the event study literature (e.g., Kothari and Warner, 2004), the average daily abnormal returns for a sample of N securities of cross-listed firms is calculated by using cross-sectional mean cumulative abnormal returns.

Since it may take time for firms to transition to IFRSs, the information content of earnings information may not increase immediately. Therefore, year-by-year comparisons of abnormal returns may not capture the effect of accounting standards implemented by firms on the information content of earnings information. Thus, to test H_1, this study compares both the cumulative abnormal returns for longer period, that is, 2003–2005, 2006–2008, and 2009–2011. To support the hypothesis, a significant increase in average cumulative abnormal returns from 2003 to 2011 is necessary.

In dealing with bad (good) news, this study's interest is only the surprise effect of information release and not the sign of the surprise effect from the release of earnings

[26] If average daily and cumulative abnormal returns exist around the event, this suggests that earnings information is useful for investors (Binder, 1998; Campbell et al., 1997; Kothari and Warner, 2004; MacKinlay, 1997).

information. Therefore, this study uses the absolute value of abnormal returns to examine the significance of market reactions.[27]

Table 2 summarises all the variables employed in this study and their measurements.

Table 2 Summary of variables and their measurements

Variable	Measurement
Panel A: To Test Hypothesis 1	
Firm-Level Measure of Abnormal Returns	
Abnormal return for individual security (AR_{it})	A firm's abnormal return (AR_{it}) is the difference between the firm's actual return (R_{it}) and its expected return ($E(R_{it})$) during the event window.
Firm-Level Measure of Cumulative Abnormal Returns	
Cumulative abnormal returns for individual security, three-day and five-day event window ($CAR_{i\,3,5}$)	An arithmetic additive of abnormal returns from one day before to one day after (three-day event window) and two days before to two days after (five-day event window) the release of earnings information. Here $CAR_{i3,5} = \sum_{t=1}^{3,5} AR_{it}$ where AR_{it} = difference between the actual returns (R_{it}) and the expected returns $E(R_{it})$; R_{it} = difference between the security price for security i for period t (P_{it}) relative to the security price for security i for period t - 1(P_{it-1}); $E(R_{it})$ = expected return determined using CAPM and market model with the parameter estimates calculated using daily data for 200 days; and R_{mt} = S&P ADRs Index, developed based on all U.S. stocks from firms listed on the NYSE, AMEX, or NASDAQ, offering either a level II or level III ADRs program (S&P, 2007).

5. Empirical results

Descriptive statistics for variables used in testing the first hypothesis, CARs, are summarised in Table 3. An unbalanced sample is employed to test the first hypothesis, with 4.829 observations representing 828 firms and an eight-year sample period (2003–2011). The mean CAR_{mm3}, CAR_{mm5}, and CAR_{mm7} are 9.35%, 14.19%, and 18.74% respectively. The value range of CAR_{mm3}, CAR_{mm5}, and CAR_{mm7} is 0.10 –138.70%, 0.47% – 166.18, and 0.95 – 229.33%. The figures of mean, standard deviation, minimum, and maximum are similar when CAPM is employed to calculate the cumulative abnormal returns.

[27] The use of absolute values removes directionality from the return measures and permits the aggregation of returns with negative and positive abnormal returns (e.g., Meek, 1991; Olibe, 2001).

Table 3 Descriptive statistics: abnormal returns around the release of U.S. GAAP quarterly earnings information during 2003−2011

Variable	$CARmm_3$	$CARcapm_3$	$CARmm_5$	$CARcapm_5$	$CARmm_7$	$CARcapm_7$
N	4,829	4,829	4,829	4,829	4,829	4,829
Mean	9.35%	9.32%	14.19%	14.14%	18.74%	18.68%
Standard Deviation	9.00%	9.01%	12.71%	12.70%	15.88%	15.85%
Minimum	0.10%	0.00%	0.47%	0.27%	0.95%	0.65%
Maximum	138.70%	139.15%	166.18%	166.64%	229.33 %	229.31%

Variable descriptions: $CARmm_3$= three-day firm-level cumulative abnormal returns calculated using market model; $CARmm_3$= three-day firm-level cumulative abnormal returns calculated using CAPM; $CARmm_5$= five-day firm-level cumulative abnormal returns calculated using market model; CAR $camp_5$= five-day firm-level cumulative abnormal returns calculated using CAPM; $CARmm_7$= seven-day firm-level cumulative abnormal returns calculated using market model; $CARcamp_7$= seven-day firm-level cumulative abnormal returns calculated using CAPM;

The results of recording and analysing the information content of earnings information over time 2003–2011 appear in Tables 4. Table 4, Panel A reports the comparison of the three, five, and seven day cumulative abnormal returns (column 3−6) between the two periods. The cumulative abnormal returns of 582 firms in four−years (2,330 observations) for each period are used for this comparison. The statistical significance of the difference between the periods' cumulative abnormal returns obtained using *t*−test. The average cumulative abnormal returns of each period are presented.[28] The CAR_{mm3}, CAR_{mm5}, and CAR_{mm7} for the period 2003−2006 are 7.98%, 11.97%, and 15.63% respectively. These CARs for 2003−2006 are statistically higher than for 2007−2011 (CAR_{mm3} = 10.63%, CAR_{mm5} = 16.25%, and CAR_{mm7} = 21.52%) at the 1% level of significance. These values of market model CARs are similar to those of CAPM Cars. The results indicate that overall abnormal returns in 2003−2006 are lower than in 2007−2011. This overtime increase in the cumulative abnormal returns supports this study first hypothesis. The result indicates that the increasing use of IFRSs for the preparation of financial statements over time is priced by the market.

While the results of this study mainly rely on comparing 2003−2006 with 2007−2011 (two period comparisons), the three periods[29] and yearly basis comparisons are also presented. When three periods (2003−2005, 2006−2008, and 2009−2011) are compared, the highest value of the cumulative abnormal returns appears in the second period with statistically significant results are found for both comparisons with earlier and later period. The results are presented in Table 4, Panel B. It shows that the cumulative

[28] The average cumulative abnormal return is the mean of cross−sectional firms' cumulative abnormal returns of 2,330 observations (582 firms in four−years).

[29] It compares the average daily and cumulative abnormal returns for 2003−2005 with 2006−2008 and 2009−2011.

abnormal returns are consistently higher in 2006−2008 (CAR_{mm3} = 11.53%, CAR_{mm5} = 17.54%, and CAR_{mm7} = 23.47%) compared to those in 2003−2005 (CAR_{mm3} = 8.11%, CAR_{mm5} = 12.25%, and CAR_{mm7} = 16.05%) and 2009−2011 (CAR_{mm3} = 8.24%, CAR_{mm5} = 12.53%, and CAR_{mm7} = 16.33%). The differences in these CARs are statistically significant at the 1% level. The results are qualitatively similar when CAPM is employed for the calculation of expected return.

Table 4 Comparison of market reactions around the release of earnings information during 2003−2007: three-period analysis

Period	**N**	**CAR_{mm3}**	**CAR_{capm3}**	**CAR_{mm5}**	**CAR_{capm5}**	**CAR_{mm7}**	**CAR_{capm7}**
Panel A: Two period comparison							
2003−2006	2,330	7.98%	7.95%	11.97%	11.92%	15.70%	15.63%
2007−2011	2,500	10.63%	10.60%	16.25%	16.21%	21.58%	21.52%
(*t*−test)		-10.34***	-10.33***	-11.86***	-11.90***	-13.08***	-13.13***
Panel B: Three period comparison							
2003−2005	1,726	8.11%	8.08%	12.25%	12.19%	16.05%	15.98%
2006−2008	1,696	11.53%	11.50%	17.54%	17.49%	23.47%	23.40%
(*t*−test)		-10.59***	-10.54***	-11.63***	-11.65***	-12.98***	-12.99***
2006−2008	1,696	11.53%	11.50%	17.54%	17.49%	23.47%	23.40%
2009−2011	1,407	8.24%	8.23%	12.53%	12.50%	16.33%	16.30%
(*t*−test)		9.74***	9.67***	10.47***	10.44***	11.78***	11.74***

Expected returns are calculated using market model and CAPM. The *t*−test is used to compare whether the mean abnormal returns for 2003−2005 are greater than for 2006−2008 or 2009−2011 and so on.
*** Significant at the 1% level, two-tail test.

Further analyses using yearly trend of cumulative abnormal returns around the release of earnings announcement during 2003−2011 are reported in Table 5.[30] The average cumulative abnormal returns presented are the yearly mean of cross−sectional firms' cumulative abnormal returns for the firms' sample. Figure 2 shows the trend of three, five, and seven−day cumulative abnormal returns during 2003−2011. Figures 1

[30] Since it may take time for firms to transition to IFRSs, the information content of earnings information may not increase immediately. Therefore, year-by-year comparisons of abnormal returns may not capture the effect of accounting standards implemented by firms on the information content of earnings information. Thus, yearly comparison test of significant is not conducted.

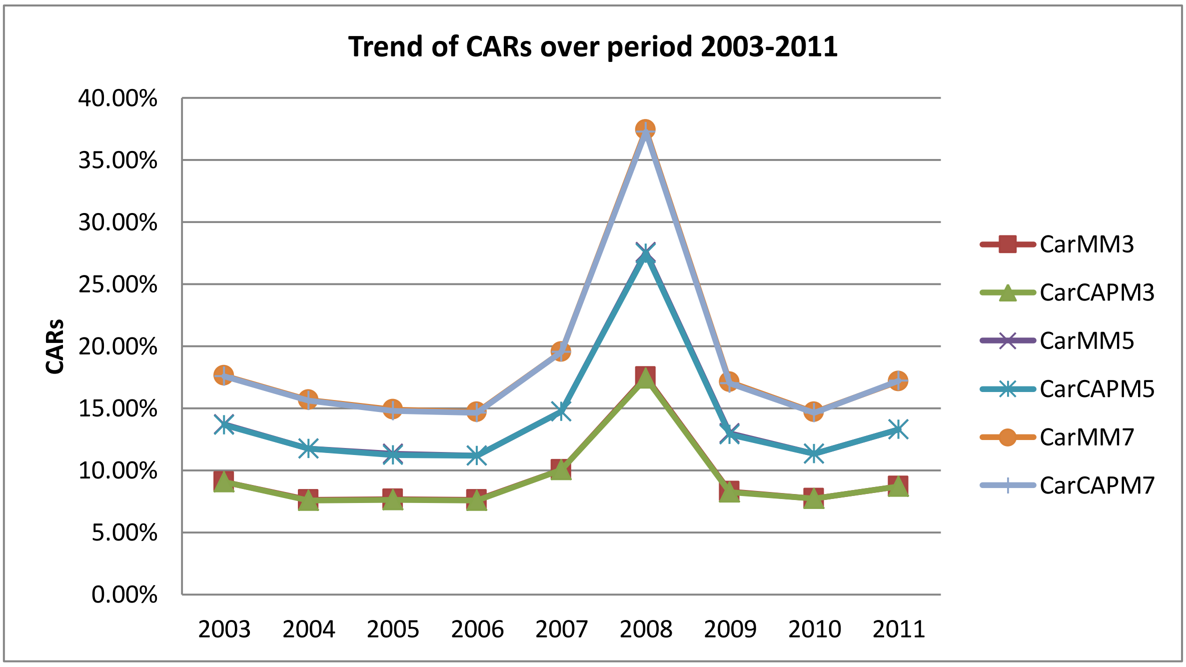
shows that CAR_s in 2008 are higher than in any other year. The trend of $CAR_{3,5,7}$ over 2003−2011 provides further empirical evidence that cumulative abnormal returns decreased from 2008 to 2010, with a small change over time from 2003 to 2007. A slight increase in CAR_s appears for CARs from 2006 to 2007 and 2010 to 2011. The results show that yearly trend in market reaction suggests that the impact of IFRSs on the usefulness of earnings information is not evident from one year to the next. Nonetheless, the results of the yearly comparisons of average abnormal returns are presented to inform the overall trend over time from the beginning year (2003) to the ending year (2011) of the analysis.

Table 5 Comparison of market reactions around the release of earnings information during 2003−2011: yearly analysis

Period	N	$CARmm_3$	$CARcapm_3$	$CARmm_5$	$CARcapm_5$	$CARmm_7$	$CARcapm_7$
2003	561	9.08%	9.06%	13.71%	13.64%	17.63%	17.57%
2004	577	7.61%	7.59%	11.77%	11.74%	15.69%	15.62%
2005	588	7.67%	7.64%	11.32%	11.24%	14.91%	14.81%
2006	604	7.60%	7.57%	11.19%	11.16%	14.68%	14.62%
2007	557	10.04%	10.03%	14.74%	14.72%	19.54%	19.54%
2008	536	17.51%	17.43%	27.60%	27.48%	37.46%	37.28%
2009	500	8.28%	8.25%	12.98%	12.91%	17.12%	17.01%
2010	462	7.75%	7.73%	11.33%	11.31%	14.69%	14.64%
2011	445	8.71%	8.72%	13.27%	13.28%	17.16%	17.20%

Expected returns are calculated using market model and CAPM. The *t*−test is used to compare whether the mean abnormal returns for 2003−2004 are greater than for 2004−2005 or 2006−2007 and so on.

Figure 1 Trend analysis of three-, five-, and seven-day cumulative abnormal returns (CARs) around the release of U.S. GAAP earnings announcement during 2003–2011



A plausible interpretation for these results is that the information content of earnings announcement is not solely affected by the use of IFRSs for the preparation of financial statements. U.S. investors may not be familiar with new IFRSs accounting standards adopted by firms in IFRSs-compliant financial statements. As reported in Table 2, the number of firms using IFRSs increased significantly, from 8% in 2003 to 34% in 2005. This significant increase in the number of foreign registrants applying IFRSs may have increased investor uncertainty because of U.S. investors' unfamiliarity with the new financial statements under IFRSs (e.g., Hopkins, 2008). The literature suggests that uncertainty can cause investors to hold securities. If U.S. investors are unfamiliar with accounting practices, then it is difficult for them to analyse financial statements (Barth, 2008; Barth, Clinch, and Shibano, 1999; Bradshaw, Bushee, and Miller, 2004; Covrig, DeFond, and Hung, 2007; Sunder, 2002). Consequently, investors unfamiliar with IFRSs-compliant financial statements face greater uncertainty and therefore may be reluctant to trade. Unfamiliar investors would implement price protection by setting a lower bid price if they wanted to buy securities or by setting a higher ask price if they wanted to sell securities, thereby widening the bid-ask spread (e.g., Kim and Verrecchia, 1994; Krinsky and Jason, 1996). Hence the securities of firms applying IFRSs accounting standards can have a lower stock price reaction around the release of earnings information.

As their familiarity with IFRSs increases (e.g., in 2006–2007), investors trade more based on the IFRSs financial information provided in the financial information. The literature suggests that greater conformity with accounting practices familiar to investors allows for better analyses of financial statements (Barth, 2008; Barth et al., 1999; Bradshaw et al., 2004; Covrig et al., 2007; Sunder, 2002). Additionally, the more IFRSs-compliant financial statements are used in U.S. capital markets, the more familiar U.S.

investors will become with such statements. Investors are more likely to use information with which they are familiar (Bradshaw et al., 2004; Covrig et al., 2007). In the context of this study, this increase in the familiarity of U.S. investors with IFRSs-compliant financial statements leads to lower uncertainty and encourages them to trade based on their analyses of financial information, therefore leading to higher stock prices reactions around the release of earnings information in 2006–2008.

The results can also be explained from the perspective of the quality of financial statements under IFRSs accounting standards. Prior studies suggest that the quality of financial information after adopting IFRSs accounting standards is higher than that before adopting IFRSs (Barth et al., 2008; Barth et al., 2006).[31] These prior studies support the argument that the higher quality of financial information may be the cause for the greater market reactions around the release of earnings information during 2006–2008 compared to 2003–2005. If the use of IFRSs accounting standards for financial report preparation leads to higher-quality financial reports in the later period than before adopting IFRSs, this higher quality of financial information is expected to translate to higher-quality earnings information, thereby increasing U.S. investors' reliance on the earnings information as a basis for trading decisions (Dechow, 1994; Francis et al., 2005; Francis et al., 2008). A high quality of earnings information reduces investor uncertainty, leading to greater market reactions (Francis et al., 2008), because investors demand higher returns to hold stocks with greater private information (e.g., Daske, 2006; Daske et al., 2008; Easley and O'Hara, 2004) . The more IFRSs-compliant financial statements are used in U.S. capital markets, the higher the average quality of the financial statements of foreign registrants, and hence the greater the average market reactions around the release of earnings information. The issues of investor protection and quality of financial information, and other attributes that potentially affect the usefulness of earnings information are examined in the future study.

To check the robustness of this study's findings, sensitivity analyses are performed. They include: 1) the use of quarterly data instead of annual data; 2) Abnormal returns calculated using an alternative market index, namely the CRSP value-weighted index; and 3) the use of Fama-French three factor model in addition to the CAPM and market model for the calculation of expected return. The results of sensitivity analyses are consistently well supporting this study's primary results.

[31] It is noted that the increasing quality of financial statements after the adoption IFRSs is driven by the higher quality of IFRSs accountings standards relative to domestic accounting standards.

6. Summary, Limitation, and Future Research

This study provides some evidence that the market reaction around the release of earnings increases slightly over time during 2003–2011. This result can be explained by certain studies that address the earnings quality (Barth, 2008; Barth et al., 2008; Barth et al., 2006; Soderstrom and Sun, 2007) and investors' familiarity with the financial statements under IFRSs (e.g., Hopkins, 2008). It is noted that earnings quality increases significantly during 2007-2009. Global economic crisis may explain this result. This factor and other variables that have been documented by prior studies to be associated with market reactions to the release of earnings information have not been addressed in this study. They include earnings change, book value of equity change, firm size, exchange rates, analyst following (e.g., Hora et al., 2004), the market-to-book ratio (e.g., Fama and French, 1993), credit risk, liquidity risk and business risk (e.g., Danckaert, Gaeremynck, and Huyghebaert, 2010). Using multivariate analyses, future research can examine them as control variables to avoid potentially omitted correlated variables and allow for simultaneous testing of the explanations hypothesized.

References

Armitage, S. (1995). Event study methods and evidence on their performance. *Journal of Economic Surveys, 9*(1), 25.

Ball, R., and Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research, 6*(2), 159-178.

Ball, R., Kothari, S. P., and Robin, A. (2000). The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics, 29*(1), 1-51.

Ball, R., Robin, A., and Wu, J. S. (2003). Incentives versus standards: properties of accounting income in four East Asian countries. *Journal of Accounting and Economics, 36*(1-3), 235-270.

Barth, M. E. (1994). Fair value accounting: evidence from investment securities and the market valuation of banks. *Accounting Review, 69*(1), I-25.

Barth, M. E. (2008). Global financial reporting: implications for U.S. academics. *Accounting Review, 83*, 1159-1179.

Barth, M. E., Clinch, G., and Shibano, T. (1999). International accounting harmonization and global equity markets. *Journal of Accounting and Economics, 26*(1-3), 201-235.

Barth, M. E., Landsman, W. R., and Lang, M. H. (2008). International accounting standards and accounting quality. *Journal of Accounting Research, 46*(3), 467-498.

Barth, M. E., Landsman, W. R., Lang, M. H., and Williams, C. D. (2006). Accounting quality: International Accounting Standards and U.S. GAAP.

Beaver, W., Lambert, R., and Morse, D. (1980). The information content of security prices. *Journal of Accounting and Economics, 2*(1), 3-28.

Beaver, W. H. (1968). The information content of annual earnings announcements. *Journal of Accounting Research, 6*(3), 67-92.

Binder, J. (1998). The event study methodology since 1969. *Review of Quantitative Finance and Accounting, 11*(2), 111-137.

Black, F. (1972). Capital market equilibrium with restricted borrowing. *Journal of Business, 45*(3), 444-455.

Bowman, R. G. (1983). Understanding and conducting event studies. *Journal of Business Finance & Accounting, 10*(4), 561-584.

Bradshaw, M. T., Bushee, B. J., and Miller, G. S. (2004). Accounting Choice, Home Bias, and U.S. Investment in Non-U.S. Firms. *Journal of Accounting Research, 42*(5), 795-841.

Brown, S. J., and Warner, J. B. (1980). Measuring security price performance. *Journal of Financial Economics, 8*(3), 205-258.

Brown, S. J., and Warner, J. B. (1985). Using daily stock returns: the case of event studies. *Journal of Financial Economics, 14*(1), 3-31.

Campbell, J. Y., Lo, A. W., and MacKinlay, A. C. (1997). *Event study analysis (Chapter 4, pp. 149-180.), in the econometrics of financial markets*. Princeton, N.J.: *Princeton University Press*.

Clinch, G., and Lombardi, B. (2011). Information and the cost of capital: the Easley-O'Hara (2004) model with endogenous information acquisition. *Australian Journal of Management (University of New South Wales), 36*(1), 5-14. doi: 10.1177/0312896211401692

Collins, D. W., Maydew, E. L., and Weiss, I. S. (1997). Changes in the value-relevance of earnings and book values over the past forty years. *Journal of Accounting and Economics, 24*(1), 39-67.

Covrig, V. M., DeFond, M. L., and Hung, M. (2007). Home bias, foreign mutual fund holdings, and the voluntary adoption of International Accounting Standards. *Journal of Accounting Research, 45*(1), 41-70.

Cready, W. M., and Hurtt, D. N. (2002). Assessing investor response to information events using return and volume metrics. *Accounting Review, 77*(4), 891-909.

Danckaert, I., Gaeremynck, A., and Huyghebaert, N. (2010). Can additional Form 20-F risk disclosure reduce information asymmetries? Evidence for firms cross-listed on NYSE. *LSM-KUL Finance Research Workshop Brussels, Belgium*.

Daske, H. (2006). Economic benefits of adopting IFRS or US-GAAP-Have the expected costs of equity capital really decreased? *Journal of Business Finance & Accounting, 33*(3/4), 329-373.

Daske, H., Hail, L., Leuz, C., and Verdi, R. (2008). Mandatory IFRS reporting around the world: early evidence on the economic consequences. *Journal of Accounting Research, 46*(5), 1085-1142. doi: 10.1111/j.1475-679X.2008.00306.x

Dechow, P. M. (1994). Accounting earnings and cash flows as measures of firm performance: the role of accounting accruals. *Journal of Accounting and Economics, 18*(1), 3-42.

DeFond, M., Hung, M., and Trezevant, R. (2007). Investor protection and the information content of annual earnings announcements: International evidence. *Journal of Accounting and Economics, 43*(1), 37-67.

Deloitte. (2008a). The use of IFRSs by jurisdiction. *Retrieved September, 11, 2008, from* <http://www.iasplus.com/country/useias.htm.
Doidge, C., Karolyi, G. A., and Stulz, R. M. (2004). Why are foreign firms listed in the U.S. worth more? *Journal of Financial Economics, 71*(2), 205-238.
Doupnik, T. S., and Salter, S. B. (1993). An empirical test of a judgmental international classification of financial reporting practices. *Journal of International Business Studies, 24*(1), 41-60.
Durand, R. B., and Tarca, A. N. N. (2005). The impact of U.S. GAAP reconciliation requirements on choice of foreign stock exchange for firms from common law and code law countries. *European Accounting Review, 14*(4), 789-813. doi: 10.1080/09638180500108536
Easley, D., and O'Hara, M. (2004). Information and the cost of capital. *Journal of Finance, 59*(4), 1553-1583.
Ernst&Young. (2008). U.S. GAAP vs IFRS - The basics. *Retrieved September 17, 2008, from* http://www.ey.com/Global/assets.nsf/US/.../$file/us_gaap_v_ *ifrs.pdf*.
Fama, E. F. (1965). The behavior of stock-market prices. *The Journal of Business, 38*(1), 34-105.
Fama, E. F., Fisher, L., Jensen, M. C., and Roll, R. (1969). The adjustment of stock prices to new information. *International Economic Review, 10*(1), 1.
Fama, E. F., and French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics, 33*(1), 3-56.
Foster, G. (1986). *Financial statement analysis* (Second ed.): Prentice-Hall International.
Francis, J., LaFond, R., Olsson, P., and Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting and Economics, 39*(2), 295-327.
Francis, J., Nanda, D., and Olsson, P. (2008). Voluntary disclosure, earnings quality, and cost of capital. *Journal of Accounting Research, 46*(1), 53-99.
Francis, J., Schipper, K., and Vincent, L. (2002a). Expanded disclosures and the increased usefulness of earnings announcements. *Accounting Review, 77*, 515-546.
Francis, J., Schipper, K., and Vincent, L. (2002b). Earnings announcements and competing information. *Journal of Accounting and Economics, 33*(3), 313-342.
Hail, L., and Leuz, C. (2009). Cost of capital effects and changes in growth expectations around U.S. cross-listings. *Journal of Financial Economics, 93*(3), 428-454.
Hail, L., Leuz, C., and Wysocki, P. (2010a). Global accounting convergence and the potential adoption of IFRS by the U.S. (part I): conceptual underpinnings and economic analysis. *Accounting Horizons, 24*(3), 355-394. doi: 10.2308/acch.2010.24.3.355
Hail, L., Leuz, C., and Wysocki, P. (2010b). Global accounting convergence and the potential adoption of IFRS by the U.S. (part II): political factors and future scenarios for U.S. accounting standards. *Accounting Horizons, 24*(4), 567-588. doi: 10.2308/acch.2010.24.3.355
Henry, E., Lin, S., and Ya-Wen, Y. (2009). The European-U.S. "GAAP gap": IFRS to U.S. GAAP Form 20-F reconciliations. *Accounting Horizons, 23*(2), 121-150.
Hopkins, P. E., Botosan, C.A., Bradshaw, M.T., Callahan, C.M., Ciesielski, J.T., Farber, D.B., Kohlbeck, M.J., Hodder, L.D., Laux, B., Stober, T.L., Stocken, P.C. and

Yohn, T.L. (2008). Response by the financial reporting policy committee of the financial accounting and reporting section of the American Accounting Association to the SEC release: acceptance from foreign private issuers of financial statements prepared in accordance with International Financial Reporting Standards without reconciliation to U.S. GAAP *Available at SSRN: http://ssrn.com/abstract=1083679*.

Hora, J. A., Tondkar, R. H., and McEwen, R. A. (2003). Effect of foreign GAAP earnings and Form 20-F reconciliations on revisions of analysts' forecasts. *The International Journal of Accounting, 38*(1), 71-93.

Hora, J. A., Tondkar, R. H., and McEwen, R. A. (2004). Does trading volume detect information content in earnings reconciliations of foreign firms? *Journal of International Accounting, Auditing and Taxation, 13*(2), 71-87.

Hung, M. (2001). Accounting standards and value relevance of financial statements: an international analysis. *Journal of Accounting and Economics, 30*(3), 401-420.

IASB. (2008a). Who we are. *Retrieved September, 17, 2008, from http://www.iasb.org/NR/rdonlyres/0C6DB4B3-4F56-431C-8E76-3CEF205741A1/0/WhoWeAre_Final12508.pdf*.

Jain, P. C. (1982). Cross-sectional association between abnormal returns and firm specific variables. *Journal of Accounting and Economics*, *4*(3), 205-228.

Jain, P. K., and Rezaee, Z. (2006). The Sarbanes-Oxley Act of 2002 and capital-market behavior: early evidence. *Contemporary Accounting Research*, *23*, 629-654.

Johnson, J. D. (1995). *An empirical analysis of the effect of foreign GAAP Adjustments on United States Stock Market Reactions.* Dissertation, University of Kentucky, Lexington.

Kim, O., and Verrecchia, R. E. (1994). Market liquidity and volume around earnings announcements. *Journal of Accounting and Economics, 17*(1-2), 41-67.

Kothari, S. P. (2001). Capital markets research in accounting. *Journal of Accounting and Economics, 31*(1-3), 105-231.

Kothari, S. P., and Warner, J. B. (2004). *The Econometrics of Event Studies*: SSRN.

Krinsky, I., and Jason, L. (1996). Earnings announcements and the components of the bid-ask spread. *The Journal of Finance*, *51*(4), 1523-1535.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. (1998). Law and finance. *The Journal of Political Economy, 106*(6), 1113.

Landsman, W. R., and Maydew, E. L. (2002). Has the information content of quarterly earnings announcements declined in the past three decades? *Journal of Accounting Research, 40*, 797-808.

Landsman, W. R., Maydew, E. L., and Thornock, J. R. (2012). The information content of annual earnings announcements and mandatory adoption of IFRS. *Journal of Accounting and Economics, 53*(1–2), 34-54. doi: http://dx.doi.org/10.1016/j.jacceco.2011.04.002

Lee, S., and Varela, O. (1997). An investigation of event study methodologies with clustered events and event day uncertainty. *Review of Quantitative Finance and Accounting*, *8*(3), 211-228.

Leftwich, R. (1981). Evidence of the impact of mandatory changes in accounting principles on corporate loan agreements. *Journal of Accounting and Economics, 3*(1), 3-36.

Lev, B. (1989). On the usefulness of earnings and earnings research: lessons and directions from two decades of empirical research. *Journal of Accounting Research, 27*(3), 153-192.

Lev, B., and Zarowin, P. (1999). The boundaries of financial reporting and how to extend them. *Journal of Accounting Research, 37*(2), 353-385.

MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature, 35*(1), 13-39.

Meek, G. K. (1991). Capital market reactions to accounting earnings announcement in an international context. *Journal of International Financial Management and Accounting, 3*, 93-109.

Olibe, K. O. (2001). Assessing the usefulness of SEC Form 20-F disclosures using return and volume metrics: the case of U.K. firms. *Journal of Economics & Finance, 25*(3), 343.

Peterson, P. P. (1989). Event studies: a review of issues and methodology. *Quarterly Journal of Business and Economics, 28*(3), 36.

Plumlee, M. A., and Plumlee, D. (2008). Information lost: A descriptive analysis of IFRS firms' 20-F reconciliations. *Journal of Applied Research in Accounting and Finance, 3*(1), 15-31.

Rees, L. L. (1995). The information contained in reconciliations to earnings based on U.S. accounting principles by non-U.S. companies. *Accounting and Business Research, 25*(100), 301-310.

Reese, W. A., and Weisbach, M. S. (2002). Protection of minority shareholder interests, cross-listings in the United States, and subsequent equity offerings. *Journal of Financial Economics, 66*(1), 65-104.

S&P. (2007). Standard&Poors' ADR Index: Index Methodology. *Retrieved 31 August 2009 from* *http://www2.standardandpoors.com/spf/pdf/index/SP_ADR_Index_Methodology_Web.pdf*.

SEC. (2007). Acceptance from foreign private issuers of financial statements prepared in accordance with International Financial Reporting Standards without reconciliation to U.S. GAAP. *1306*.

SEC. (2008d). Roadmap for the potential use of financial statements prepared in according with International Financial Reporting Standards by U.S. issuers. *Retrieved December, 02, 2008 from http://sec.gov/rules/proposed/2008/33-8982.pdf*.

Soderstrom, N. S., and Sun, K. J. (2007). IFRS adoption and accounting quality: a review. *European Accounting Review, 16*(4), 675-702.

Sogoloff, Rowena, M., and Stephanie, W. (2008). On the road to IFRSs. *Audit and Enterprise Risk Services, Deloitte and Touche LLP.*

Strong, N. (1992). Modelling abnormal returns: a review article. *Journal of Business Finance and Accounting, 19*(4), 533-553.

Sunder, S. (2002). Regulatory competition among accounting standards within and across international boundaries. *Journal of Accounting and Public Policy*, *21*(3), 219-234.

ACC005 The primary audience for an integrated report: Who are South African companies' reporting to, and what difference does it make to the length and quality of the report?

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Abstract

In South Africa and globally, there have been conflicting opinions as to the appropriate primary audience for an integrated report. According to the International Integrated Reporting Framework ('the Framework'), the purpose of an integrated report is to communicate *'to providers of financial capital,* how an organisation creates value over time' (IIRC, 2013a:4). Within South Africa, however, guidance has been issued that gives consideration to *all stakeholders* as the appropriate report-audience (IoD, 2009; IRC, 2011; IoD, 2014). The IIRC established the *providers of financial capital* as the primary audience, in order to promote the principle of *conciseness* and to ensure that *quality information on value-creation* is provided (IIRC 2013b:6).

The objective of this study is to identify who South African companies are primarily addressing their integrated reports to, and to assess whether or not integrated reports that are aimed primarily at providers of financial capital are more concise and of a better quality than the integrated reports of those companies that specify no, or a different, primary audience. The sample consisted of the 2013 integrated reports of the 100 largest South African companies listed on the JSE. The study found that only 13% of companies addressed their reports to providers of financial capital, whilst 50% addressed their reports to all stakeholders. The remaining companies did not explicitly state a target audience. Furthermore, the companies that reported primarily to providers of financial capital did not produce more concise reports, but were however able to produce reports of a better quality, than those companies that specified no, or a different primary audience.

These findings are valuable in assessing South Africa's progress in integrated reporting, which is gaining momentum globally as the corporate reporting norm (World Resources Institute, 2012; IIRC, 2014:10). In particular, these findings assist in concluding on whether or not the IIRC's aspirations for the integrated report being a concise communication of quality, to providers of financial capital, are becoming a reality or not.

Keywords: integrated report; primary audience; providers of financial capital; stakeholders; conciseness; quality.

INTRODUCTION

Since 2011, many South African companies have been preparing so-called ‘integrated reports’, in accordance with a JSE listing requirement. This requirement forms part of the broader requirement to comply (or explain areas of non-compliance) with the King Code on Corporate Governance 2009 (‘King III’), which encourages preparation of an ‘integrated report’ (JSE, 2014:425).

In 2011 there was limited guidance available on what constituted an ‘integrated report’. A South African body, the Integrated Reporting Committee (IRC), was therefore formed to establish guiding principles for the preparation of such a report. The IRC produced a discussion paper, titled ‘Framework for Integrated Reporting and the Integrated Report’ (IRC, 2011). The IIRC consulted this document thoroughly, before producing its own discussion paper, draft framework, and then final Framework in December 2013. The IRC have endorsed the Framework as guidance for South African companies preparing an integrated report (SAICA, 2014).

The IRC’s discussion paper took the view that the integrated report was to meet the information needs of investors *as well as other stakeholders* (IRC, 2011:5), including for example, customers, employees, government and/or regulators, which is in line with King III (IOD, 2009:109). The Framework however concludes that the purpose of an integrated report is to communicate how an organisation creates value over time, to *providers of financial capital* (IIRC, 2013a:4). These documents are therefore evidence of divergent-thinking on the appropriate primary audience for an integrated report.

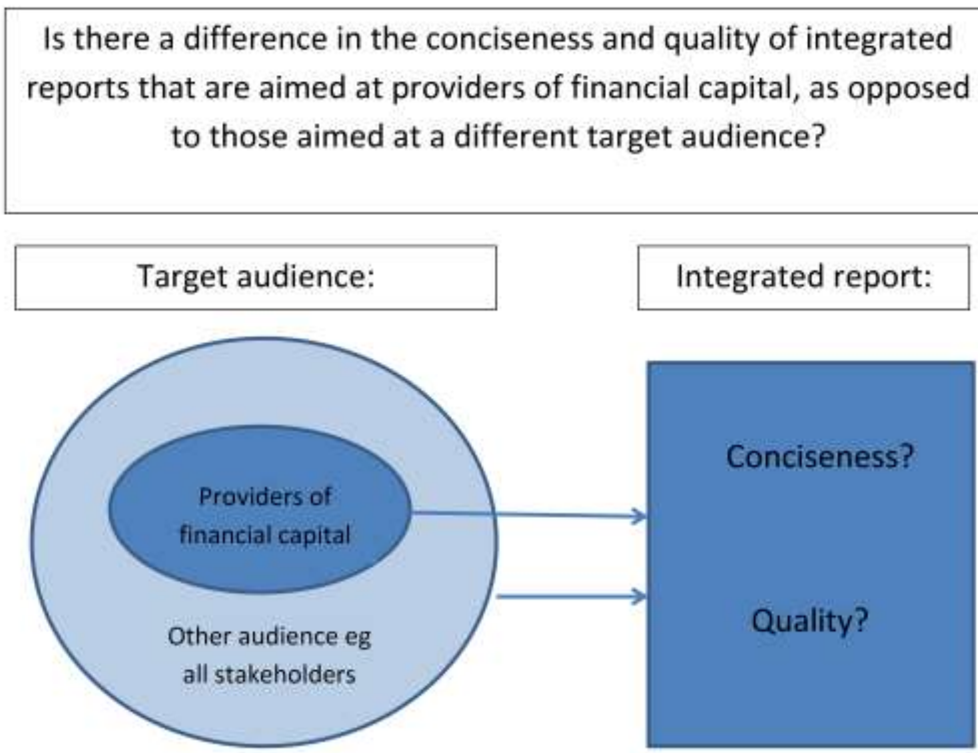
The IIRC’s basis for conclusions to the Framework explains their view, by stating that it is the providers of financial capital that determine the direction of significant investment (IIRC, 2013b: 6); and that efficient and productive investment allocation promotes financial stability and sustainability, which is a key aspect of the IIRC’s vision for Integrated Reporting (IIRC, 2013a:2). It also makes explicit that a report that attempts to cater for all the information needs of all stakeholders, would almost certainly make void the principle of conciseness, which forms part of the definition and guiding principles of an ‘integrated report’ (IIRC, 2013b:6).

Furthermore, the IIRC is committed to ensuring that the integrated report is a source of quality information (IIRC 2103a:2). According to the IIRC, a report that attempts to satisfy the information needs of a broad range of stakeholders might become more focussed on the impacts of various decisions, rather than on the entity’s ability to create value (IIRC, 2013b:6). Since the purpose of an integrated report is to communicate information on value-creation (IIRC, 2013a:4), restricting the target audience to providers of financial capital should result in a better quality of reported information on value-creation.

Importantly, the IIRC’s conclusion on the primary audience *does not* infer that the *needs* of the providers of financial capital are paramount to the needs of other stakeholders. In fact, the Framework clearly states that value is created over time through good relationships with *all* its stakeholders (IIRC, 2013a: 10, 17). Consideration of the impact of business decisions on all relevant stakeholders is therefore vital in order for value to be created. However for the purpose of reporting in the format of an integrated report, and for the reasons already mentioned, the providers of financial capital have been established as the report's target audience by the IIRC.

Within South Africa, however, many listed companies adopted the King III perspective on the matter, aiming their integrated reports at *all stakeholders*. Following the release of the Framework, the Institute of Directors in Southern Africa published a practise note in June 2014 that permits companies to continue to address their integrated reports to *all stakeholders*, if the Board of directors believes it is appropriate to do so, so long as the component of the report that complies with the Framework is separately identified (IoD, 2014). Therefore, it is still permissible for South African companies to address their Integrated Reports to all stakeholders, and there thus remains flexibility in selecting a meaningful target audience.

The purpose of this study is to identify whether or not the integrated reports of those companies that say they are reporting primarily to providers of financial capital, are more concise and of a better quality, than the integrated reports of those companies who specify no, or a different, target audience. The purpose has been diagrammatically depicted as follows:



LITERATURE REVIEW

In 2014, Ernst & Young ('EY'), in conjunction with the University of Cape Town, conducted a study that ranked the 2013 integrated reports of the 100 largest companies (according to market capitalisation at 31 December 2013) listed on the JSE. The integrated reports were ranked according to their quality, where 'quality' was assessed based on the report's alignment with the fundamental concepts, content elements and guiding principles in the IIRC's Draft Framework (EY, 2014)[32]. The study ranked the companies as either in the Top 10; Excellent; Good; Average; or Progress to be made. The findings of the study are summarised below:

	Top 10 and Excellent	Good	Average	Progress to be made	Total
No. of companies:	35	29	20	16	100

EY also investigated the proportion of companies that aimed their 2013 integrated reports primarily at providers of financial capital, as well as the average page lengths of the 2013 integrated reports. The study found that only 13% of companies in the sample specified the providers of financial capital as the report's target audience, and the remaining companies aimed their report at either all stakeholders or did not specify a target audience at all (EY, 2014). Furthermore, the average length of the integrated report was found to be 159 pages (EY, 2014).

The study also highlighted the fact that the overall length of the integrated report was greatly influenced by whether or not the company included the full set of IFRS financial statements, or a summarised version in the integrated report (EY 2014:19). The Framework does not require the full set of financial statements to be included in the integrated report. What is required, is communication on the performance of the company, that addresses the extent to which the company has achieved its strategic objectives, and the outcomes on the capitals[33] (IIRC, 2013a:28). Although the Company's Act requires companies to distribute certain financial information to shareholders (Republic of South Africa, 2008:s29(3)), and listed companies must comply with specific JSE Listing Requirements on the minimum content of this information (JSE 2014:411), this financial information need not be contained in the integrated report. Companies may choose to distribute this information in a separate document. For this reason, the length and format of financial information within the integrated report was found to vary considerably, with a consequential impact on the overall length of the integrated report. Specific consideration of the extent and nature of financial information incorporated into the

[32] Many of the companies' financial year-ends were before the final Framework had been published. EY therefore adjudicated the integrated reports relative to the guidance in the Draft Framework, so as not to prejudice any companies in the process. The principles in the Draft Framework were largely consistent with those in the final Framework, including the stipulated primary report-audience.

[33] The capitals are the financial, intellectual, human, manufactured, natural and social and relationship capitals, on which the organisation depends for success (IIRC 2013a: 11)

integrated report, is therefore required in studies that include analysis of the length of the report.

In 2014, the World Business Council for Sustainable Development (WBCSD) conducted a study by interviewing four South African companies and found that Integrated Reporting has contributed towards more concise and strategically-focussed reports (WBCSD, 2014). Furthermore, the study found that investors believe that the quality of integrated reports by South African companies has improved since 2011 (WBCSD, 2014).

However, no investigation has yet been made into whether or not the chosen target audience for the integrated report has resulted in any differences in the conciseness and quality of the integrated report. The purpose of this study is therefore, to investigate whether or not the companies identified by EY as being those reporting primarily to providers of financial capital, are preparing more concise integrated reports that are of a better quality, than companies that specify no, or a different target audience.

METHODOLOGY

The same companies used by EY (2014) were used for this study, namely the 100 largest companies listed on the JSE, as determined by their market capitalisation at 31 December 2013. The names of these companies are listed in Appendix A.

Identifying the target audience of the integrated report

The same methodology used by EY (2014) was used to distinguish companies that stated their target audience to be providers of financial capital, from those companies that specified no or an alternate primary audience[34]. This involved grouping the integrated reports into one of four categories, as indicated in Table 1 below. The table also shows the key words that were used to identify the appropriate target audience category.

Table 1: Target audience categories, and key words used to identify appropriate category

	Target audience:	**Key words used to identify target audience:** **"The integrated report…"**
1.	Primarily providers of financial capital	"is **aimed at** long-term investors/shareholders", or "is **targeted** primarily at investors".
2.	Stakeholders	"**aims to** provide stakeholders with…", or "is our primary report **to** stakeholders…", or "is structured **to enable** stakeholders to…".
3.	No primary purpose stated, but stated that the integrated report benefits stakeholders	"**provides** stakeholders with information...", or "content is **guided by**….ongoing consultation with stakeholders".
4.	Nothing said	

[34] Note that EY did not publish this methodology in their 2014 study, but the author of this paper was responsible for compiling the data for the EY study, and can therefore verify that the methodology employed was identical.

Table 1 indicates, that for the integrated report to be categorised in either category 1 or category 2, there had to be an explicit statement of intention targeting either audience-type. If there was no such statement, the integrated report was classified under category 4. However, if the integrated report made mention of the benefit of the report to all stakeholders, without explicitly aiming the report at a particular stakeholder(s), or if there was a statement indicating that stakeholder feedback on the content of the report is taken into consideration in designing the contents, then that integrated report was included in category 3.

Although the practice note issued by the JSE (2014) was published after the data for this study was made available, this does not undermine the relevance of this study as the practice note did not conflict with the guidance available at the time (regarding identifying a target audience) to the companies on which this study is based. At the time, the guidance comprised of King III; the IRC Framework; the IIRC's draft Framework (for most companies); and the final Framework (for some companies). There therefore was always and there remains, diverse opinion on the matter of an integrated report's target audience.

Identifying the 'conciseness' of the integrated report

The integrated reports of the companies in the sample were then analysed to identify the length of the integrated report. Page length was used as a proxy for determining 'conciseness', as reports prepared primarily for providers of financial capital, being a subset of all stakeholders, were assumed to be shorter in length than those addressed to all, or no particular stakeholders.

Of the companies in the sample, one company produced an integrated report that was solely available as an interactive, online version. There was no downloadable (pdf) version available. A meaningful page length could not be attributed to this on-line report, and for this reason, this company was excluded from the sample, and the findings are therefore based on the 99 remaining companies.

The length of the integrated report was determined according to the last numbered-page. One company produced a print-version and a web-version of their integrated report. The two versions differed in a number of respects, including financial statement content: the print-version contained summarised financial statements and the web-version linked to the full IFRS financial statements. The data for this study is based on the print-version.

As the data was found to not be normally distributed, an initial analysis was conducted using the median page length (rather than the average page length) of the four target audience categories. Thereafter, a Mann-Whitney test was performed on the sample to determine whether or not the page lengths of those companies reporting primarily to providers of financial capital were significantly different to the lengths of the reports by companies that specified no, or a different audience.

As noted from the EY study (2014), the extent of financial information was found to vary considerably. For example, one company did not include any financial statements at all, choosing rather to include the relevant financial information within the Chief Financial Officer's report, which amounted to three pages in total. Another company also chose to present their financial information using a combination of four pages of financial statements and the remaining information appeared in the Financial Director's review.

Due to the variety in the length of financial information included in the integrated reports, the companies that included summarised financial information (being either summarised financial statements, or another form of summarised financial information), as opposed to a full set of IFRS financial statements, were separately identified. These companies amounted to 45 in total. This sample was separately tested (using a Mann-Whitney statistical test) to determine whether or not the companies that reported primarily to providers of financial capital within this sample, produced more concise integrated reports, than the remaining companies in this sample. These results were compared to the findings obtained from testing the full sample, so as to assess whether or not the initial findings were further substantiated.

Identifying the 'quality' of the integrated report

The integrated reports for each of the four report-audience types described in section 1 above were further categorised according to quality, using the ranking attributed to the integrated report by EY (2014), being either Top 10; Excellent; Good; Average or Progress to be made.

A Chi-squared test was performed to identify whether or not those companies that reported primarily to providers of financial capital were producing better quality integrated reports than those reports that identified a different (or no) primary audience.

FINDINGS AND INTERPRETATION

1. PRIMARY AUDIENCE

The findings as to who companies state as their primary target audience are summarised in Table 2 below.

Table 2: Target audience for integrated report

	Integrated report aimed at:	No. of companies
1.	Primarily providers of financial capital	13
		86
2.	Stakeholders	50
3.	No primary audience stated, but state that the integrated report benefits stakeholders	16
4.	Nothing said	20
		99

As per the findings in the EY (2014) study, only 13% of companies aim their reports at providers of financial capital. This study found that 50% of companies aim their integrated report at all stakeholders. The dominance of 'stakeholders' as the specified target audience, can be largely attributed to the initial guidance issued in South Africa by the IRC and King III.

20% of companies do not specify at all who they are reporting to. Of these 20 companies, 9 have a secondary listing on the JSE, the primary listing being (predominantly) on the London Stock Exchange. This may indicate that these companies are perhaps less advanced in terms of integrated reporting developments. Furthermore, 16% of companies indicate that they believe their integrated report is of benefit to all stakeholders (consistent with the principles in the Framework), and yet do not make explicit whose reporting needs they have considered foremost in compiling the integrated report content. Together, the companies that have not indicated their intended audience, amount to more than one third (36%) of the sample.

LENGTH OF REPORT PER AUDIENCE-TYPE

The findings relating to report length are summarised in Table 3 below:

Table 3: Median page length and inter-quartile range per target-audience

		Total sample:		
	Integrated report aimed at:	**No. of companies**	**Median length of integrated report (pages)**	**Inter-quartile range (pages) (25% - 75%)**
1.	Primarily providers of financial capital	13	136	108 – 164 (56 pages)
		86	137	117 – 188 (71 pages)
2.	Stakeholders	50	137	119 – 190 (71 pages)
3.	No primary purpose stated, but state that the Integrated Report benefits stakeholders	16	131	113 – 165 (52 pages)
4.	Nothing said	20	150	119 – 210 (92 pages)
		99	**136**	**115 – 186 (71 pages)**

The median length of the integrated report for companies reporting primarily to providers of financial capital amounted to 136 pages. The median length of the integrated report for companies reporting to all stakeholders, amounted to 137 pages, which is the same as the 137 median page-length of integrated reports for the 86 companies that did not report primarily to providers of financial capital.

50% of the companies reporting primarily to providers of financial capital had report lengths that ranged between 108 and 164 pages (a range of 56 pages in total), whereas 50% of the remaining companies, had report lengths that ranged between 117 and 188 pages (a range of 71 pages in total). These results are further depicted in Figures 1 and 2 below:

Figure 1: Box and whisker plot of median, interquartile range, minimum and maximum page lengths for the <u>four target audience categories</u>, <u>for full sample</u>

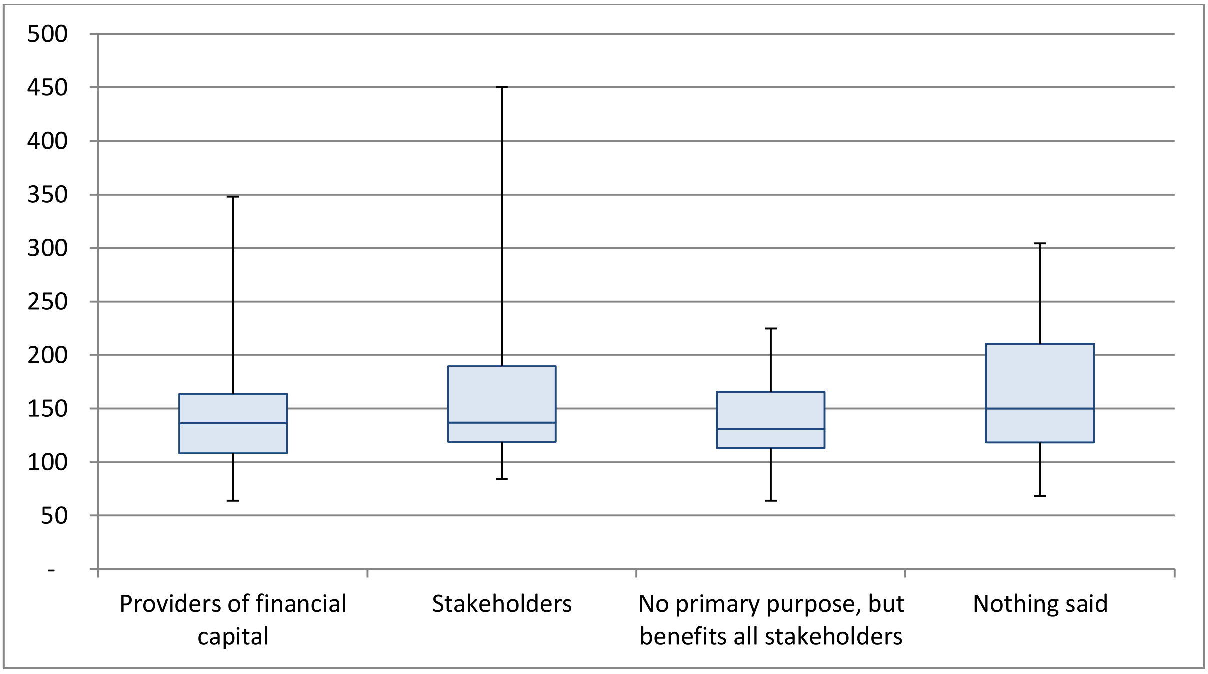
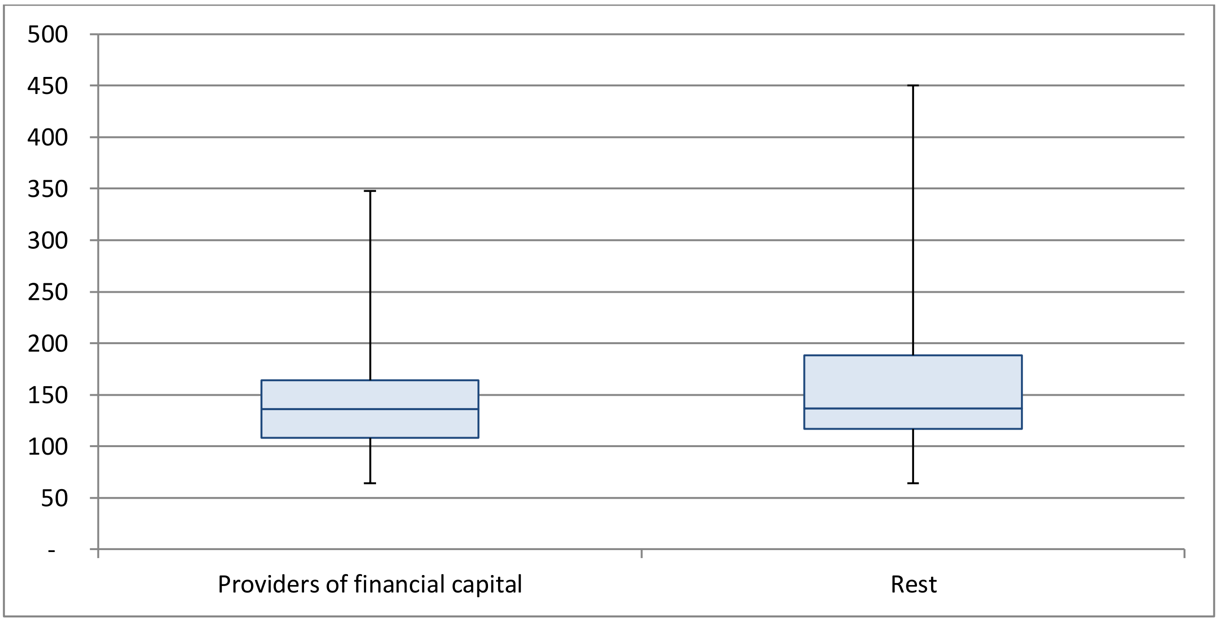


Figure 2: Box and whisker plot of median, interquartile range, minimum and maximum page lengths for <u>target audience categories 1 and (combined) categories 2, 3 and 4</u>, <u>for full sample</u>



Both figures 1 and 2 illustrate that the median and range of page lengths of companies reporting primarily to providers of financial capital appears to be very similar to the median and range of the page lengths reported by the other companies. These results provide preliminary evidence that companies reporting primarily to providers of financial capital have not been successful in preparing more concise integrated reports.

The data was then tested statistically, and the report lengths of the companies reporting primarily to providers of financial capital were found to not be significantly different from the report lengths of the remaining companies in the sample ($U = 639$, $n_1 = 13$, $n_2 = 86$, $p>0.20$, one-sided test).

The tests were repeated on the sample of companies that reported only summarised financial information. The findings are summarised in Table 4 below:

Table 4: Median page length of integrated reports per target-audience

		Summarised financial information sample:		
	Integrated report aimed at:	**No. of companies**	**Median length of integrated report (pages)**	**Inter-quartile range (pages) (25% - 75%)**
1.	Primarily providers of financial capital	11	134	94 – 146 (52 pages)
		34	126	108 – 144 (36 pages)
2.	Stakeholders	22	125	108 – 136 (28 pages)
3.	No primary purpose stated, but state that the Integrated Report benefits stakeholders	9	136	124 – 164 (40 pages)
4.	Nothing said	3	113	91 – 133 (42 pages)
		45	**126**	**108 – 144 (36 pages)**

From Table 4 it can be seen that the companies that reported summarised financial information had a shorter overall report length median of 126 pages, than that of the full sample, which had a median of 136 pages (refer to Table 3). Of the 45 companies reporting summarised financial information, 11 companies reported primarily to providers of financial capital, and had integrated reports with a median length of 134 pages. The median page length of the companies reporting to all stakeholders was less, at 125 pages, which is substantially the same as the median of the total 34 companies that did not report primarily to providers of financial capital, being 126 pages. This supports the earlier evidence that companies reporting primarily to providers of financial capital have not been successful at reporting more concisely. In fact, the median page length for this category of companies is larger than that of the rest of the sample.

Table 4 also shows that there was a greater range of page lengths reported by 50% of the companies reporting primarily to providers of financial capital (a range of 52 pages in total), compared to that of 50% of the rest of the sample (a range of 36 pages in total). The findings have been depicted in Figures 3 and 4, as follows:

Figure 3: Box and whisker plot of median, interquartile range, minimum and maximum page lengths for the <u>four target audience categories</u>, <u>for sample of companies reporting summarised financial information</u>

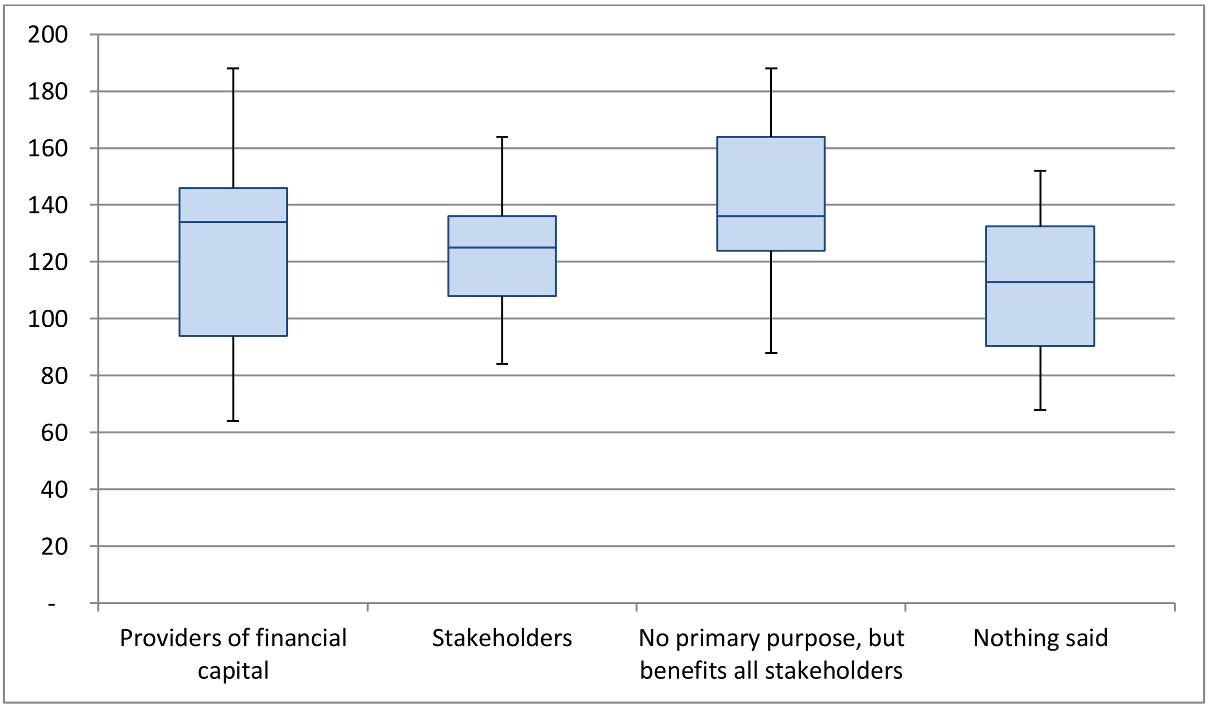
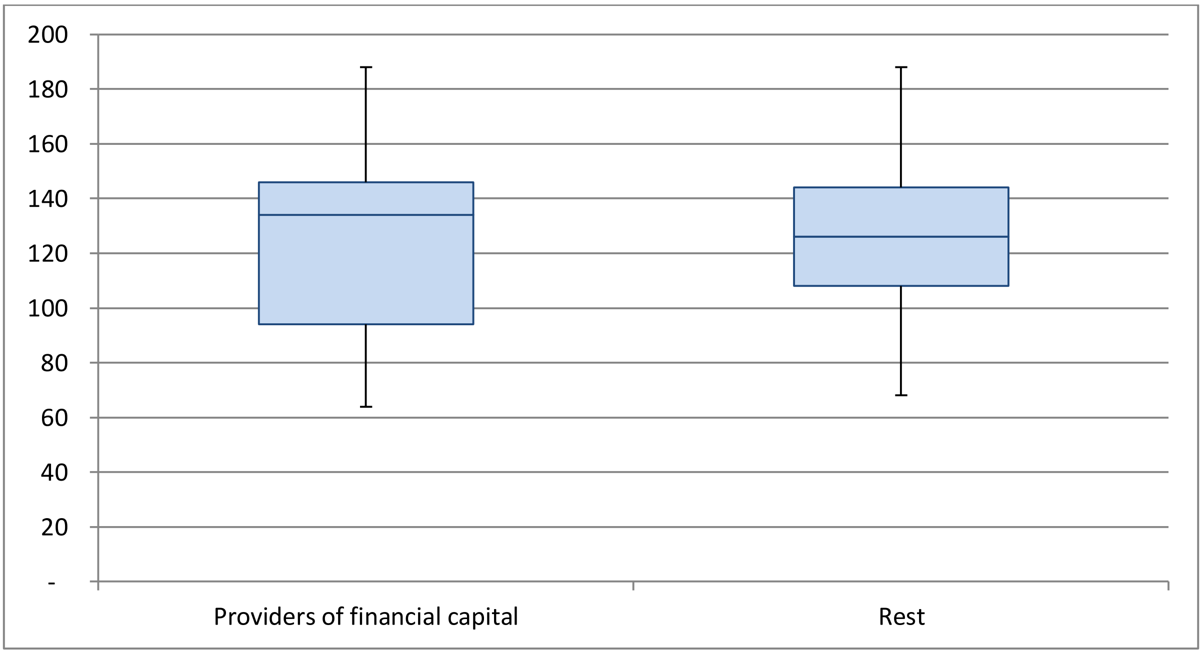


Figure 4: Box and whisker plot of median, interquartile range, minimum and maximum page lengths for <u>target audience categories 1 and (combined) categories 2, 3 and 4</u>, <u>for full sample of companies reporting summarised financial information</u>



Both Figures 3 and 4 illustrate that the median and range of page lengths of companies reporting primarily to providers of financial capital appears to be similar, if not greater, than the median and range of the page lengths reported by the other companies.

The data was tested statistically, and the report lengths of the companies reporting primarily to providers of financial capital were again found to not be significantly different from the report lengths of the remaining companies in the sample ($U = 194$, $n_1 = 11$, $n_2 = 34$, $p>0.40$, one-sided test).

The findings from both samples indicate that contrary to expectations, companies that have reported primarily to providers of financial capital have not been successful at producing more concise integrated reports.

QUALITY OF REPORT PER AUDIENCE-TYPE

The findings relating to the quality of the integrated report are summarised in Table 5 below:

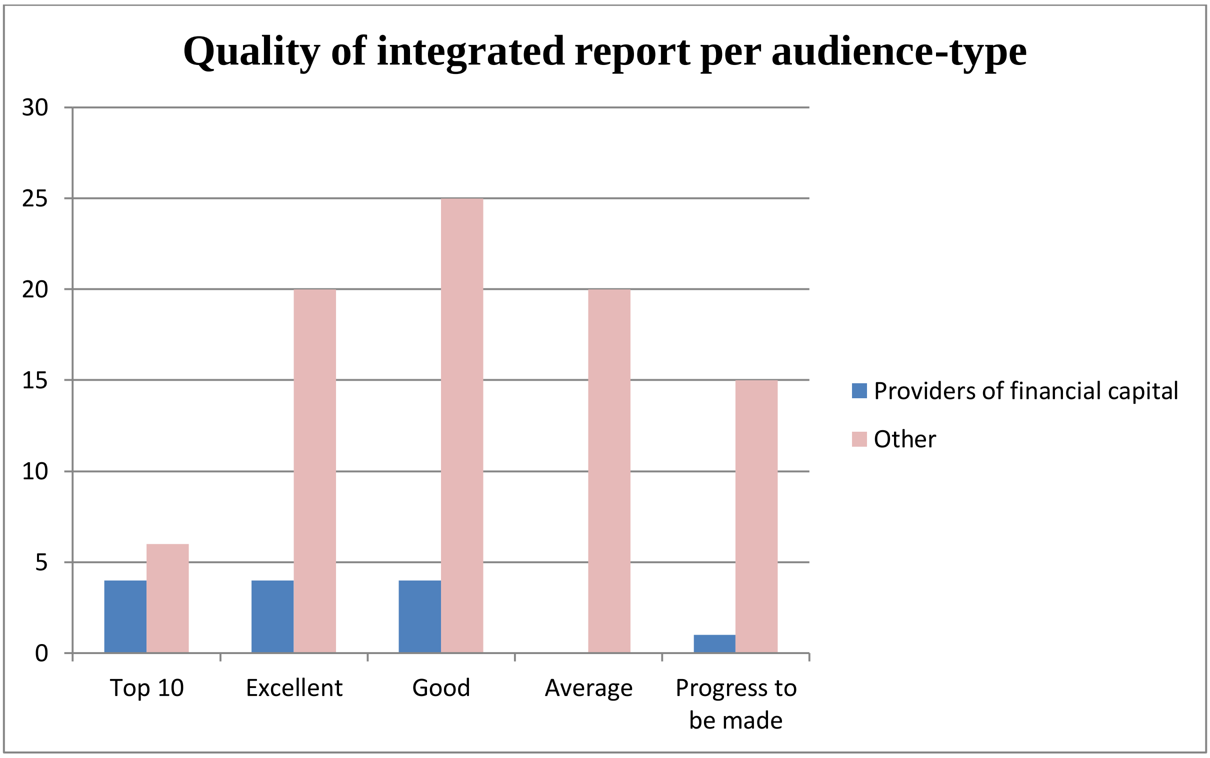
Table 5: Quality of integrated report per target-audience

	QUALITY of REPORT					
Full sample	**Top 10**	**Excellent**	**Good**	**Average**	**Progress to be made**	**TOTAL**
Providers of financial capital	4	4	4	0	1	13
Other	6	20	25	20	15	86
Stakeholders	4	8	19	14	5	50
No primary audience, but benefits all stakeholders	1	7	2	3	3	16
Nothing said	1	5	4	3	7	20
	10	**24**	**29**	**20**	**16**	**99**

Of the 13 companies that reported primarily to providers of financial capital, 12 of these companies were awarded either a good, excellent or Top 10 ranking. Of the 86 companies that reported to all, or no particular group of stakeholders, 20 of these companies were ranked as ‘average’ and 15 as ‘progress to be made’. These results are a preliminary indication that companies that have aimed their reports at providers of financial capital have produced reports that are of a better quality, than the reports that were addressed to all stakeholders, or where no audience was specified.

A histogram of these findings is shown in Figure 5 as follows.

Figure 5: Quality of integrated report per target-audience



These results were tested statistically using the Chi-squared test, and the quality of integrated reports that were aimed at providers of financial capital were found to be significantly different (at a 5% level of significance) from the quality of the reports that were aimed at all, or no particular stakeholders ($\chi^2 = 10.29$, $p = 0.036$).

The 13 companies that reported primarily to providers of financial capital had financial year-ends that included 31 March, 30 June, 31 August, 30 September and 31 December 2013. The high quality of these companies' reports therefore cannot be as a result of the improved, final guidance from the Framework which was only published in December 2013. A more likely explanation is that these companies are simply more advanced in their integrated reporting journey, having more fully adopted and incorporated integrated thinking and reporting principles into their businesses, compared to the other companies. The statement that the integrated report is aimed at providers of financial capital, is in itself evidence of such companies being at the cusp of international integrated reporting developments, particularly given the divergent thinking in South Africa on the appropriate primary audience.

CONCLUSION

The Framework stipulates that the primary audience of an integrated report are the providers of financial capital. A prior study found that only 13% of South African companies state that this subset of stakeholders is their target audience (EY, 2014). This study analysed the target audience of the remaining companies' integrated reports and found that 50% of South African companies addressed their integrated report to *all* stakeholders, and the remaining 36% of companies did not specify their primary audience.

These results indicate that South African companies that intend to align with the purpose of an integrated report, as stipulated in the Framework, need to reconsider the objective and focus of their integrated reports.

Furthermore, those companies reporting primarily to providers of financial capital have not been more successful than other companies at producing a more concise integrated report. This was found to be the case, even when the sample was restricted to only those companies that reported summarised financial information. This is contrary to the IIRC's vision of integrated reports becoming more concise, given a narrower target audience.

However, companies that reported primarily to providers of financial capital have been successful at producing integrated reports that are of a better quality than those companies that reported to all, or no particular stakeholders. This is possibly due to such companies being further along in their integrated reporting journey, having grappled more intently and better familiarised themselves with the principles and objectives of the Framework, with the result being a superior integrated report.

Further research into the nature of the differences between integrated reports of companies that purport to be reporting primarily to providers of financial capital, and those of other companies, may provide further useful insight into the factors that drive the quality of the integrated report. Finally, it would be useful to repeat this study using the 2014 integrated reports, in order to identify whether or not the JSE practice note issued in June 2014 (IoD, 2014), and the additional time to grapple with the Framework, has had any influence on the target audience, conciseness and quality of more recent integrated reports.

REFERENCES

Ernst & Young. (2014). *Excellence in Integrated Reporting 2014*. Available at: http://www.ey.com/Publication/vwLUAssets/EY-Excellence-In-Integrated-Reporting-2014/$FILE/EY-Excellence-In-Integrated-Reporting-2014.pdf [Accessed January 26, 2015].

Institute of Directors (IoD). 2009. *King Report on Governance for South Africa*. Available at: http://african.ipapercms.dk/IOD/KINGIII/kingiiireport/e/ [Accessed January 26, 2015].

Institute of Directors (IoD). 2014.*Practice note, King III Chapter 9, Integrated Report.* Available at: https://c.ymcdn.com/sites/iodsa.siteym.com/resource/collection/24CB4885-33FA-4D34-BB84-E559E336FF4E/Integrated_report.pdf [Accessed January 26, 2015].

Integrated Reporting Committee (IRC). (2011). Framework for Integrated Reporting and the Integrated Report. Discussion Paper. Available at :http://www.sustainabilitysa.org/Portals/0/IRC%20of%20SA%20Integrated%20Reporting%20Guide%20Jan%2011.pdf. [Accessed: 19 May, 2014].

International Integrated Reporting Committee (IIRC). (2013a). International Integrated Reporting Framework. http://www.theiirc.org/wp-content/uploads/2013/12/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf. [Accessed: 19 May, 2014].

International Integrated Reporting Committee (IIRC). (2013b). Basis for conclusions. International Integrated Reporting Framework. http://www.theiirc.org/wp-content/uploads/2013/12/13-12-08-Basis-for-conclusions-IR.pdf. [Accessed: 19 May, 2014].

International Integrated Reporting Committee (IIRC). (2014). IIRC Welcomes South Africa's endoresement of the International Integrated Reporting Framework. http://www.theiirc.org/2014/03/21/iirc-welcomes-south-africas-endorsement-of-the-international-integrated-reporting-framework/[Accessed 28 May, 2014].

JSE. (2014). JSE Listings Requirements. Lexis Nexis https://www.jse.co.za/content/JSEEducationItems/Service%20Issue%2017.pdf [Accessed 19 May, 2014].

Republic of South Africa. (2008). *Companies Act, No. 71 of 2008* as amended 2011. Statutes of the Republic of South Africa, 2011. Lexis Nexis. Cape Town.

South African Institute of Chartered Accountants (SAICA). 2014 South Africa puts its weight behind global move to better corporate reporting. Available at: https://www.saica.co.za/News/NewsArticlesandPressmediareleases/tabid/695/itemid/4466/language/en-ZA/Default.aspx [Accessed 6 February 2014].

World Business Council for Sustainable Development (WBCSD). (2014). Integrated Reporting in South Africa. From Concept to Practice. http://www.wbcsd.org/Pages/EDocument/EDocumentDetails.aspx?ID=16358&NoSearchContextKey=true [Accessed 21 May 2015].

World Resources Institute (WRI). (2012). How integrated reporting can help companies see the bigger picture. http://www.wri.org/blog/2012/03/how-integrated-reporting-can-help-companies-see-bigger-picture [Accessed 28 May, 2014].

APPENDIX A

1 A E C I Limited
2 Adcock Ingram Holdings Limited
3 African Bank Investments Limited
4 African Rainbow Minerals Limited
5 Allied Electronic Corporation Limited
6 Anglo American Platinum Limited
7 Anglo American Plc
8 Anglogold Ashanti Limited
9 Arcelormittal South Africa Limited
10 Aspen Pharmacare Holdings Limited
11 Assore Limited
12 Aveng Limited
13 AVI Limited
14 Barclays Africa Group Limited
15 Barloworld Limited
16 BHP Billiton Plc
17 Brait SE
18 British American Tobacco Limited
19 Capital & Counties Properties Plc
20 Capital Property Fund
21 Capitec Bank Holdings Limited
22 Caxton CTP Publishers and Printers Limited
23 Clicks Group Limited
24 Compagnie Financiere Richemont SA
25 Coronation Fund Managers Limited
26 Datatec Limited
27 Discovery Limited
28 Distell Group Limited
29 EOH Holdings Limited
30 Exxaro Resources Limited
31 Famous Brands Limited
32 Firstrand Limited
33 Fountainhead Property Trust
34 Glencore Xstrata Plc
35 Gold Fields Limited
36 Grindrod Limited
37 Growthpoint Properties Limited
38 Harmony Gold Mining Company Limited
39 Hosken Consolidated Investments Ltd
40 Hyprop Investments Limited
41 Illovo Sugar Limited
42 Impala Platinum Holdings Limited

43 Imperial Holdings Limited
44 Intu Properties Plc
45 Investec Plc
46 Invicta Holdings Limited
47 Kumba Iron Ore Limited
48 Liberty Holdings Limited
49 Life Healthcare Group Holdings Limited
50 Lonmin Plc
51 Massmart Holdings Limited
52 Mediclinic International Limited
53 MMI Holdings Limited
54 Mondi Plc
55 Mr Price Group Limited
56 MTN Group Limited
57 Murray & Roberts Holdings Limited
58 Nampak Limited
59 Naspers Limited
60 Nedbank Group Limited
61 Netcare Limited
62 New Europe Property Investments Plc
63 Northam Platinum Limited
64 Oceana Group Limited
65 Old Mutual Plc
66 Omnia Holdings Limited
67 Pick 'n Pay Stores Limited
68 Pioneer Food Group Limited
69 PPC Limited
70 PSG Group Limited
71 Rand Merchant Insurance Holdings Ltd
72 Redefine Properties Limited
73 Reinet Investments S.C.A.
74 Remgro Limited
75 Resilient Property Income Fund Limited
76 Reunert Limited
77 RMB Holdings Limited
78 Royal Bafokeng Platinum Limited
79 SABMiller Plc
80 Sanlam Limited
81 Santam Limited
82 SAPPI Limited
83 Sasol Limited
84 Shoprite Holdings Limited
85 Standard Bank Group Limited

86 Steinhoff International Holdings Limited
87 Sun International Limited
88 Telkom SA SOC Limited
89 The Bidvest Group Limited
90 The Foschini Group Limited
91 The Spar Group Limited
92 Tiger Brands Limited
93 Tongaat Hulett Limited
94 Trencor Limited
95 Truworths International Limited
96 Tsogo Sun Holdings Limited
97 Vodacom Group Limited
98 Vukile Property Fund Limited
99 Wilson Bayly Holmes-Ovcon Limited
100 Woolworths Holdings Limited

PART D – MANAGEMENT ACCOUNTING AND FINANCE

Table of Contents

MAF001 A Performance Measurement Framework to enhance the Business Performance and Survival of MSMEs in the Retail Sector in Zimbabwe

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University of South Africa

Abstract

This is a conceptual paper that seeks to propose a performance measurement framework for MSMEs in the retail sector in Zimbabwe. A performance measurement framework is a business tool which may be used to enhance the success and survival of a MSME. The performance measurement framework should be based on critical success factors of the enterprise and the key performance indicators of the critical success factors. The critical success factors which can be considered are commitment of the owner-manager, business planning, management of information, strategies to manage revenue and costs, innovation, management of customers, management of suppliers, management of competitors, the enterprise's pool of resources, conformance to regulations and management of sources of finance. The performance measurement framework is proposed to be built on the basis of the organisational theory, goal theory, open system theory, and stakeholder theory. Therefore, there is a need for considering and balancing the interests of all the stakeholders. The performance measurement framework should focus on both financial performance and non-financial performance.

Key words: Performance measurement, critical success factors, key performance indicators, performance measurement framework

INTRODUCTION

Micro, Small and Medium Enterprises (MSMEs) play a very significant role in the economic development of Zimbabwe. A survey by Finmark Trust revealed that Zimbabwe has 3,5 million MSMEs, with an estimated turnover in 2012 of US$7, 4 billion and employing 5,7 million people (Block, 2013). This annual turnover for MSMEs in 2012 was much higher than the national budget for that year which stood at only $3.4 billion (own deduction). Chinamasa (2013:202) also highlighted the importance of the MSMEs to the Zimbabwean economy when he indicated in his 2014 national budget statement that the 2012 survey by Finmark Trust found that Zimbabwe's MSMEs contribute more than 60% to GDP.

The number of people employed by MSMEs as cited in the Finmark Trust survey referred to above is also very high (own deduction) given that according to a national census held in 2012, Zimbabwe has a population of about 13 061 239 people (Zimbabwe National Statistics Agency 2012 census report). According to the Reserve Bank of Zimbabwe's (2007) monetary policy review statement, 80% of population in Zimbabwe depend on MSMES for their livelihood. The high level of unemployment in the country as a result of economic meltdown in the last 10 years or so and the government's indigenisation program may have encouraged the majority of people to resort to entrepreneurship in order to earn a living. This implies that the contribution of MSMEs in employment creation and economic development in Zimbabwe is very significant.

Chinamasa (2013:102) argues that strategies that target the development of MSMEs will provide immense benefits to the country in terms of growth, employment generation and support to the fiscus through taxes, among others

The retail sector in Zimbabwe

The Zimbabwean economy is classified into a number of sectors and the major sectors are mining, transport and communication, manufacturing, agriculture and retail (Zimbabwe National Statistics Agency, 2014). The retail sector is the largest sector of the economy and made the highest contribution to GDP in 2013, contributing at least 15.3% (African economic outlook, 2014).This is also supported by Zimbabwe Revenue Authority (2014) which indicated that value added tax contributed the highest tax revenue of 28% in 2014 and it may be inferred that much of the VAT was from the retail sector as the manufacturing sector is currently experiencing very low capacity utilisation (own deduction).

The Zimbabwean economy is sustained more by commercial activities (that is buying and selling) rather than manufacturing and processing activities. A survey by Zimbabwe National Statistics Agency between August 2013 and June 2014 indicated that 59.2% of business operators are in the retail trade (Zimbabwe National Statistics Agency, 2014). The economy has had a declining manufacturing sector for the past years with industry capacity utilisation being estimated at 36.3% in 2014 (Confederation of Zimbabwe Industries, 2014). It may therefore be argued that much of the economic activity in the Zimbabwean economy is in the retail sector. This may suggest that the retail sector is very important for the economic development of Zimbabwe.

Challenges faced by MSMES enterprises in Zimbabwe

Most MSMEs in Zimbabwe are faced with a lot of challenges which impede their graduation into sizeable corporates (Chinamasa, 2013:203). Nyoni (2012) mentions that most MSMEs in Zimbabwe fail within a year of operating despite the finance and other resources they receive from government and other development partners.

Frazer, Weaven and Grace (2012:54) observed that most of failed small business owners in Australia had ventured into business not by choice or to explore business opportunities, but to get a source of income. This may also be the case in Zimbabwe given that about 50% of economically active persons are self-employed (Zimbabwe National Statistics Agency, 2012:87). There is a possibility that some of the people establishing these MSMEs are likely not to have obtained any training on running a business. Therefore there may be a need to develop a simple framework which may be used by the owner/mangers of MSMEs to enhance business performance.

Concept of performance measurement

According to Neely, Gregory and Platts (2005:1229) performance measurement can be defined as "a process of quantifying the efficiency and effectiveness of a process" and a performance measure is defined as "a metric used to quantify the efficiency and/or effectiveness of an action." They went on to define a performance measurement system as "the set of metrics used to quantify both the efficiency and effectiveness of an action." Neely, Adams and Kennerly (2002) define performance measurement and a management system as a system that gathers, elaborates and analyses information needed for decision-making purpose. Therefore, these definitions may suggest the existence of a relationship between performance measurement and management and enterprise performance and survival.

Importance of performance measurement in an enterprise

Researchers belonging to different time periods and disciplines appear to be unanimous that performance measurement has an influence on the success and survival of a business enterprise (Srimai, Radford & Wright, 2011:665). There is an argument that performance measurement is a crucial business tool in enhancing business performance (Taticchi, Balachandran, Botarelli & Cagnazzo, 2008; Taticchi & Balachandran, 2008; Amir, 2011:44; Goh, 2012; Hegazy & Hegazy, 2012; Waweru & Spraakman, 2012; Zeglat, AlRawabdeh, AlMadi & Shrafat, 2012:440; Al-Matari, Al-Swidi & Fadzil, 2014). Cocca and Alberti (2010:186) are of the view that performance measurement is one of the cornerstones of any enterprise's survival. Taticchi, Tonelli and Cagnazzo (2010:4) argue that enterprises need to monitor and understand their performance in order to become competitive and survive.

Performance measurement is essential in steering an organisation towards achieving its objectives (Gomes & Yasin, 2011:543; Taticchi, Balachandran & Tonelli, 2012:41; Zeglat, *et al*, 2012:440). Research is therefore carried out to find out how measurement of performance can facilitate attainment of organisational objectives (Taticchi, *et al.*, 2010:13). Hence, it might be vital to have a suitable performance measurement framework in place which enterprises may make use of in order to succeed and survive.

There is an argument that having a performance measurement framework in place may influence the managers' belief system and the way they conduct their business (Srimai, *et al.*, 2011: 673). Taticchi, *et al.*, (2012:43) argue that the measurement of business performance encourages management to be proactive rather than reactive. This may indicate that if it is likely that there are any operational challenges to be encountered in future, the enterprise will begin preparing for such an eventuality now and therefore safeguard survival and continuity of the business.

Performance measurement may influence managers to come up with strategic plans for their enterprises. It might therefore be essential for the performance targets to be in line with the enterprise's business strategy. It is evident from literature that what gets measured gets attention (McAdam, 2000:321; Neely, Adams & Crowe, 2001; Cocca & Alberti, 2010:186). Therefore, business performance measurement may force owner/managers of enterprises to decide on factors in their strategic plans that are critical to the success and survival of the enterprises and to design frameworks for measuring and managing them.

A system of performance measurement may help in aligning different activities or organisational units to ensure that synergy is realised. This is supported by Kaplan and Norton (2001:87) who argue that performance measurement systems provide insight into different units or levels of analysis and this helps to assess whether there is synergy among the units and also aligns the units to the enterprise's objectives. Such an alignment is likely to promote efficient use of resources and also encourages the enterprises to capitalise on their economies of scale. Hence the enterprise might become competitive and enhance its chances of survival and success.

Several authors indicate that in order for an enterprise to survive, it is essential to satisfy the competing needs of its various stakeholders (Garengo, Biazzo, & Bititci, 2005:26; Neely, 2005:1272; Chong, 2008:1; Cocca & Alberti, 2010:186; Taticchi, *et al.*, 2012:41-42). Therefore, it might be necessary to identify those stakeholders which the enterprise needs and incorporate them in the performance measurement framework as they play a pivotal role in the success of the enterprise.

It may be argued that benefits assumed to be derived from measuring performance of an enterprise cannot be easily disputed considering the available literature in support of performance measurement (Srimai, *et al.*, 2011:665; Cocca & Alberti, 2010:186; Taticchi, *et al.*, 2010:4; Gomes & Yasin, 2011:543, Taticchi, *et al.*, 2012:41-42). Therefore, is there a need to continue investing time in research on performance measurement in enterprises? While it may be correct to argue that there has been a lot of research on performance measurement over the years, there are still a lot of unresolved issues on the subject especially with regard to performance measurement in SMEs in general and Micro Enterprises (MEs) in particular (Garengo, *et al.*, 2005:28; Chong, 2008:1; Taticchi, *et al.*, 2008:57; Taticchi *et al.*, 2010:14). Therefore, there seem to be a need for research on performance measurement, especially among very small enterprises, if the recent high failure rate of MSMEs reported in literature is to be considered.

The fact that a number of frameworks on performance measurement have been proposed by researchers (Chennell, Dransfield, Field, Fisher, Saunders & Shaw, 2000; Kueng, Meier & Wettstein, 2000; Hvolby & Thorstenson, 2001; Laitinen, 2002; Chong, 2008; Taticchi, *et al.*, 2008; Chalmeta, Palomero & Matilla, 2012) also pose problems for the practicing managers. This may also be evidence that research on the subject has not been conclusive. A review of the literature on performance measurement does not point towards an agreement amongst authors on the best performance measurement framework to be adopted by MSMEs (Neely, 2005:1267). Probably the reason is that performance is a concept which may mean a different thing to different people and which has a number of variables. The concept is very complex and multi-dimensional in nature (Simpson, Padmore & Newman, 2012:272-274). Hence the need for the design of a performance measurement framework in the context of MSMEs in the retail sector in Zimbabwe arises.

RESEARCH PROBLEM

As argued before, the future economic growth of Zimbabwe lies in the performance and success of MSMEs in general and those in the retail sector in particular. The focus on the retail sector will be more ideal for most MSMEs in Zimbabwe because the sector has less entry barriers for small enterprises (Chikweche, 2015; Mufudza, Jengeta & Hove, 2013). However, the challenge which most MSMEs face the world over is to sustain their operation (Myles, 2010). MSMEs in Zimbabwe are not an exception to this challenge. Nyoni (2012) and Chinamasa (2013) indicate that most MSMEs in Zimbabwe fail to graduate into large corporates. The MSMEs therefore fail to act as the seed-bed for the development of large companies as proposed by Storey and Westhead (1994). According to Mudavanhu, Bindu, Chigusiwa and Muchabaiwa (2011) the failure rate of MSMEs in Zimbabwe is at 85%, with 60% failing in the first year and 25% within the next three years. Their research just like many other researches the world over, found that the major causes of failure of MSMEs in Zimbabwe were lack of general knowledge on how to run the business, unavailability of credit, competition from imports and high cost of raw materials. Nyoni (2002) also highlights the causes of MSMEs failure in Zimbabwe as limited access and cost of finance; lack of marketing skills and market knowledge; inadequate management and entrepreneurial skills; lack of access to infrastructure; lack of access to land; lack of information; and a hostile regulatory environment.

While most previous studies have tended to focus on identifying the causes of failure for MSMEs, this research will attempt to focus on the critical success factors for the performance of MSMEs and propose a performance measurement framework to manage the critical success factors. Thus, the research assumes that measurement of the critical success factors will lead to better management of the factors resulting in high performance and the success, survival and growth of the MSMEs in the retail sector in Zimbabwe.

Research objectives

The main objective of the study is to develop a performance measurement framework to be used by MSMEs in the retail sector in Zimbabwe in order to enhance their success and survival.

Specific objectives

- Determine the critical success factors which drive the business performance of MSMEs in the retail sector in Zimbabwe.
- Propose a conceptual framework and performance measurement framework applicable to MSMEs in the retail sector in Zimbabwe.

Literature Review

MSMEs may require a framework that is efficient, easy to apply and cost effective. The reason being that most MSMEs have limited resources especially information technology, and therefore require approaches and performance measurement frameworks that respond to their specific circumstances (Garengo, *et al.*, 2005:29-30). An ideal performance measurement framework is one which can encourage an enterprise to set performance targets and review performance from time to time to ensure that the enterprise is still on course towards achieving its objectives (Linn, 2007). Focus should not be only on the results but determinants of those results as well (Taticchi, *et al.*, 2012:41). Therefore, it is important to understand the causal relationship between results and determinants of those results as this would help in deciding the course of action to take in order to steer an enterprise towards achieving its performance objectives (Garengo, *et al*., 2005:34-35; Simpson, *et al*., 2012:264-266).

The performance measurement framework should be flexible so that it responds to the changing circumstances of MSMEs (McAdam, 2000). Cocca and Alberti (2010:193-97) also argue that it is important to design a framework for small enterprises which is simple, clear, focused and which give useful information. Such a framework might be more appropriate to MSMEs given that the majority are managed by owner-managers and some of the owner-managers may lack basic training in business management (Mudavanhu, Bindu, Chigusiwa and Muchabaiwa, 2011) and may therefore not be able to comprehend complex performance measurement frameworks.

A performance measurement framework should be balanced. A balanced framework is one which incorporates different performance dimensions (Garengo, *et al*., 2005:32). Kaplan and Norton (1992) consider a balanced framework to be one which incorporates financial and non-financial measures. Taticchi, *et al.* (2008:66) argue that a balanced framework is one which incorporates financial and non-financial measures, internal and external measures and considers all stakeholders. Therefore a balanced framework may likely contribute to the success and survival of the MSMEs.

The performance of MSMEs in the retail sector in Zimbabwe

The hyperinflationary environment experienced between the period 2004 and 2008 saw the proliferation of MSMEs in the retail sector (Chikweche, 2015). He further argues that the MSMEs were taking the market once occupied by large retail outlets which had either ceased operating or reduced the level of operating. Examples of such large retail outlets in Zimbabwe are OK supermarket, TM supermarket, Spar supermarkets, large clothing companies such as Topics, Edgars and large furniture retail shops such as Meikles, Pelhams, TV Sales and Hire and many others. The hyperinflationary period was characterised by high interest rates, frequent price changes, shortage of foreign currency and price controls (McGreal, 2007). Most formal large organizations could not continue operating during turbulent economic environment. On the other hand the same hyperinflationary period presented opportunities for MSMEs as they could be reactive enough to adapt to the rapidly changing economic environment (Mufudza, Jengeta & Hove, 2013).

The MSMEs outperformed the large and formal retail shops by acquiring foreign currency from the illegal parallel market (black market) and importing products to make up for the local supply shortages (Chikweche, 2015). The MSMEs were also in a better position to elude price controls than large supermarkets which were being constantly monitored by the authorities (McGreal, 2007).

In 2009 the Zimbabwean economy ceased using the Zimbabwe dollar and adopted multi currencies as legal tenders. The use of multi- currency system, mainly the United States dollar, the South African rand and the Botswana pula led to the stabilisation of the economy as characterised by low rates of inflation and relatively low interest rates (Kanyenze, Kondo, Chitambara & Martens, 2011). The use of the multi- currency system was followed by the re-entry of large retail outlets posing a threat to the MSMEs in the retail sector (Chikweche, 2015). There is an argument that MSMEs performed well during the hyperinflation period because they took advantage of the scrutiny that the big retail outlets faced from the Government and gained market share without necessarily developing sustainable business models (Chikweche, 2015). This research advances an argument that one such sustainable business model that may enhance the survival and success of the MSMEs is a performance measurement framework.

The large retail outlets regained lost market share by recapitalising and expanding their outlets as well as improving operational systems so that they could use their critical mass advantage (Chikweche, 2015). The large retail outlets managed to improve their performance by forming strategic alliances with suppliers, reducing profit margins and diversifying to other business sectors (Chikweche, 2015).

Criticisms of the available frameworks

As stated earlier, literature seems to suggest that most of the available performance measurement frameworks are not suitable for MSMEs. There are limited frameworks specific to the context of MSMEs. Therefore it would appear as if MSMEs are compelled to use models which do not suit their circumstances (McAdam, 2000:305-306; Garengo, *et al*., 2005:28). The assumptions held in performance measurement frameworks developed for large enterprises may not be valid when applied to MSMEs. Some frameworks assume that enterprises have large customer bases and these customers are relatively homogenous in nature (McAdam, 2000:309). On the contrary, in Zimbabwe MSMEs have a diversity of customers ranging from individual customers to large corporations as well as from informal enterprises to formal enterprises (Chikweche, 2015; Mufudza, Jengeta & Hove, 2013). Hence the need to develop a framework tailored to the needs of MSMES in the retail sector in Zimbabwe.

Unlike large enterprises, MSMEs' employees have a closer relationship with the enterprises' customers (McAdam, 2000:309). This closer relationship with customers implies that there may be a need for designing a framework that maintains such relationships for a long time thereby promoting long-term success of the enterprises.

Most of the frameworks developed for large enterprises assume involvement and participation of employees at all levels (McAdam, 2000:309). For example the Balanced Score Card (BSC) has a quadrant on people or employee learning and growth. However in MSMEs there is less participation by employees in decision-making and the owner-manager makes sole decisions regarding the running of his or her business (Garengo, *et al*., 2005:26). The advantage of lack of involvement of employees in the running of business might be that there may be no unnecessary bureaucracy (Cocca & Alberti, 2008:3). Involving employees in the decision-making process on the other hand might foster the spirit of teamwork and make everyone aware of the mission and vision of the enterprise and thrive to achieve the enterprises' objectives (McAdam, 2000:309-10; Garengo, *et al*., 2005:30). There may therefore be a need to develop a framework which strikes a balance in terms of involvement of employees.

The frameworks also assume that managers of enterprises are full time employees who can directly oversee the implementation of the frameworks (Cocca & Alberti, 2008). However, it seems that some owner-managers of MSMEs are employed full time elsewhere apart from the enterprises they own and manage (own deduction). As a result, these owner-managers might need frameworks which enable them to monitor and control their enterprises within the limited time they have.

Lastly, most performance measurement frameworks assume that enterprises have a motive to create wealth and would therefore have performance measures which would result in value creation for the company. On the contrary some MSMEs are not formed to pursue wealth creation objectives but to pursue other personal, usually social objectives of the owner (Simpson, *et al*., 2012:268).

Some authors criticise the current methods used to measure performance. Simpson, *et al*. (2012:266) argue that most research papers on the subject are not scientific since they fail to identify and control moderating, intervening and contaminating variables when trying to establish existence of cause-effect relationships between the independent variable and the dependent variable. They also argue that conclusions drawn from most of the research are based on the opinions and perceptions of managers. These opinions and perceptions are gathered using self-report questionnaires which are not reliable data collection instruments (Simpson, *et al*., 2012:267). Therefore, the researcher may need to overcome this pitfall by carrying out semi-structured interviews with the chosen research subjects. This may enable the researcher to give clarity to certain questions which may not be clear to the respondents.

CRITICAL SUCCESS FACTORS FOR BUSINESS PERFORMANCE OF MSMES

Before attempting to highlight the critical success factors, it is important to define the concepts of success and critical success factors. Previous researches indicate that the definition of the term success in small businesses is not easy (Simpson, Tuck & Bellamy, 2004:483; Simpson *et al*., 2012:272-275). This may be due to the fact that success has different meaning to different people and depends on the context of the person defining it.

Simpson, *et al*. (2004:483) and Simpson, *et al*. (2012:276) indicate that the enterprise's success is defined by its growth and profitability. Watson, Nicholas, Watson, Hogarth-Scott and Wilson (1998) argue that a business is successful if it continues to trade and is said to have failed if it ceases trading. However, this definition of success is criticised by Simpson, *et al*. (2004) who argue that the decision to continue or cease trading may be influenced by other factors besides profitability and viability of the business.

Lack of consensus on the definition of success among researchers makes the study of success in small businesses difficult. The several meanings of success suggest that the best measure of success is as defined by the owner of the small business. For small business success to be relevant an entrepreneur should define the success of his or her business and not an outsider (Simpson, *et al*., 2004:484; Simpson, *et al*., 2012:272-275). This suggests that a performance measurement framework needs to satisfy the aspirations of the owners and promote success as defined by the owners. However, this study defines success as measured by business growth, profitability and the ability of the MSME to continue operating. The study assumes that the owners of MSMEs are rational investors whose business motive is to create and maximise their wealth.

Oakland (2003) defines critical success factors as those elements which should be examined to ensure effective management and attainment of organisational goals. Masocha and Charamba (2014:61) furthermore highlights that a key success factor is anything which enables an enterprise to get business. Tracy (2007) mentions that each industry has its own success factors. The literature reviewed in this study, seem to suggest that the performance of MSMEs is influenced by commitment of the owner-manager, business planning, management of information, strategies to manage revenue and costs, innovation, management of customers, management of suppliers, management of competitors, the enterprise's pool of resources, conformance to regulations and management of sources of finance. The following sections review each factor separately.

Commitment of the owner in the running of the company

Research suggest that MSMEs which have a family CEO tend to report high return on assets and return on investment when compared to enterprises where the CEO is not a family member and this return is even reduced where the family CEO is not the founder (Hansson, Liljeblom & Martikainen, 2011:404). Literature therefore seems to suggest that the owner of a business is likely to make decisions that result in long-term success and survival of the business. The management skills rather than technical skills and the growth motivation of founders is very important and are the leading factors in the growth, success and survival of an enterprise (Feindt, Jeffcoate & Chappell, 2002:53; Halabi, Barrett & Dyt, 2010:164). Therefore, the founder plays an important role in the performance of MSMEs. In addition to owner involvement, very small boards results in optimal performance in MSMEs (Coles, Daniel & Naveen, 2008; Guest, 2009).

Business planning

A business plan is an important ingredient for any organisation which seeks to succeed in its operations and therefore MSMEs are not an exception (Uddin & Bose, 2013:170). Planning enables the enterprise to develop, communicate, implement, and improve its strategy in order to achieve the organisation's performance objectives (Talib, Ali & Idris, 2014: 156). The business plan should focus on the needs of the enterprise's important stakeholders such as customers, suppliers, government regulators, employees, and the shareholders (Talib, *et al.*, 2014).

Management of information

Management of key and strategic information is very important for any organisation (Bengesi & Roux, 2014:154). For performance measurement to be possible, an enterprise should have in place a mechanism for gathering and analysing performance measures (Turner, Bititci & Nudurupati, 2005). Lakhal, Pasin and Limam (2006) highlight that gathering and analysing information has an effect on business performance. Performance measurement may therefore be regarded as a component of information management (Turner, *et al.*, 2005). However, information management systems for MSMEs should be very simple since MSMEs lack adequate IT related resources needed for a complex information management system (Alattar, Kouhy & Innes, 2009).

Management of revenue

Revenue management is an area of management accounting which focuses on improving revenue and managing the enterprise's limited capacity in order to enhance the chances of long term survival (Ng, Harrison & Akroyd, 2013:98). This is done by offering an affordable product or service at the right time and which meets the needs of the customers (Ng, *et al.*, 2013: 93). Revenue management involves collecting and analysing data to get information on the trends, habits, and demand patterns of customers in order to assess customer profitability (Ng, *et al.*, 2013:98).

Management of costs

Cost management results in efficient operation of business. For example, cost cutting measures applied by a struggling company during a scheme of business reorganisation can result in performance improvement and therefore recovery of the business (Smith & Graves, 2005; Alfaro, Ortiz & Poler, 2007:641; Laitinen, 2011:63). Cost control is also considered a critical success factor by Feindt, *et al.* (2002:61-62). Biggart, Burney, Flanagan and Harden (2010:3) assert that one of the primary means of improving an enterprise's profitability is to control costs, mainly inventory and store expenses. Inventory management will consist of managing shrinkage through in-store audits (Ng, *et al.*, 2013:98). Therefore, literature review from several authors seem to point to the fact that cost management is a very important success factor for MSMEs in the retail sector.

Improvement of business processes

Management of processes is very important for any organisation which seeks to achieve higher performance (Chikweche, 2015). Process management involves the organisation's management, evaluation, and improvement of key processes in order to produce quality output (Talib, *et al.*, 2014:157). Laitinen (2011:63) argues that in a scheme of business reorganisation, improving efficiency of business processes results in best performance in the long term. In order for MSMEs to succeed, there is a need for them to measure the most important and critical business processes (Alfaro, *et al.*, 2007:642). Measuring the performance of a process makes tracking of the current process performance possible and therefore gives room for process improvement where the performance of the process is found to be unacceptable. Therefore, it may be necessary to identify performance measures useful in monitoring and controlling business processes.

Innovation

Innovation is a requisite for sustainable long-term business performance. The success and survival of an enterprise will depend on its innovation capability (Talke, Salomo & Kock, 2011; Al-Ansari, Pervan & Xu, 2013). Studies established a positive relationship between business performance of MSMEs and the extent of innovation (Keskin, 2006; Otero-Neira, Lindman & Fernández, 2009; Kotey, 2014). However, other researchers found a negative or no relationship between business performance and the level of innovation (Freel, 2000). An innovative enterprise is one which constantly seeks new ideas that result in new products and ways of doing business (Shirokova, Vega & Sokolova, 2013:177). This would be critical for MSMEs considering that they face a shortage of resources. Shirokova, *et al.* (2013) further argue that MSMEs need to develop new abilities, entrepreneurial orientation, entrepreneurial culture, and entrepreneurial mind-set in order to survive and grow especially when faced with a constraint of resources. Masocha and Charamba (2014) identify constant innovation as a critical factor for SMEs to successfully compete with large enterprises. They posit that this innovation should focus on marketing strategies, internal processes, and maximising delivery of customer benefits and satisfaction.

Management of customers

In order for an enterprise to become competitive and therefore succeed, there is a need to improve customer service (Alfaro, *et al.*, 2007:641). Most studies, if not all, on performance measurement have a customer perspective. This seems to suggest that these researches have a unanimous view that customer management is a key factor in the business performance of enterprises. Therefore, the customer should be a key factor in performance measurement (Tucker & Pitt, 2009:408; Talib, *et al.*, 2014:156).

Enterprises which have a successful growth usually have close contact with their customers and are committed to quality of products and services (Feindt, *et al.*, 2002:53). The enterprise should develop a close and trusted relationship with its customers for it to achieve a higher performance (Azmat & Samaratunge, 2009; Azmat & Samaratunge, 2013:383; Shi & Yu, 2013:1309) and this can be done through a process of networking (Taipale-Erävala, Heilmann & Lampela, 2014:30). Therefore, it is plausible that the importance of developing a relationship with customers can never be over emphasised.

Customer management should aim at developing customer loyalty and trust. Customer loyalty will lead to customer retention which is critical for the success of any enterprise (Azmat & Samaratunge, 2013:383). A loyal customer will always buy from the enterprise even if there are better alternative goods or services offered by the enterprise's competitors (Tucker & Pitt, 2009). Therefore, the MSMEs should be customer focused and concentrate on satisfying customers so as to retain current customers and acquire new customers leading to higher market performance (Laukkanen, Nagy, Hirvonen, Reijonen, & Pasanen, 2013:514).

Management of suppliers

A critical review of performance measurement frameworks seems to suggest that management of suppliers is not highlighted to a very large extent as a critical success factor for business performance in MSMEs. For example, the most common performance measurement frameworks, the Balanced Scorecard Card by Kaplan and Norton (1992) and the Results Determinant Framework by Fitzgerald, Johnson, Brignall, Silvestro and Vos (1991) do not consider suppliers in their perspectives. Supplier management is one of the important drivers of financial performance (Quesada & Gazo, 2007:9; Rajagopal, 2010; Shi & Yu, 2013:1309). Enterprises should develop a relationship with their suppliers for them to achieve a competitive advantage and long term organisational performance (Temtime & Solomon, 2002; Tari, Molina & Castejon, 2007; Talib, *et al.*, 2014:156).

Management of competitors

Management of the enterprise's competitors is necessary for the success and long term survival of the enterprise (Miles, 2012). MSMEs should not focus on their customers and suppliers only but should place equal importance on their competitors as well if they are to gain competitive advantage in the business environment (Matanda & Ndubisi, 2009:385). Management of competitors by the enterprises involves knowledge of who the competitors are and their business operations (Masocha & Charamba, 2014:62). The enterprise should aim to offer unique and better products than competitors if it is to survive in the market place (Nieman & Nieuwenhuizen, 2009). Masocha and Charamba (2014) further argue that the enterprise should identify the weaknesses and gaps left by the competitor and capitalise on the weaknesses and gaps. Therefore, it may be concluded from review of literature that a performance measurement framework for MSMEs may also need to factor in to some extent the performance of the MSMEs' competitors.

The performance of competitors can be factored into the performance measurement framework for MSMEs through benchmarking. Tucker and Pitt (2009) view benchmarking as a process of searching the industry's best practice against which the enterprise's performance will be measured.

The enterprise's pool of resources

The resource-based theory suggests that the performance and growth of an enterprise is driven by the resources possessed by that enterprise (Atristain, 2010; Barney, Ketchen & Wright, 2011; Hsu, Tan, Laosirihongthong & Leong, 2011:6632; Tan, Smyrnios & Xiong, 2014:327). An enterprise's capability depends to a greater extent on its pool of tangible and intangible assets (Ratnatunga, Gray & Balachandran, 2004). These resources are financial, physical, human, organisational, and technological (Laosirihongthong & Leong, 2011:6632). Therefore, the performance of enterprises in the same industry is different because of the differences in the resources and capabilities they possess (Kohlbacher & Gruenwald, 2011:709; Shirokova, *et al.*, 2013:179). Previous studies indicate that in order for an enterprise to be competitive and hence successful, there is a need for it to acquire unique resources which cannot be replicated or substituted by competitors (Caldeira & Ward, 2003; Edelman, Brush & Manolova, 2005; Davidsson, Achtenhagen & Naldi, 2007; Blackburn, Hart, & Wainwright, 2013:10, Shirokova, *et al.*, 2013:179; Shi & Yu, 2013:1295; Kotey, 2014:329). However, it is important to compare the MSME's performance to its physical capability since most MSMEs have limited resources which can be the cause for poor performance (Taticchi & Balachandran, 2008:152).

Conformance to regulations

MSMEs should conform to regulatory authorities in order for them to succeed in their business endeavours. Examples of regulatory authorities are government departments like tax authorities, standards setting, and monitoring boards, environment monitoring boards and local authorities. A considerable number of MSMEs in Zimbabwe face closure every year when the Zimbabwe Revenue Authority fines them heavily for failing to comply with various tax laws of the country (Mashiri & Mazhindu; 2013; Nyamwanza, Mavhiki, Mapetere, & Nyamwanza, 2014). Therefore compliance to the country's trade regulations could ensure that an enterprise avoids unnecessary penalties and operate profitably leading to its long term success.

Management of sources of finance

Non-availability of finance is always cited as one of the reasons contributing to the failure of MSMEs (Olawale & Garwe, 2010; Nyoni, 2012, Masocha & Charamba, 2014; Ramukumba, 2014). The fact that MSMEs cannot easily get finance from financial institutions (Ramukumba, 2014:25) means that MSMEs should establish good relationships with their suppliers so as to get goods on credit (Nyoni, 2012; Ramukumba, 2014). Therefore it is plausible that a performance measurement framework should identify the drivers of this relationship and measure the extent of the relationship. Measurement of the extent of the relationship would enable MSMEs to monitor the relationship from time to time for the benefit of the enterprise.

Mere access to financial resources is not enough condition for success of an enterprise. The financial resources may need to be utilised effectively and efficiently in order to result in a successful enterprise. Some MSMEs with adequate resources have often been found to misuse those resources leading to failure of the enterprise (Stokes & Wilson, 2006; Ramukumba, 2014:25). On the other end, Masocha and Charamba (2014:61) found that foreign owned MSMEs in South Africa performed better than local MSMEs despite the fact that local MSMEs had better access to financial resources than MSMEs owned by foreigners. There is an argument for a shift in focus from challenges related to lack of financial resources to viability of the business, entrepreneurial abilities of the owner/managers and use of modern management techniques to enhance performance and survival of MSMEs (Ramukumba, 2014:20).

KNOWLEDGE GAPS

The review of literature has identified the following knowledge gaps:

- There is no consensus among researchers on the most ideal performance measurement framework in general and more specifically for MSMEs.
- None of the performance measurement frameworks reviewed seem to propose the performance measurement of MSMEs in the retail sector from the perspective of their critical success factors.
- There seem not to be any literature identifying the most important critical success factors for MSMEs in the retail sector in general and more specifically in a developing country such as Zimbabwe.

THEORIES UNDERPINNING THIS STUDY

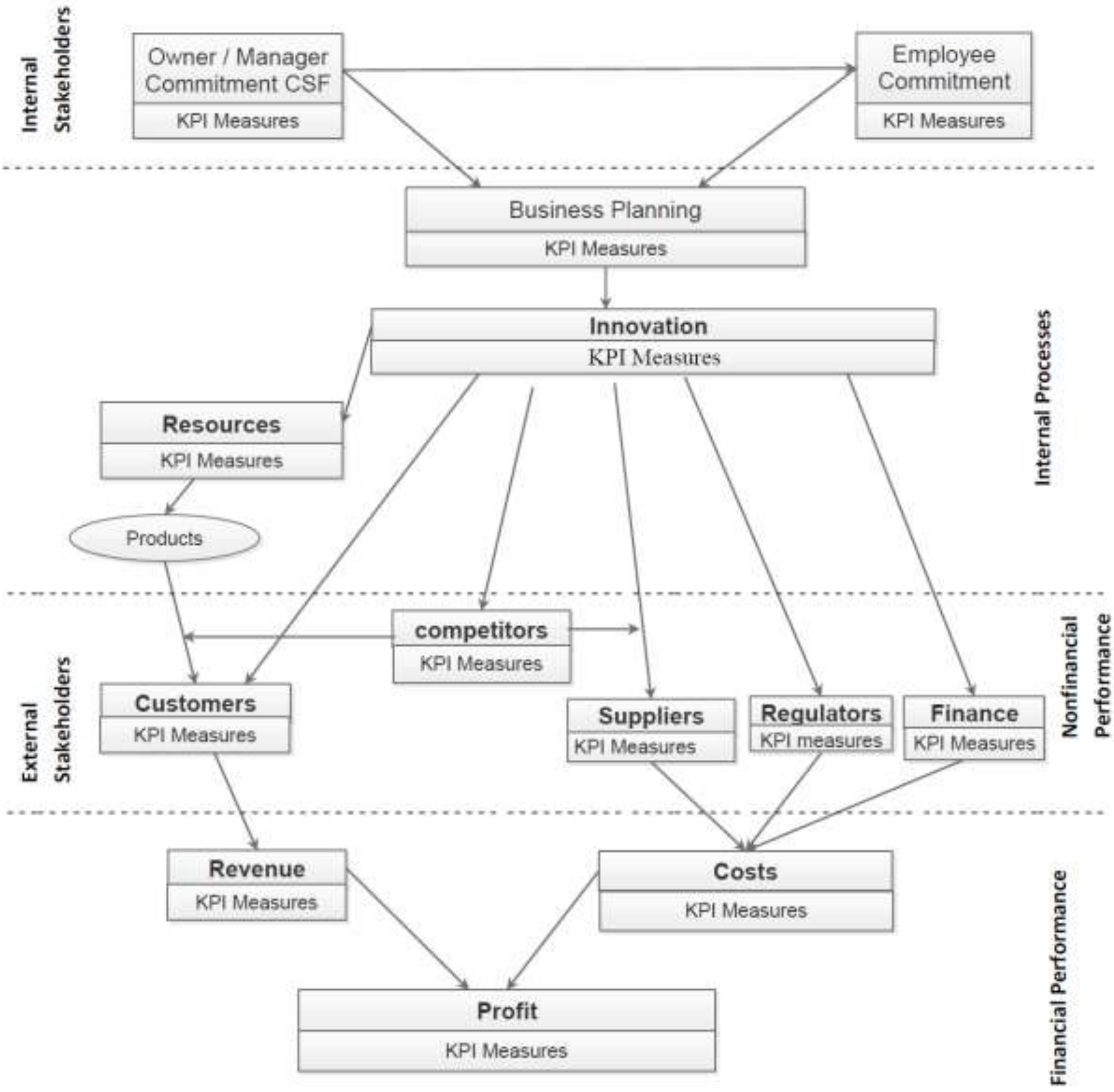
The study is based on the broad organisational theory and three other theories namely goal theory, system theory and stakeholder theory. Each theory captures an important phenomenon of the enterprise in as far as performance measurement is concerned. The use of more than one theory in a single study where a single theory would not capture the phenomena under study is suggested by Henri (2004). Therefore, the focus on the three theories may result in a holistic performance measurement framework for an enterprise.

Conceptual framework for the study

The conceptual framework in Figure 1 proposes that owner-manager commitment and commitment of employees may be pre-requisites for the success of MSMEs. Owner-manager commitment and commitment of employees may result in proper business planning which may be a product of both employee and employer involvement. Business planning ought to focus on innovation as a cardinal critical success factor. Innovation should focus on critical success factors such as acquisition of unique resources, management of customers, management of suppliers, management of employees, management of regulators, management of sources of finance, and management of competitors.

Management of stakeholders as critical success factors may result in generation of higher revenue and minimisation of costs which may lead to high profits and therefore survival of the enterprise.

Figure 1. Proposed performance measurement framework based on literature review



The framework proposes that key performance indicator measures should be identified for each critical success factor. Therefore measurement of performance should focus on the KPIs which are derived from the critical success factors. Such a thrust may give a holistic performance measurement for the enterprise.

CONCLUSION

A performance measurement framework is an important tool in measuring performance of MSMEs and monitoring their business processes. The performance measurement framework may be based on the critical success factors of the retail MSMEs and the key performance indicators of the critical success factors. Furthermore the performance measurement needs to consider and balance the needs of all the stakeholders and consider the financial and non-financial performance of MSMEs.

The conceptual study managed to identify from the review of literature the critical success factors for the performance of MSMEs. A performance measurement framework was then proposed on the basis of the critical success factors identified in the literature. A follow up empirical study will be carried out in future studies to assess the extent to which these critical success factors are measured by the MSMEs in the retail sector in Zimbabwe. The applicability of the proposed performance measurement framework will also be tested on MSMEs in the retail sector in Zimbabwe.

REFERENCES

African economic outlook, 2014, Zimbabwe (www.africaneconomicoutlook.org accessed on 18 May 2015).

Al-Ansari, Y., Pervan, S. & Xu, J. 2013, "Innovation and business performance of SMEs: the case of Dubai", *Education, Business and Society: Contemporary Middle Eastern Issues,* vol. 6, no. 3/4, pp. 162-180.

Alattar, J.M., Kouhy, R. & Innes, J. 2009, "Management accounting information in micro enterprises in Gaza", *Journal of Accounting & Organizational Change,* vol. 5, no. 1, pp. 81-107.

Alfaro, J., Ortiz, A. & Poler, R. 2007, "Performance measurement system for business processes", *Production Planning & Control,* vol. 18, no. 8, pp. 641-654.

Al-Matari, E.M., Al-Swidi, A.K. & Fadzil, F.H.B. 2014, "The Measurements of Firm Performance's Dimensions", *Asian Journal of Finance & Accounting,* vol. 6, no. 1, pp. 24-49.

Amir, A.M. 2011, "The indirect effects of PMS design on Malaysian service firms' characteristics and performance", *Asian Review of Accounting,* vol. 19, no. 1, pp. 31-49.

Atristain, C. & Rajagopal 2010, "Conceptual Perspectives on Organizational Performance and Competitiveness of SMEs in Mexico", *Journal of Transnational Management,* vol. 15, no. 4, pp. 322-349.

Azmat, F. & Samaratunge, R. 2009, "Responsible entrepreneurship in developing countries: understanding the realities and complexities", *Journal of Business Ethics,* vol. 90, no. 3, pp. 437-452.

Azmat, F. & Samaratunge, R. 2013, "Exploring customer loyalty at bottom of the pyramid in South Asia", *Social Responsibility Journal,* vol. 9, no. 3, pp. 379-394.

Barney, J.B., Ketchen, D.J. & Wright, M. 2011, "The future of resource-based theory revitalization or decline?" *Journal of Management,* vol. 37, no. 5, pp. 1299-1315.

Bengesi, K.M. & Le Roux, I. 2014, "Strategic Entrepreneurial Response of Small and Medium Enterprises in Developing Economies", *International Journal of Business and Management,* vol. 9, no. 2, pp153-165.

Biggart, T.B., Burney, L.L., Flanagan, R. & Harden, J.W. 2010, "Is a Balanced Scorecard Useful in a Competitive Retail Environment?", *Management Accounting Quarterly,* vol. 12, no. 1, pp. 1-12.

Blackburn, R.A., Hart, M. & Wainwright, T. 2013, "Small business performance: business, strategy and owner-manager characteristics", *Journal of Small Business and Enterprise Development,* vol. 20, no. 1, pp. 8-27.

Block, E., 2013. SMEs key to Zim's economic survival. Zimbabwe Independent, 28 June 2013. [online]. Available at http://www.theindependent.co.zw /.../msmes-key-to-zims-economic-survival/ (accessed on 1 July 2013).

Caldeira, M.M. & Ward, J.M. 2003, "Using resource-based theory to interpret the successful adoption and use of information systems and technology in manufacturing small and medium-sized enterprises", *European Journal of Information Systems,* vol. 12, no. 2, pp. 127-141.

Chalmeta, R., Palomero, S. & Matilla, M. 2012, "Methodology to develop a performance measurement system in small and medium-sized enterprises", *International Journal of Computer Integrated Manufacturing,* vol. 25, no. 8, pp. 716-740.

Chennell, A., Dransfield, S., Field, J., Fisher, N., Saunders, I. & Shaw, D. 2000, "OPM: a system for organisational performance measurement", *Proceedings of the performance measurement–past, present and future conference,* Cambridge, 19-21 July 2000

Chikweche, T., 2015, "Independent Retail and Grocery Shops in Zimbabwe: Survival and Demise in a Crisis and Post-Crisis Era", Journal of Marketing Channels, 22:2, 121-136

Chinamasa, P., 2013.The 2014 National Budget Statement. Towards an Empowered Society and a Growing Economy, Presented to the Parliament of Zimbabwe on 19 December, 2013

Chong, H.G. 2008, "Measuring performance of small-and-medium sized enterprises: the grounded theory approach", *Journal of Business and Public Affairs,* vol. 2, no. 1, pp. 1-10.

Cocca, P. & Alberti, M. 2010, "A framework to assess performance measurement systems in SMEs", *International Journal of Productivity and Performance Management,* vol. 59, no. 2, pp. 186-200.

Cocca, P., Alberti, M. (2008), “PMS maturity level and driving forces: an empirical investigation in Italian SMEs”, *Proceedings of the 15th International Annual EurOMA Conference “Tradition and Innovation in Operations Management*”, Groningen, 15–18 June, 2008.

Coles, J.L., Daniel, N.D. & Naveen, L. 2008, "Boards: Does one size fit all?", *Journal of Financial Economics*, vol. 87, no. 2, pp. 329-356.

Confederation of Zimbabwe Industries, 2014. Manufacturing sector survey (www.czi.co.zw accessed 18 May 2015)

Davidsson, P., Achtenhagen, L., & Naldi, L. 2007. What Do We Know About Small Firm Growth? In S. Parker (Ed.), The Life Cycle of Entrepreneurial Ventures, *International Handbook Series on Entrepreneurship* Vol. 3, pp. 361–398, Springer US.

Edelman, L.F., Brush, C.G. & Manolova, T. 2005, "Co-alignment in the resource–performance relationship: strategy as mediator", *Journal of Business Venturing*, vol. 20, no. 3, pp. 359-383.

Feindt, S., Jeffcoate, J. & Chappell, C. 2002, "Identifying success factors for rapid growth in SME e-commerce", *Small Business Economics*, vol. 19, no. 1, pp. 51-62.

Fitzgerald, L., Johnson, R., Brignall, S., Silvestro, R. and Vos, C. (1991), Performance Measurement in Service Businesses, CIMA, London.

Frazer, L., Weaven, S and Grace, D., 2012. Survival of the fittest: The performance of franchised versus independent small business during economic uncertainty and recovery, Griffith University.

Freel, M.S. 2000, "Do small innovating firms outperform non-innovators?", *Small Business Economics*, vol. 14, no. 3, pp. 195-210.

Garengo, P., Biazzo, S. & Bititci, U.S. 2005, "Performance measurement systems in SMEs: a review for a research agenda", *International journal of management reviews*, vol. 7, no. 1, pp. 25-47.

Goh, S.C. 2012, "Making performance measurement systems more effective in public sector organizations", *Measuring Business Excellence*, vol. 16, no. 1, pp. 31-42.

Gomes, C.F. & Yasin, M.M. 2011, "A systematic benchmarking perspective on performance management of global small to medium-sized organizations: An implementation-based approach", *Benchmarking: An International Journal*, vol. 18, no. 4, pp. 543-562.

Halabi, A.K., Barrett, R. & Dyt, R. 2010, "Understanding financial information used to assess small firm performance: An Australian qualitative study", *Qualitative Research in Accounting & Management,* vol. 7, no. 2, pp. 163-179.

Hansson, M., Liljeblom, E. & Martikainen, M. 2011, "Corporate governance and profitability in family SMEs", *The European Journal of Finance,* vol. 17, no. 5-6, pp. 391-408.

Hegazy, M. & Hegazy, S. 2012, "The development of key financial performance indicators for UK construction companies", *Accounting, Accountability & Performance,* vol. 17, no. 1, pp. 49-78.

Henri, J (2004),"Performance measurement and organizational effectiveness: bridging the gap", *Managerial Finance,* Vol. 30 no. 6, pp. 93 - 123

Hsu, C., Tan, K.C., Laosirihongthong, T. & Leong, G.K. 2011, "Entrepreneurial SCM competence and performance of manufacturing SMEs", *International Journal of Production Research,* vol. 49, no. 22, pp. 6629-6649.

Hvolby, H.H. and Thorstenson, P. A. 2000 "Performance Measurement in Small and Medium Sized Enterprises" 3rd International Conference on Stimulating Manufacturing Excellence in SMEs (Proceedings) 17-19 April 2000, Coventry University, Coventry. pp324- 332.

Kanyenze, G., Kondo, T., Chitambara, P., & Martens, J. 2011,"Beyond the enclave: Towards a pro-poor and inclusive development strategy for Zimbabwe". Harare, Zimbabwe: Weaver Press

Kaplan, R.S. & Norton, D.P. 2001, "Transforming the balanced scorecard from performance measurement to strategic management: Part I", *Accounting horizons,* vol. 15, no. 1, pp. 87-104.

Kaplan, R.S. & Norton, D.P. 1992, "The Balanced Scorecard – Measures that Drive Performance The Balanced Scorecard — Measures", *Harvard business review,* vol. 70, no. 1, pp. 71-79.

Kelliher, F. & Reinl, L. 2009, "A resource-based view of micro-firm management practice", *Journal of Small Business and Enterprise Development,* vol. 16, no. 3, pp. 521-532.

Keskin, H. 2006, "Market orientation, learning orientation, and innovation capabilities in SMEs: An extended model", *European Journal of Innovation Management,* vol. 9, no. 4, pp. 396-417.

Kohlbacher, M. & Gruenwald, S. 2011, "Process ownership, process performance measurement and firm performance", *International Journal of Productivity and Performance Management,* vol. 60, no. 7, pp.709-720.

Kotey, B. 2014, "Small business innovation in the hostile environment of Australia's drought stricken rural communities", *Australasian Journal of Regional Studies,* vol. 20, no. 2, pp. 325-351.

Kueng, P., Meier, A., and Wettstein, T. Computer-based Performance Measurement in SME's: Is there any option? *In Proceedings of the International Conference on Systems Thinking in Management,* Australia, 2000, pp318- 323

Laitinen, E.K. 2011, "Effect of reorganization actions on the financial performance of small entrepreneurial distressed firms", *Journal of Accounting & Organizational Change,* vol. 7, no. 1, pp. 57-95.

Laitinen, E.K. 2002, "A dynamic performance measurement system: evidence from small Finnish technology companies", *Scandinavian journal of management,* vol. 18, no. 1, pp. 65-99.

Lakhal, L., Pasin, F. & Limam, M. 2006, "Quality management practices and their impact on performance", *International Journal of Quality & Reliability Management,* vol. 23, no. 6, pp. 625-646.

Laukkanen, T., Nagy, G., Hirvonen, S., Reijonen, H. & Pasanen, M. 2013, "The effect of strategic orientations on business performance in SMEs", *International Marketing Review,* vol. 30, no. 6, pp. 510-535.

Linn, M. 2007, 'The importance of managing strategically'', The Bottom Line, Vol. 20 No. 4, pp. 167-71.

Mashiri, E., & Mazhindu, K. (2013). Effectiveness of presumptive tax system in Zimbabwe: Case of ZIMRA Region one. Research Journal of Finance and Accounting, 4(7), 114-120.

Masocha, R. & Charamba, M. 2014, Challenges And Key Success Factors Of African Descent Foreign-Owned SMES In The Eastern Cape Province Of South Africa: A Case Of Selected Towns, Mediterranean Journal of Social Sciences, 5(4), 59-69.

Matanda, M.J. & Ndubisi, N.O. 2009, "Market orientation, supplier perceived value and business performance of SMEs in a Sub-Saharan African nation", *Journal of Enterprise Information Management,* vol. 22, no. 4, pp. 384-407.

McAdam, R. 2000, "Quality models in an SME context: a critical perspective using a grounded approach", *International Journal of Quality & Reliability Management,* vol. 17, no. 3, pp. 305-323.

McGreal, C. (2007), ‘‘The Zimbabwean shopper walks through the empty shelves of a store in Harare’’, The Guardian, www.guardian.co.uk/world/2007/jul/18/zimbabwe (accessed 15 May 2015).

Miles, S. 2012, "Stakeholder: Essentially contested or just confused?", *Journal of Business Ethics,* vol. 108, no. 3, pp. 285-298.

Mudavanhu,V., Bindu, S., Chigusiwa, L. & Muchabaiwa, L. 2011, “Determinants of small and medium enterprises failure in Zimbabwe: A case study of Bindura,” International Journal of Economics Research

Mufudza, T., Jengeta, M.& Hove, P. 2013 ,"The usefulness of strategic planning in a turbulent economic environment: a case of Zimbabwe during the period 2007-2009", Business Strategy Series, Vol. 14 Iss 1 pp. 24 – 29.

Myles, A . 2010. “In These Economic Times: Strategies For Strengthening Small Businesses”. State University: Mississipi.

Neely, A. 2005, "The evolution of performance measurement research: developments in the last decade and a research agenda for the next", *International Journal of Operations & Production Management,* vol. 25, no. 12, pp. 1264-1277

Neely, A.D., Adams, C. & Kennerley, M. 2002, *The performance prism: The scorecard for measuring and managing business success,* Prentice Hall Financial Times London.

Neely, A., Adams, C. & Crowe, P. 2001, "The performance prism in practice", *Measuring business excellence,* vol. 5, no. 2, pp. 6-13.

Neely, A., Gregory, M. & Platts, K. 2005, "Performance measurement system design: a literature review and research agenda", *International Journal of Operations & Production Management,* vol. 25, no. 12, pp. 1228-1263.

Ng, F., A. Harrison Julie & Akroyd, C. 2013, "A revenue management perspective of management accounting practice in small businesses", *Meditari Accountancy Research,* vol. 21, no. 2, pp. 92-116.

Nieman, G. & Nieuwenhuizen, C. 2009, Entrepreneurship: A South African Perspective (2nd Ed.). Pretoria: Van Schaik

Nyamwanza, T., Mavhiki, S., Mapetere, D. & Nyamwanza, L. 2014, "An Analysis of SMEs’ Attitudes and Practices Toward Tax Compliance in Zimbabwe", *SAGE Open,* vol. 4, no. 3, pp.1-6.

Nyoni, S. Minister of Small and Medium Enterprises, 2012. Discussion on the contribution of micro enterprises to the Zimbabwean economy. [Interview] (Personal communication, 10 September 2012, Harare).

Nyoni S. (2002): Small, Micro & Medium Enterprises (SMMEs), Policy & Strategy Framework. Republic of Zimbabwe.

Oakland, J. S. 2003, *Total quality management: text with cases*. London: Routledge

Olawale, F. & Garwe, D. 2010, "Obstacles to the growth of new SMEs in South Africa: A principal component analysis approach", *African Journal of Business Management,* vol. 4, no. 5, pp. 729-738.

Otero-Neira, C., Lindman, M.T. & Fernández, M.J. 2009, "Innovation and performance in SME furniture industries: An international comparative case study", *Marketing Intelligence & Planning,* vol. 27, no. 2, pp. 216-232.

Quesada, H. & Gazo, R. 2007, "Methodology for determining key internal business processes based on critical success factors: A case study in furniture industry", *Business Process Management Journal,* vol. 13, no. 1, pp. 5-20.

Rajagopal, C.A. 2010, "Supply chain management and financial performance: literature review and future directions", *Journal of Transnational Management,* vol. 15, no. 4, pp. 322-349.

Ramukumba, T. 2014, "Overcoming SMEs Challenges through Critical Success Factors : A Case of SMEs in the Western Cape Province , South Africa", *Economic and Business Review,* vol. 16, no. 1, pp. 19-39.

Ratnatunga, J., Gray, N. & Balachandran, K.R. 2004, "CEVITA™: the valuation and reporting of strategic capabilities", *Management accounting research,* vol. 15, no. 1, pp. 77-105.

Reserve Bank of Zimbabwe, 2007. Monetary Policy Review Statement.

Shi, M. & Yu, W. 2013, "Supply chain management and financial performance: literature review and future directions", *International Journal of Operations & Production Management,* vol. 33, no. 10, pp. 2-2.

Shirokova, G., Vega, G. & Sokolova, L. 2013, "Performance of Russian SMEs: exploration, exploitation and strategic entrepreneurship", *Critical Perspectives on International Business,* vol. 9, no. 1, pp. 173-203.

Simpson, M., Padmore, J. & Newman, N. 2012, "Towards a new model of success and performance in SMEs", *International Journal of Entrepreneurial Behaviour & Research*, vol. 18, no. 3, pp. 264-285.

Srimai, S., Radford, J. & Wright, C. 2011, "Evolutionary paths of performance measurement: an overview of its recent development", *International Journal of Productivity and Performance Management,* vol. 60, no. 7, pp. 662-687.

Storey, J.J. & Westhead, P., 1994, Management Training in Small Firms: A Case of Market Failure. *Human Resource Management,* 7(1): 61-71

Taipale-Erävala, K., Heilmann, P., & Lampela, H. 2014 . Survival Competence in Russian SMEs in a Changing Business Environment. *Journal of East-West Business*, 20(1), 25-43.

Talib, H.H.A., Ali, K.A.M. & Idris, F. 2014, "Critical success factors of quality management practices among SMEs in the food processing industry in Malaysia", *Journal of Small Business and Enterprise Development,* vol. 21, no. 1, pp. 152-176.

Talke, K., Salomo, S. & Kock, A. 2011, "Top management team diversity and strategic innovation orientation: the relationship and consequences for innovativeness and performance", *Journal of Product Innovation Management,* vol. 28, no. 6, pp. 819-832.

Tan, C. S. L., Smyrnios, K. X., & Xiong, L. 2014, " What drives learning orientation in fast growth SMEs?". *International Journal of Entrepreneurial Behaviour & Research*, vol. 20, no. 4, pp. 324-350.

Tari, J.J., Molina, J.F. & Castejon, J.L. 2007, "The relationship between quality management practices and their effects on quality outcomes", *European Journal of Operational Research*, vol. 183, no. 2, pp. 483-501.

Taticchi, P. & Balachandran, K.R. 2008, "Forward performance measurement and management integrated frameworks", *International Journal of Accounting and Information Management,* vol. 16, no. 2, pp. 140-154.

Taticchi, P., Balachandran, K., Botarelli, M. and Cagnazzo, L. (2008), ''Performance measurement and management for small and medium enterprises: an integrated approach'', *Journal of Applied Management and Accounting Research*, Vol. 6 No. 2, pp. 57-72.

Taticchi, P., Balachandran, K. & Tonelli, F. 2012, "Performance measurement and management systems: state of the art, guidelines for design and challenges", *Measuring Business Excellence,* vol. 16, no. 2, pp. 41-54.

Taticchi, P., Tonelli, F. & Cagnazzo, L. 2010, "Performance measurement and management: a literature review and a research agenda", *Measuring Business Excellence,* vol. 14, no. 1, pp. 4-18.

Temtime, Z.T. & Solomon, G.H. 2002, "Total quality management and the planning behavior of SMEs in developing economies", *The TQM Magazine,* vol. 14, no. 3, pp. 181-191.

Tracy, B. 2007, *Eat that frog!: 21 great ways to stop procrastinating and get more done in less time,* Berrett-Koehler Publishers.

Tucker, M. & Pitt, M. 2009, "Customer performance measurement in facilities management: A strategic approach", *International Journal of Productivity and Performance Management,* vol. 58, no. 5, pp. 407-422.

Turner*, T.J., Bititci, U.S. & Nudurupati, S.S. 2005, "Implementation and impact of performance measures in two SMEs in Central Scotland", *Production planning & control,* vol. 16, no. 2, pp. 135-151.

Uddin, M.R. & Bose, T.K. 2013, "Factors Affect the Success of SME in Bangladesh: Evidence from Khulna City", *Journal of Management and Sustainability,* vol. 3, no. 3, pp. 166-173.

Waweru, N. & Spraakman, G. 2012, "The use of performance measures: case studies from the microfinance sector in Kenya", *Qualitative Research in Accounting \& Management,* vol. 9, no. 1, pp. 44-65.

Zeglat, D., AlRawabdeh, W., AlMadi, F. and Shrafat, F., 2012. Performance Measurement Systems: stages of development leading to success. International Journal of Contemporary Research in Business, 4(7), pp. 440-448.

Zimbabwe National Statistics Agency, 2012. Census 2012 National Report, Harare, Population Census Office.

Zimbabwe National Statistics Agency, 2014. Cental business register inquiry report, 2013

Zimbabwe Revenue Authority, 2014. Revenue performance report for the year ending 31 december 2014 (www.zimra.co.zw/ accessed on 16 May 2015

MAF002 A refined constructive operating lease capitalisation model considering new proposed lease accounting rules

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Abstract

This study develops a refined model used to capitalise off-balance sheet leases, namely operating leases accounted for using current lease accounting rules. Imminent changes to the accounting rules for leases will require both operating and finance leases to be reflected on an entity's balance sheet. Based predominantly on the constructive operating lease capitalisation method developed by Imhoff, Lipe and Wright, the refined model developed in this paper considers the impact of the new proposed accounting treatment for leases (in terms of ED/2013/6 – the revised lease accounting exposure draft released by the IASB and FASB in May 2013). It also incorporates aspects of current lease accounting rules not previously considered, namely provisions recognised in respect of the straight-lining of operating leases as well as onerous operating lease contracts. The refined model is developed in order to determine the impact that the capitalisation of operating leases will have on an entity's reported financial statement figures and ratios.

Key words: operating lease; off-balance sheet; lease capitalisation; straight-lining

INTRODUCTION

Leasing is a major business activity that many entities engage in across the globe supported by the fact that the worldwide leasing industry, represented by the top 50 countries, had an annual volume of $868 billion during 2012 according to White Clarke Group's Global Leasing Report[1] (White, 2014, p. 5). This represented an increase of 8.95% from 2011. Not only is leasing a major business activity but it is also a growing means of obtaining the use of an asset[2].

The report indicates that South Africa is the top ranked African country, by volume, with an annual leasing volume of $5.72 billion in 2012 – representing a 1.02% increase on 2011 and 1.49% of South Africa's gross domestic product (White, 2014, pp. 9,14). Leasing may therefore not only be an important business activity globally but also within the South African economy. This is due to the many benefits that leasing offers as opposed to buying

[1] Due to the widespread adoption of Hire Purchase (HP) as a source of finance for entities and HP being a major source of revenue for leasing companies, the White Clarke Group's Global Leasing Report includes HP figures in their reported leasing volume figures. In the report the word 'leasing' also refers to both leasing and HP.

[2] A lease is a contract whereby the owner of an asset (the lessor) gives another person (the lessee) the right to use the asset for a specified time in exchange for a specified payment. As such all lease agreements give the lessee the right to use an asset (which the lessor must provide) and create an obligation for the lessee to make future payments. A lease can therefore be likened to borrowing funds and buying an asset. As a result leasing provides entities with an alternative way of obtaining the use of an asset required to do business other than the conventional method of purchasing the asset, which is often performed by way of a loan.

an asset, such as economies of scale or scope, increased flexibility, tax advantages, improved access to capital, reduced costs of upgrading equipment and improved risk sharing (SEC, 2005, p. 60).

However, due to the current accounting approach adopted by accounting standard setters for leasing activities which classifies leases as either finance leases or operating leases, many leases (those classified as operating leases) are not reflected on the statements of financial position (hereon referred to as balance sheet) of entities. This is despite the fact that the required payments under a non-cancellable lease agreement, regardless of its accounting classification, are considered an obligation similar to loan repayments[2]. A 2005 Securities Exchange Commission (SEC) report estimated that there was $1.25 trillion in non-cancellable future cash obligations (undiscounted) committed under operating leases that were not reflected on the balance sheets of United States (US) issuers but rather disclosed in the notes to the financial statements (SEC, 2005, p. 64). It may therefore be that, despite the many benefits and reasons for leasing; this benefit of obtaining off-balance sheet financing is another reason why entities enter into operating leases. This aspect of leasing has attracted much attention and has been the focus of a significant number of research papers since the 1980s as outlined in the Literature Review[3] section. An important aspect of this research was to focus on the constructive capitalisation of operating (off-balance sheet) leases in order to determine the impact thereof on key financial statement figures and ratios. Despite the extensive prior research referred to, leasing is an under-researched area within the context of South Africa according to the researcher. This research paper therefore focuses on the development of a robust operating lease capitalisation model which forms part of a larger study wherein the model is applied to listed South African companies in order to analyse the impact of operating lease capitalisation and various ancillary pertinent aspects of leasing. This research is timely and particularly relevant in the context of the new proposed changes to lease accounting rules in terms of the International Accounting Standard Board (IASB) and Financial Accounting Standard Board's (FASB) exposure draft on leases (ED/2013/6) which proposes the capitalisation of all non-cancellable lease agreements entered into by lessees with a lease term of more than 12 months.

Therefore, the primary objective of this research paper is to build an appropriate operating lease capitalisation model, using company specific adjustments where possible, that considers the current and proposed accounting treatment of operating leases.

The remainder of this research paper comprises a review of appropriate literature and accounting rules in the next section, followed by a section detailing the model developed. Thereafter the final section concludes and highlights further areas of research.

[3] Examples of relevant research papers include Imhoff and Thomas (1988), Imhoff, Lipe and Wright (1991 & 1997), Ely (1995), Bennett and Bradbury (2003), Fulbier, Silva and Pferdehirt (2008), Jesswein (2009), Knubley (2010), Rauh and Sufi (2012) and Bratten, Choudhary and Schipper (2013).

LITERATURE REVIEW

Research on leasing has focused on a number of disparate areas; however, the main focus of this paper relates to the constructive capitalisation of operating leases. A review of prior leasing research indicated that capitalising operating leases has been performed for a variety of reasons. Sub-section 2.1 focuses on the operating lease capitalisation models used in prior research studies.

Furthermore, lease accounting has evolved and has been debated extensively over the past few decades. In sub-section 2.2 detail on the accounting rules relating to lease accounting and proposed changes thereto is provided.

Lease Capitalisation

A lease contract, regardless of its accounting classification, requires the lessee to make payment to the lessor in order to obtain the right to use the leased asset. This is in essence the same as the obligation that arises in terms of a loan whereby the funds borrowed need to be repaid in the future in terms of the loan agreement. Brigham and Daves (2010, p. 674), amongst others noted below, clearly support this view by way of the following succinct statement in their book in a section on the financial statement effects of leases: "leases should be regarded as debt".

Despite finance research papers (mentioned in this sub-section) as well as accounting literature and research (referred to in sub-section 2.2) advocating for many years that operating lease agreements should be capitalised, in order to correctly reflect the obligation and associated asset in respect of the lease, the capitalisation of all lease agreements has also been advocated by many other parties. This includes the authors of recognised finance texts, such as Damodaran (2001, p. 83) and Correia, Flynn, Uliana and Wormald (2011, p. 7.21), who assert that the obligation to make payments in terms of a lease is akin to the repayments, including interest, due on debt.

Furthermore, according to Young (1999, pp. 10,15), adjusting accounting operating profit and invested capital for operating leases is one of the most commonly proposed adjustments in order to determine economic value added (EVA™)[4]. Altman's original 1968 Z-Score failure prediction model was also revised to incorporate, amongst other reporting adjustments, the capitalisation of all non-cancellable leases that were not reflected as debt on the balance sheet (Altman, 2000, p. 25).

Based on the aforementioned literature and a non-cancellable lease being similar to a loan, capitalising off-balance sheet operating leases is necessary in order to recognise the obligation to make future lease payments. Sub-section 2.1.1 provides details on the lease capitalisation methods used in prior research

[4] EVA™ is a registered trademark of Stern Stewart & Company.

Lease Capitalisation Methods

The vast majority of research conducted requiring the capitalisation of operating leases has used the constructive capitalisation method developed by Imhoff, Lipe and Wright (1991 & 1997), referred to hereafter as the 'ILW method'. In their 1991 seminal paper Imhoff et al. discounted the future minimum lease payments disclosed in respect of operating leases using an estimate of the entity's incremental pre-tax borrowing rate in order to determine the unrecorded lease liability. An estimate of the remaining and total useful life of the leased asset was also required in order to estimate the accounting value of the unrecorded asset which, based on straight-line amortisation, would be less than the unrecorded liability[5].

The unrecorded asset ratio (ratio of leased asset to lease liability can be determined using the following formula presented by Imhoff et al. in Table 3 of their research paper (1991, p. 56):

$$Asset\ ratio = (RL \div TL) \times \{(PVA_{TL,i}) \div (PVA_{RL,i})\}$$

Where, $RL = remaining\ life\ of\ lease$

$TL = total\ life\ of\ lease$

$PVA_{TL,i} = present\ value\ of\ an\ annuity\ for\ TL\ at\ i\%$

$PVA_{RL,i} = present\ value\ of\ an\ annuity\ for\ RL\ at\ i\%$

$i\% = marginal\ borrowing\ rate$

The underlying assumptions of the asset ratio formula are that 1) leased assets are amortised on a straight-line basis, 2) the leased asset and lease liability are equal at the start of each lease, and 3) the leased asset and lease liability are both zero at the end of each lease. The difference between the unrecorded liability and unrecorded asset relating to operating leases results in an adjustment to equity (decrease) and deferred tax for accounting purposes. This arises from the lease expense recognised initially being less than the sum of the interest on the unrecorded lease liability and the amortisation on the unrecorded leased asset. The 1991 paper by Imhoff et al. assumed that the current year impact on profit was not material and therefore zero (1991, p. 59). In addition, five

[5] It is to be noted that from an economic perspective the leased asset's economic value would generally be greater than the associated liability value during the lease term due to the future economic benefits expected to be generated from the productive use of the leased asset. If this was not the case then an entity would not enter into a lease agreement. An alternative method advocated to determine the amortisation charge is present value amortisation (also known as economic or annuity depreciation) where the annual amortisation effectively increases over the lease term and equals the capital reduction in the lease liability – see study by Jennings and Marques (2013) who compare straight-line amortisation with present value amortisation. However, from an accounting perspective, based on the leased asset value equalling the lease liability at inception and straight-line amortisation, the leased asset's accounting value will always be less than the associated liability. Accounting value is important in the context of this research study, namely the impact of the constructive capitalisation of operating leases on annual financial statements prepared in accordance with GAAP and financial accounting ratios based thereon.

uniform assumptions were also made by Imhoff et al. when capitalising the operating leases for their sample of companies, namely: an interest rate of 10% was appropriate for each company; the average remaining life of operating leases was 15 years; all minimum lease payments were expected to occur at year end; the asset ratio equalled 70% (rule of thumb suggested by Imhoff et al.); and the effective tax rate was 40%. These assumptions were employed in order to isolate the impact of changes in any of the assumed variables and determine the impact of capitalising operating leases solely attributable to differences in the future minimum operating lease payments of the companies (Imhoff, et al., 1991, p. 61).

However, Imhoff et al. (1997) reconsidered some of these assumptions and provided evidence that the impact of capitalising operating leases on standard profitability measures such as operating income margin, return on assets (ROA) and return on equity (ROE) can be substantial as well as unpredictable in direction (1997, p. 31). The profit impact was determined by adding back the operating lease expense and deducting the interest on the unrecognised lease liability as well as the amortisation on the unrecognised leased asset. [As a result of the interest plus amortisation being greater than the operating lease expense in the initial years, profit will be lower when capitalising operating leases, while the opposite will occur in the latter years of the lease. Hence the impact on profit is unpredictable in direction as noted by Imhoff et al. as it can be negative or positive depending on the phase of the lease.] All these adjustments were performed on an after-tax basis. Furthermore, Imhoff et al. indicated that the overall net profit impact can be determined, without calculating the separate income statement adjustments, as the movement in equity (retained earnings) if the balance sheet impact in the current and comparative year has been determined (1997, p. 21). They also reconsidered the assumptions in their 1991 paper relating to the constant interest rate of 10% used and the average remaining life of 15 years assumed for operating leases. Two proxies were suggested as an appropriate entity-specific interest rate (lessee incremental borrowing rate), namely (Imhoff, et al., 1997, p. 17):

i. The interest rate implicit in the entity's capital (finance) leases – this may be disclosed or can be determined from required finance lease disclosures. Imhoff et al. used this method but noted that with operating leases more ownership risk remains with lessors, therefore a higher interest rate is most likely applicable for operating leases compared to finance leases.
ii. The interest rate implicit in the entity's recognised debt – this may also be disclosed or can be determined as interest expense divided by the book value of all interest bearing debt. In this instance, Imhoff et al. note that interest expense must not be net of interest income.

Furthermore, Imhoff et al. used a method that was suggested in their 1991 paper to estimate the average remaining lease life for each company analysed in their 1997 paper. This involved dividing the future minimum lease payments due after five years by the minimum lease payments due in the fifth year and rounding the result up (they also suggested adding one or two years if the result was greater than fifteen) due to the fact that future minimum lease payments generally decline as lease agreements come to an end (Imhoff, et al., 1997, p. 17). This estimate was then used to further estimate the minimum lease payments due annually after five years (equal to the future minimum lease payments due after five years divided by this estimate), the discounted lease liability as well as the asset ratio.

The ILW method was based on the operating lease disclosures required under US GAAP (FAS 13) whereby the future minimum operating lease payments due in each of the next five years must be disclosed together with the aggregate of lease payments due thereafter. However, in terms of International Accounting Standard (IAS) 17 paragraph 35 the total of future minimum lease payments due later than one year and not later than five years after year-end are required to be disclosed as a lump sum (IASB, 2012, p. A646). Fulbier, Silva and Pferdehirt (2008, p. 127) therefore used a geometric degression model to convert the total amount disclosed in terms of IAS 17 for future minimum lease payments due later than one year and not later than five years after reporting date into annual lease payments that decline at a constant rate. The model calculated a constant degression factor (*dg*) which ensured that the minimum lease payment (*MLP*) of the next period equalled the prior period *MLP* multiplied by *dg*. Furthermore all of the *MLPs* calculated using the degression model for the four year period (after one year and not later than five years from reporting date) sum to equal the total amount disclosed for the same period. However, other researchers (e.g. Bennett and Bradbury (2003, p. 106) and Branswijck and Longueville (2011, p. 282)) followed a simplified approach of dividing the lump sum future minimum lease payments by the specified time period to get an equal annual lease payment. The geometric degression model used by Fulbier et al. is considered superior and more accurate as future minimum lease payments generally decline in future years as lease contracts expire. This is supported by de Villiers and Middelberg (2013) who used the ILW method incorporating the degression model used by Fulbier et al. when analysing the impact of constructive capitalisation within South Africa[6].

Beattie, Edwards and Goodacre (1998), together with Fulbier et al. (2008) and Durocher (2008), made a number of other entity-specific adjustments when capitalising operating leases using the ILW method and restating reported figures for each entity in their sample whenever possible (e.g. average remaining lease life, tax rates, discount rates). This results in the calculation of a far more accurate lease liability and leased asset for each entity in respect of off-balance sheet operating leases. These entity-specific adjustments have not been considered in many other research studies which mainly used the uniform assumptions used by the original ILW method to determine the unrecognised operating lease liability and associated asset. Cornaggia, Franzen and Simin (2013, p. 348) argued that an entity-specific discount rate should not be used as it gives entities with more debt the benefit of higher discount rates (i.e. lower liability values); however, this is not considered appropriate as a higher discount rate correctly incorporates the higher risk

[6] Listed South African companies also report in terms of International Financial Reporting Standards issued by the IASB, most notably IAS 17 for leases.

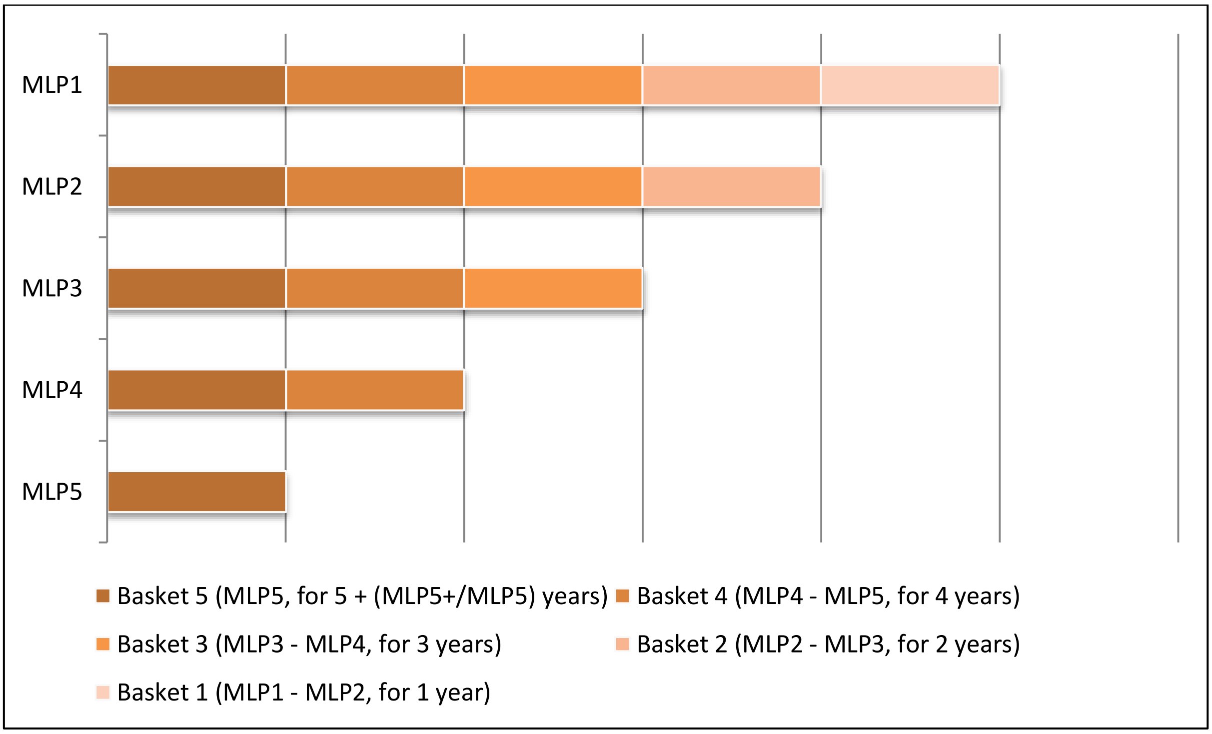
associated with more debt (financial risk). Essentially the lease payments would correctly include a greater interest component due the higher risk a lessor is exposed to when compared to leasing to another entity with lower levels of debt. It is however acknowledged that the lessor holds a put option (i.e. the right to sell the leased asset if the lessee does not pay the required lease rental) which also has a bearing on the level of risk borne by the lessor and is based on the type of asset leased. The extent of this risk is largely dependent on the specialised nature of the leased asset and will also be factored into the interest rate charged by the lessor; however, this cannot be determined based on financial statement disclosures.

Furthermore, Fulbier et al. (2008) did not determine the leased asset from the aggregate of the discounted future lease payments (total lease liability) as per the ILW method but rather from the present value of the future minimum lease payments split into five contract baskets, each with a different remaining life from one year up to five or more years. Fulbier et al. (2008, p. 130) identified each basket "by using MLP_t - MLP_{t+1} but assume(d) that the fifth basket ha(d) equal annual payments to MLP_5 with a remaining lifetime of 5+ (MLP_{5+}/MLP_5)". The difference between the *MLPs* (i.e. MLP_t - MLP_{t+1}) in two consecutive years was assumed to be the *MLP* of lease contracts coming to an end at *t* (i.e. the first of the two consecutive years). The ILW method's asset ratio is subsequently applied separately to each basket before aggregating the results to determine the value of the leased asset. Fulbier et al. (2008, p. 130) note the following in support of this adapted method:

- Consistency with the general assumption of constant lease payments when applying the ILW constructive capitalisation method;
- Information in the annual financial statements is used more effectively through capturing the full range of remaining lives of the underlying lease contracts; and
- Shorter lease lives are incorporated leading to a more conservative approach (i.e. higher leased asset values due to the shorter lease lives) and this consequently avoids an overstated impact on equity which increases with increasing remaining lease lives.

Graph 2A illustrates how the abovementioned lease contract baskets were determined by Fulbier et al. Although this adapted method has not been extensively used in subsequent research it is nonetheless considered a merited improvement to the ILW method due to it conceptually improving the accuracy with which the leased asset value is determined.

Graph 2A: Illustration of Fulbier et al.'s (2008) lease contract baskets



A second ad hoc constructive capitalisation method used by bond-rating agencies is noted by Imhoff et al. (1993, p. 341) and Dhaliwal, Lee and Neamtiu (2011, pp. 179-180) – this method recognises a lease liability and asset equal to the current period operating lease expense multiplied by eight. Further, although no impact on net income is assumed, interest expense on the lease liability is estimated to equal one-third of the operating lease expense while the remaining two-thirds are reclassified as depreciation (amortisation) expense relating to the leased assets. There is no theory or empirical evidence to support this method and research results by Imhoff et al. (1993, pp. 346-347) indicate that it overestimates the operating lease liability in comparison to the ILW method. Ely (1995, pp. 402-403) used a similar method whereby the lease liability was estimated to equal the future minimum lease payment disclosed in respect of the first year multiplied by a constant of six – this constant is derived using present-value formulas assuming a lease term of 25 years and an interest rate of 10%. Subsequent research has found that both of these rule of thumb heuristic methods (multiplying by a constant of eight or six) overstate the lease liability in comparison to the ILW method (e.g. Beattie, Goodacre and Thomson (2000, p. 1203), Bennett and Bradbury (2003, p. 108) and Jesswein (2009, p. 87)). Another heuristic approach was evaluated by Jesswein (2009, p. 86) which multiplied "all current and future lease obligations by two-thirds, with one-third of each year's payment representing the financing cost of leases for that year". Although this method understated the lease liability relative to the more sophisticated ILW method, it was found to have a higher correlation with the ILW method results and also give a more accurate approximation of the lease liability when compared to the other two rule of thumb heuristic methods (Jesswein, 2009, p. 87).

A further simplistic method was used by Grossman and Grossman (2010) whereby information pertaining to finance leases was utilised. They used a median ratio of the selected companies, obtained by dividing the present value of finance leases by the undiscounted amount disclosed in respect of those leases, equal to 67%. This constant median ratio was then applied to the undiscounted future minimum operating lease payments disclosed for all companies in the sample in order to determine the unrecognised operating lease liabilities. Grossman and Grossman noted that this method was a limitation of their study. (Grossman & Grossman, 2010, pp. 9,11)

Recent research performed by Bratten, Choudhary and Schipper (2013, p. 1194) confirmed the reliability of the ILW method by applying the method to disclosed finance lease payments for 565 entity-years. Bratten et al. discounted the finance lease payments at an implied interest rate and compared the result to the recognised finance lease obligations which proved the accuracy and reliability of the ILW method. Furthermore, the ILW method has been used extensively without any major adaptations (e.g. Bennett and Bradbury (2003), Duke and Hsieh (2006), Jesswein (2009), Bryan et al. (2010) and Branswijck and Longueville (2011)), confirming support of the underlying principles and assumptions as well as the accuracy of this method of constructively capitalising operating leases. The constructive capitalisation model developed in the next section is therefore based on the ILW method.

Lease Accounting

The current accounting treatment for leases, based on a risk and reward model classifying lease agreements as either finance leases or operating leases, was introduced by the FASB in 1976 as US GAAP (FAS 13: Accounting for Leases) and by the IASC (International Accounting Standards Committee, the predecessor body of the IASB) in 1982 (IAS 17: Accounting for Leases). This accounting treatment requires the capitalisation of all finance leases while information relating to operating leases is merely disclosed in the notes to the financial statements. (Joint International Working Group on Leasing, 2007)

The lease capitalisation debate for accounting purposes and the classification of lease agreements into finance leases and operating leases has been the focus of a vast amount of research over a number of decades[7]. Furthermore, the fact that operating leases are used extensively and substantially more than finance leases was confirmed by a 2005 SEC report (SEC, 2005, p. 64) that estimated, based on empirical research and an estimated population of 10,100 US issuers, the undiscounted cash flows committed under operating leases to be almost 28 times more ($1.25 trillion) than the estimated undiscounted cash flows committed under capital (finance) leases ($45.1 billion). Based on these findings, the SEC recommended that the FASB, together with the IASB, re-examine lease accounting.

[7] Examples of relevant research papers include Imhoff and Thomas (1988), El-Gazzar and Jaggi (1997), Durocher (2008), Imhoff, Lipe and Wright (1993), Ely (1995), Beattie, Gooadacre and Thomson (2000), Bratten, Choudhary and Schipper (2013), Cornaggia, Franzen and Simin (2013), Knubley (2010) and Schipper (2007).

Prior to the 2005 SEC report, two special reports were released by the G4+1 group in 1996 and 1999 (a group that consisted of representatives from Australia, Canada, New Zealand, the United Kingdom, the United States, and the IASC). Essentially the two G4+1 special reports proposed that all leases be capitalised, as operating leases also give rise to assets and liabilities, and that the associated liabilities and assets should generally be recorded at the present value of the minimum payments required in terms of the lease. (Joint International Working Group on Leasing, 2007)

Sub-section 2.2.1 provides greater detail on the current accounting treatment for leases while section 2.2.2 examines the proposed new changes to lease accounting.

Current Lease Accounting Rules

South African companies are required to report results in terms of the International Financial Reporting Standards (IFRS) issued by the IASB. Under the existing IFRS for leases, IAS 17, leases are classified as either finance or operating leases; whereby a lease is classified as a finance lease if it "transfers substantially all the risks and rewards incidental to ownership of an asset", and an operating lease is any "lease other than a finance lease" (IASB, 2012, p. A638). Essentially the focus of IAS 17 is on identifying if a lease is economically similar to a purchase transaction, in which case it is accounted for as a finance lease.

Finance leases are capitalised with a leased asset and lease liability reflected on the balance sheet of the lessee. In contrast operating leases are not capitalised with the periodic lease payment expensed by lessees (generally on a straight-line basis).

This current accounting treatment for finance and operating leases has attracted criticism due to the fact that it does not entirely meet the needs of users of financial statements (IASB, 2013, p. 8). Accordingly, subsequent to the proposals by the two G4+1 special reports to capitalise all leases, the IASB and the FASB initiated a joint project in 2006 to develop a new accounting approach for leasing activities that would address the issues raised above.

Accounting Provisions Previously Ignored

The literature reviewed in sub-section 2.1 relating to operating lease capitalisation revealed that two accounting provisions have previously been ignored when constructively capitalising operating leases. Depending on the terms of the operating lease agreement and circumstances, these provisions could potentially result in liabilities that are already recognised for operating leases under the current accounting rules as follows:

- **Operating lease straight-lining provisions:** Paragraph 33 of IAS 17 requires lease payments under an operating lease to be recognised as an expense on a straight-line basis (IASB, 2012, p. A646). As a result thereof straight-lining provisions are generally created when lease payments escalate annually in terms of the operating lease agreement.

- **Onerous operating lease contract provisions:** If an operating lease agreement is classified as an onerous contract in terms of IAS 37 then a provision (liability) must be recognised for the present obligation under the contract as required by paragraph 66 (IASB, 2012, p. A969). An onerous contract is defined in paragraph 10 of IAS 37 as "a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it" (IASB, 2012, p. A961).

Both of the abovementioned provisions are effectively a liability that is recognised in respect of future minimum operating lease payments disclosed in the notes. Therefore, if these provisions are ignored when constructively capitalising operating leases, as has been the case with prior research, a portion of the liability in respect of these future lease payments will be double counted and distort results. These provisions may not be material or materially distort analyses; however, this has not previously been considered and as such cannot be assumed to be immaterial. It is also suggested that the straight-lining provision may potentially be material especially in the case of retailers who enter into substantial long-term lease agreements for prime retail space which may include relatively high fixed escalation clauses in excess of inflation. Both of these provisions have been incorporated into the revised operating lease capitalisation model developed in the next section.

Proposed Lease Accounting Changes

Subsequent to the joint project initiated by the IASB and the FASB in 2006, the organisations released an exposure draft (ED/2010/9) during 2010 proposing a new accounting approach for lessees based on a right-of-use model. This proposed the capitalisation of all operating leases for lessees. Knubley (2010) and de Villiers and Middelberg (2013), amongst others, present an overview of this exposure draft; however, no further details thereof are noted in this paper as it was subsequently withdrawn after feedback thereon was obtained. Although the feedback indicated general support for the proposed recognition of a lease liability and leased asset for all leases, contrary views on certain issues prompted the withdrawal of ED/2010/9 (IASB, 2013, pp. 9-10).

However, a revised exposure draft (ED/2013/6) was released in May 2013 by the IASB and the FASB. The core principle of this exposure draft (new proposed standard) is "that an entity shall recognise assets and liabilities arising from a lease" (IASB, 2013, p. 13). The exposure draft classifies leases as either Type A or Type B leases based on the consumption principle (by the nature of the asset) and not as finance or operating leases (by the nature of the contract). However, based on feedback received and further deliberations, in August 2014 the IASB tentatively decided to follow a single lessee model essentially accounting for all leases as a Type A lease[8] (IASB, 2014, p. 10). Pertinent aspects of this new exposure draft, relating to Type A leases[9], are highlighted below:

- Lessees will be required to recognise a right-of-use asset and a lease liability for all leases with a non-cancellable lease term of more than 12 months. This asset and liability will generally be recognised at a value equal to the present value of the lease payments discounted at the rate the lessor charges the lessee or the lessee's incremental borrowing rate.
- The right-of-use asset will be amortised over the lease term (generally on a straight-line basis) and interest recognised on the lease liability which reduces when lease payments are made.
- The amortisation and interest charges are to be recognised separately in the income statement.

Essentially there is no major difference between the current accounting treatment for finance leases in terms of IAS 17 and the new proposed lease accounting treatment for Type A leases which both require a lease liability and leased asset to be recognised as well as the subsequent recognition of interest and depreciation (amortisation) charges. The new accounting treatment proposed by the IASB therefore follows the ILW method.

Summary

This literature review section focused on literature relating to the capitalisation as well as the accounting treatment of leases. In terms of the current accounting treatment, operating leases are not recognised on the face of the balance sheet but rather disclosed in the notes. The ILW lease capitalisation method developed by Imhoff et al. (1991 & 1997) was therefore developed to constructively capitalise the disclosed future minimum lease payments relating to operating leases. This method has proven to be accurate, although a subtle adjustment using a geometric degression model by Fulbier et al. (2008) was required in respect of certain aggregated minimum lease payments disclosed in terms of IAS 17. Incorporating company-specific adjustments also improved the accuracy of the ILW model. This adapted ILW method will be used as a starting point when developing a refined capitalisation model in the next section. The current accounting provisions recognised for operating leases in respect of onerous contracts and straight-lining of lease payments, not previously considered, will now also be considered when refining the ILW method.

MODEL DEVELOPMENT

The model used in this study was developed in Microsoft Excel and tested following these six steps:

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[8] In contrast the FASB tentatively decided to follow a dual approach which retains the current lease accounting classification of finance leases and operating leases but accounts for them in line with the accounting treatment for Type A and Type B leases proposed in the revised exposure draft. (IASB, 2014)

[9] As South African companies report results in terms of International Financial Reporting Standards (IFRS) issued by the IASB the remainder of the research report ignores Type B leases.

Step 1: Identifying required financial information

The first step in developing the model was identifying the financial information that needed to be captured for each company in order to calculate the unrecorded operating lease liability and associated asset. Furthermore all the financial information relating to figures and ratios that would be impacted by operating lease capitalisation were identified and incorporated into the model.

Step 2: Determining the unrecorded lease liability

In accordance with the ILW method, the operating lease liability was determined as the present value of the MLPs (minimum lease payments) discounted at the company's incremental pre-tax borrowing rate. Furthermore, in line with Imhoff et al. (1997) the applicable incremental borrowing rate for each company was determined based on the following two proxies:

i. The interest rate implicit in the company's finance leases which may be disclosed or determined from required finance lease disclosures.
ii. The interest rate implicit in the company's recognised debt which may be disclosed or determined as gross interest expense divided by the book value of all interest bearing debt.

As noted by Imhoff et al. (1997), a greater degree of ownership risk remains with lessors in respect of operating leases, therefore a slightly higher interest rate is likely more applicable for operating leases compared to finance leases and other recognised debt (although this may be mitigated by the nature of the assets and the benefits of retaining security over the assets that lessors possess in terms of such lease contracts). Nonetheless, when they provide reasonable results, these are considered the best proxies for an appropriate discount rate in light of the fact that the weighted average interest rate implicit in a company's portfolio of operating leases (as charged by the lessor) is not disclosed. However, this is considered in the model as the higher of the above two interest rate proxies will be used.

If an interest rate cannot be determined (i.e. if a company does not have any finance leases or recognised debt) or the results are unreasonably high or low[10] then the current South African prime lending rate will be used in line with de Villiers and Middelberg (2013, p. 661). The prime lending rate is used as it is the "benchmark rate at which private banks lend out to the public" (South African Reserve Bank, 2013). Although the discount rate is noted as a limitation due to the difficulty in establishing an appropriate company-specific rate, using a company-specific discount rate where possible is considered superior to using a blanket rate, such as the prime lending rate, for all companies as it differentiates between the varying risk profiles of the companies selected. Furthermore, the interest rate charged by lenders of other recognised forms of debt would be based on the overall risk of the

[10] An unreasonably high interest rate (e.g. 25%) or low interest rate (e.g. 3%) can result when using the two proxies suggested by Imhoff et al. (1997) due to the year end balances for finance lease liabilities and recognised debt being used in the proxy calculations as well as the aggregated and summarised nature of financial statement disclosures.

company, including consideration of off-balance sheet operating leases (Lightner, et al., 2013, p. 19).

A unique aspect of the model developed is the fact that a separate operating lease liability and associated asset was determined for property and non-property leases based on the MLPs in respect of each of these lease types. This was done to improve the accuracy of the operating lease capitalisation model as property leases generally have a longer lease term than non-property leases and the length of the lease term impacts on the determination of the unrecorded liability, leased asset and consequential adjustments.

Although IAS 17 currently does not require the split of MLPs between property and non-property, many companies disclose this split voluntarily as it provides users with useful information. If this information was not disclosed a further voluntary, yet common, disclosure was used to estimate the split of the aggregated MLPs between property and non-property. The disclosure used as proxy in this regard is the operating lease rental expense relating to property and non-property[11]. The aggregate MLPs disclosed (Total MLP) in respect of each period is then split between property and non-property as follows:

$$MLPs\ (property) = Total\ MLP\ \times \left(\frac{Operating\ lease\ expense\ (property)}{Total\ operating\ lease\ expense}\right)$$

$$MLPs\ (non\text{-}property) = Total\ MLP\ \times \left(\frac{Operating\ lease\ expense\ (non\text{-}property)}{Total\ operating\ lease\ expense}\right)$$

Where, $Total\ operating\ lease\ expense = Operating\ lease\ expense\ (property) + Operating\ lease\ expense\ (non\text{-}property)$

Thereafter, based on the required disclosures of IAS 17, the geometric degression model used by Fulbier et al. (2008) was incorporated into the model to convert the total amount disclosed in terms of IAS 17, for MLPs due later than one year and not later than five years after reporting date, into annual lease payments that decline at a constant rate over the four year period. Therefore, using Microsoft Excel's Goal Seek function, the model calculates a constant degression factor (*dg*) which ensures that the MLP of the next period equals the prior period MLP multiplied by *dg*. Furthermore a check ensures that the sum of all of the MLPs calculated using this degression model for the four year period equals the total amount disclosed for the same period.

[11] Although many entities provide voluntary information regarding the operating lease rental expense split between property and non-property for the benefit of the users of their financial statements, often this information is provided in order to comply with IAS 1 paragraph 97 which requires separate disclosure of the nature and amount of material income and expense items such as leasing charges (IASB, 2012, p. A481).

The average remaining lease life after five years from reporting date is estimated by the model as the aggregated MLPs due after five years divided by the MLP disclosed in respect of the fifth year with the result rounded up and another year added. This is in accordance with the ILW method and due to the fact that MLPs generally decline as lease agreements come to an end – this assumption is logical and sensitivity results by Imhoff et al. (1997, p. 17) demonstrated that changes in this assumption did not materially affect the estimation of the unrecorded liability. Based thereon, the MLP due in respect of each year after five years from reporting date (noted hereon after as MLP_{5+ILW}) equals the aggregated MLPs due after five years divided by the estimated average remaining lease life. Furthermore, it follows that the total average remaining lease life is five years plus the average remaining life after five years calculated in terms of this paragraph.

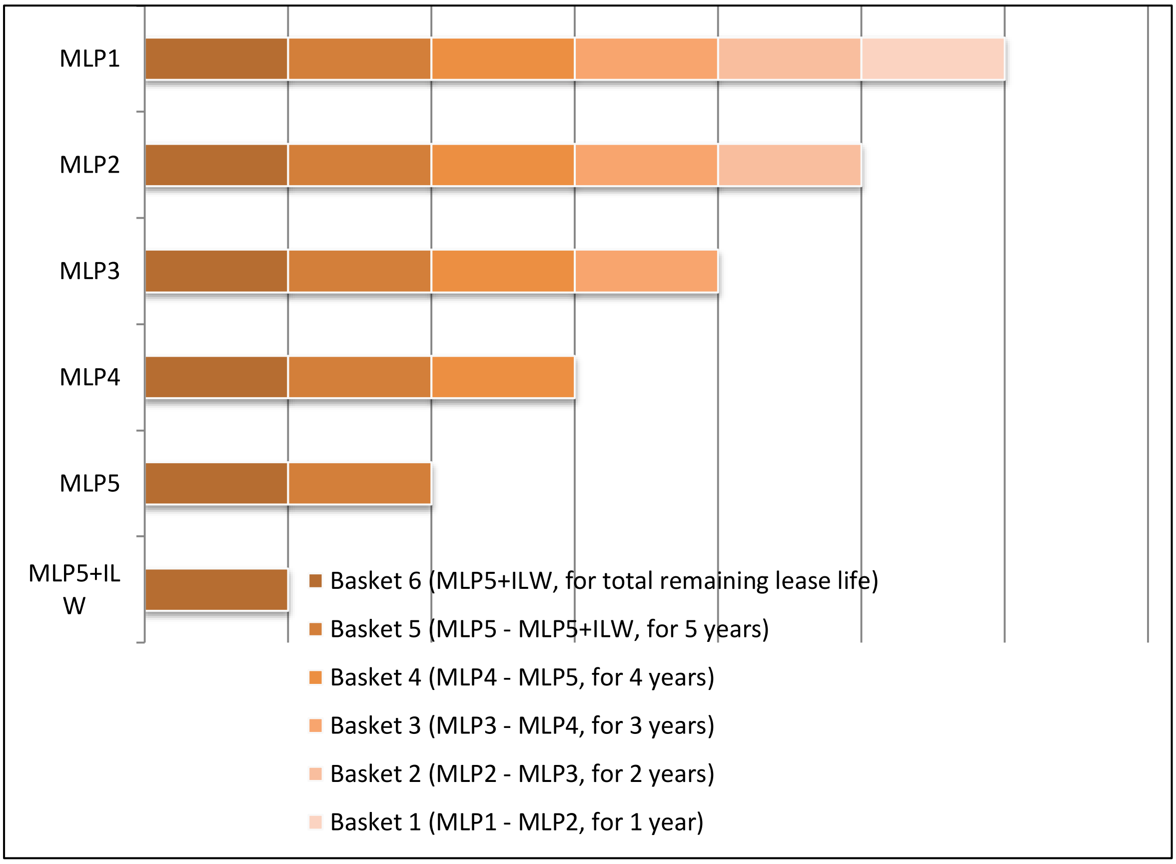
Based on the above inputs, namely the discount rate and the scheduled annual MLPs, the operating lease liability is calculated. However, a further unique aspect incorporated into this model is the deduction from the calculated operating lease liability of any straight-lining and onerous contract provisions that have already been recognised in respect of operating leases (refer sub-section 2.2.1.1) in order to determine the unrecorded portion thereof. If these provisions are not adjusted then the operating lease liability will be overstated as a portion thereof will be double counted.

Furthermore, the current and non-current portions of the unrecorded operating lease liability are determined for more accurate analyses of the impact of constructive operating lease capitalisation. The current portion is calculated as the present value of the MLP due within one year after the reporting date adjusted by any current portion of the straight-lining and onerous contract provisions, if applicable. The non-current portion is the difference between the unrecorded operating lease liability and the calculated current portion.

Step 3: Determining the unrecorded leased asset

The unrecorded leased asset was also determined in accordance with the ILW method using the asset ratio noted in sub-section 2.1.1. However, the ILW method is adapted to incorporate Fulbier et al.'s (2008) contract basket approach outlined in section 2.1.1. This approach determines baskets of MLPs with a basket being the difference between the MLPs in respect of two consecutive years which is assumed to be the lease contracts ending in the first of those two consecutive years. Fulbier et al.'s model comprised five baskets; however, this model will incorporate the addition of a sixth basket in order to conceptually improve the accuracy of the leased asset value and the incorporation of this basket approach into the ILW method. The fifth basket of Fulbier et al. comprised MLP_5 and was assumed to have a remaining life of five plus (MLP_{5+}/MLP_5) years; however, in this study the fifth basket will comprise MLP_5 minus MLP_{5+ILW} which has a remaining life of five years while the additional sixth basket will comprise MLP_{5+ILW} with a remaining life equal to the total average remaining lease life calculated in terms of Step 2 when determining the lease liability. Graph 3A illustrates this adapted approach to determining the six lease contract baskets.

Graph 3A: Illustration of adapted lease contract baskets



The ILW method is subsequently applied to each contract basket in order to determine the lease liability applicable to that basket. The asset ratio formula is then applied to the unrecorded liability calculated for each of the six contract baskets in order to determine each basket's leased asset. In calculating the asset ratio, 50% of the leased assets useful life (lease term) is assumed to have expired on average – a reasonable assumption based on the fact that entering into lease agreements will be a normal part of most business entities operations and occur on an annual basis. This percentage was suggested by Imhoff et al. (1991) and has been used in many subsequent research studies when constructively capitalising operating leases (e.g. Bennett and Bradbury (2003), Duke and Hsieh (2006), Fulbier et al. (2008), Branswijck and Longueville (2011) and Tai (2013)). Furthermore, the leased assets in respect of the six contract baskets are summed in order to determine the aggregate leased asset in respect of operating leases.

Despite using the ILW method asset ratio formula in the model, the result of the asset ratio formula was subsequently adjusted, where necessary, in order to take cognisance of any straight-lining and onerous contract provisions that may already be recognised in respect of operating leases. These provisions were dealt with as follows:

Straight-lining provisions:

As indicated in Step 2, straight-lining provisions impact on the determination of the unrecorded liability; however, they also impact the calculation of the unrecorded asset as indicated in Example 3.1.

Due to the recognition of a straight-lining lease provision, Table 3.1(b) indicates that the ILW method formula used to determine the unrecorded leased is no longer accurate as the percentages calculated in columns four and five are not equal. This difference is due to the lease liability decreasing at a slower rate when lease payments escalate (with more of the capital portion repaid at a later date) as opposed to a lease liability that is repaid in equal payments (a constant annuity and one of the assumptions built into the asset ratio formula of Imhoff et al. (1991)). If the lease payments did not increase and were constant, the percentages in columns four and five of Table 3.1(b) would be equal. However, with increasing lease payments, the actual asset value is now less than the asset value calculated using the asset ratio formula of the ILW method.

EXAMPLE 3.1: Analysis of Straight-lining Lease Provisions and the Leased Asset
The use of an asset is obtained for 5 years in terms of a non-cancellable operating lease agreement that requires an initial annual lease payment of R100 000, in arrears, which increases by 10% in subsequent years. Assuming the appropriate before tax discount rate is 12%, the present value of the lease payments equals R430 766.87 at inception of the lease [the amortisation table is presented in Table 3.1(a)]. If no other costs are incurred in connection with the lease then the leased asset also equals R430 766.87 at inception resulting in an annual straight-line amortisation charge of R86 153.37 (430 766.87 ÷ 5). Based thereon the lease liability and asset balances will be as presented in Table 3.1(b) at each year end.

Based on the total of the escalating lease payments due over the lease term of R610 510.00, the annual straight-lined operating lease expense to be recognised under the current accounting treatment in IAS 17 equals R122 102.00 (610 510.00 ÷ 5). Table 3.1(c) presents the straight-lining lease provision that will result as a consequnce of recognising the straight-lined lease expense, while the remaining tables and graph in the example are presented in support of the model developed to incorporate straight-lining provisions.

Table 3.1(a): Lease liability amortisation table

	Payment (R)	Interest (R)	Capital (R)	Balance (R)
Inception				430 766.87
Year 1	100 000.00	51 692.02	48 307.98	382 458.90
Year 2	110 000.00	45 895.07	64 104.93	318 353.97
Year 3	121 000.00	38 202.48	82 797.52	235 556.44
Year 4	133 100.00	28 266.77	104 833.23	130 723.21
Year 5	146 410.00	15 686.79	130 723.21	-
Total	610 510.00	179 743.13	430 766.87	

Table 3.1(b): Liability and asset balances under the lease

	Lease liability balance (R)	Leased asset balance (R)	Ratio of leased asset to lease liability	ILW method asset ratio formula result*
Inception	430 766.87	430 766.87	100.0%	100.0%
Year 1	382 458.90	344 613.50	90.1%	94.9%
Year 2	318 353.97	258 460.12	81.2%	90.1%
Year 3	235 556.44	172 306.75	73.1%	85.3%
Year 4	130 723.21	86 153.37	65.9%	80.7%
Year 5	-	-	-	-

*** The ILW method asset ratio is calculated using the following formula developed by Imhoff et al. (1991) and discussed in sub-section 2.1.1:**

$$\textit{Asset ratio} = (RL \div TL) \times \{(PVA_{TL,i}) \div (PVA_{RL,i})\}$$

Table 3.1(c): Lease payment, straight-lined lease expense and resulting straight-lining provision

	Lease payment (R)	Lease expense (straight-lined) (R)	Straight-lining provision balance (R)
Year 1	100 000.00	122 102.00	22 102.00
Year 2	110 000.00	122 102.00	34 204.00
Year 3	121 000.00	122 102.00	35 306.00
Year 4	133 100.00	122 102.00	24 308.00
Year 5	146 410.00	122 102.00	-
Total	610 510.00	610 510.00	

Table 3.1(d): Differences between asset values considering the asset ratio formula

	Actual leased asset balance (R)	Leased asset balance using asset ratio formula* (R)	Difference between actual and formula asset balances (R)	Straight-lining provision balance recognised (R)
Inception	430 766.87	430 766.87	-	-
Year 1	344 613.50	363 126.81	18 513.31	22 102.00
Year 2	258 460.12	286 679.95	28 219.83	34 204.00
Year 3	172 306.75	200 971.03	28 664.28	35 306.00
Year 4	86 153.37	105 555.06	19 401.69	24 308.00
Year 5	-	-	-	-

*** This balance is obtained by multiplying the lease liability balance (column two in Table 3.1(b)) by the asset ratio calculated in the final column of Table 3.1(b). Differences noted are due to rounding.**

Graph 3.1(a): Leased asset balance comparisons

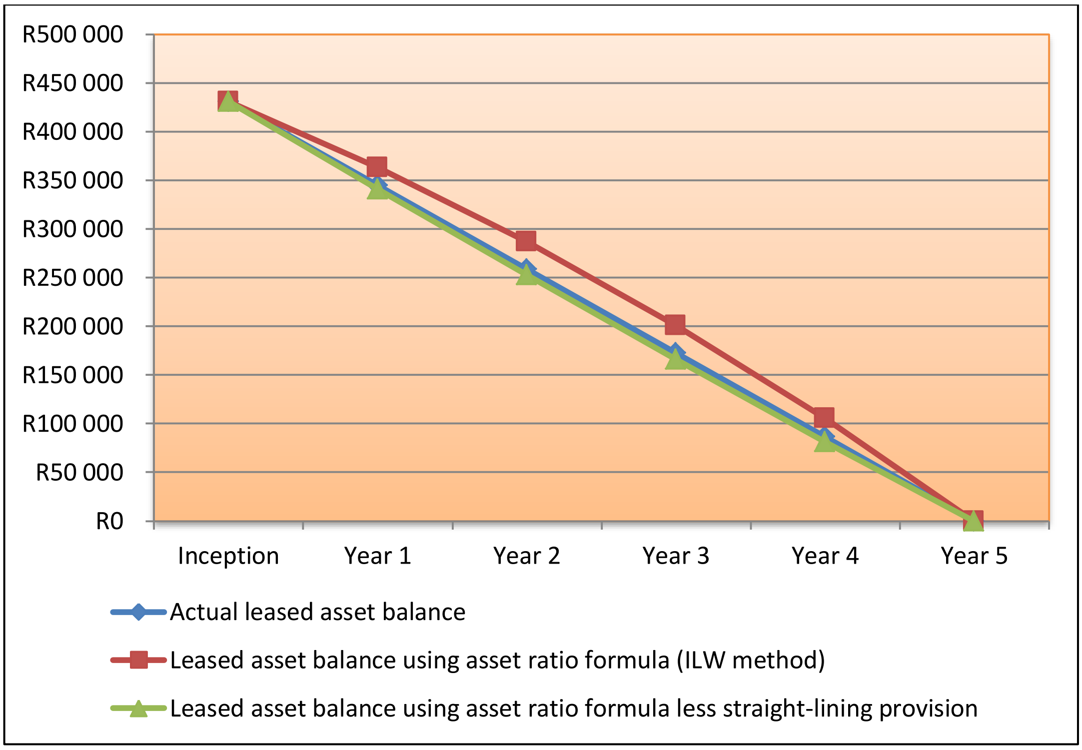


Table 3.1(d) calculates the value of the difference between these two asset values in the fourth column and, as can be seen, this difference is close, although not equal, to the recognised straight-lining provision. Therefore, although the ILW method's asset ratio does not correctly calculate the leased asset value in this context, the straight-lining provision can be subtracted from the result of the asset ratio formula in order to more accurately calculate and not overstate the leased asset balance. This is indicated in Graph 3.1(a) – the unadjusted leased asset value calculated using the asset ratio formula clearly overstates the asset value but when the straight-lining provisions is deducted it is more in line with the actual asset value. This adapted approach, of deducting the straight-lining provision from the leased asset value calculated using the asset ratio, was incorporated into the model and will result in the best estimate of the leased asset in light of the fact that an improved formula cannot be developed (as specific information relating to individual lease agreements and further details of the straight-lining provision are not disclosed).

Onerous contract provisions:
As indicated in Step 2 onerous contract provisions in respect of operating leases impact on the determination of the unrecorded liability. However, although an onerous contract provision is a likely indication that the leased asset is impaired if the future economic benefits expected to flow to the entity from the lease are less that the calculated asset value, such an impairment cannot be determined with any certainty as information in this regard is not required to be disclosed for onerous contracts. Therefore an adjustment is merely made to the lease liability in respect of onerous contract provisions, as noted in Step 2, and the impact thereof on leased assets is ignored and assumed to be immaterial.

Step 4: Determining the impact on equity, deferred tax and current year profit
The difference between the unrecorded lease liability and leased asset arising from capitalising MLPs results in an adjustment (debit) to equity (retained earnings) and deferred tax. This is due to the historic differences between the operating lease expense recognised and the charges (interest and amortisation) that would have been recorded if the operating lease had been capitalised and the lease liability exceeding the leased asset. The resulting debit to deferred tax is proportionately allocated between the recognised deferred tax asset and liability balances of each company.

The current South African corporate tax rate levied by the South African Revenue Services is utilised for the adjustment to deferred tax and all other tax adjustments in the model. The effective tax rate of each company is not utilised due to the distortion of items such as non-deductible expenditure or non-taxable income (permanent differences between accounting profit and taxable income) and unrecognised assessed tax losses.

In order to determine the income statement impact of capitalising operating leases on the most recently ended financial year, a series of balance sheet adjustments are utilised as outlined by Imhoff et al. (1997, p. 21). This is done in order to improve the accuracy of the relevant profit adjustments calculated, especially the amortisation amount relating to the unrecorded operating lease asset which is challenging to determine without detailed information relating to the leases. Therefore the same process as outlined in Step 2 and Step 3 is also followed for the prior year (using comparative figures in the financial statements reviewed) and the resulting equity adjustment calculated. The difference between the equity adjustment for the most recently ended financial year (REFY) and that of the prior year (PY) is then the aggregate after-tax impact on profit resulting from capitalising off-balance sheet operating leases in the REFY. This value is then grossed up to before tax and the amortisation charge relating to the operating leased asset capitalised is calculated as follows:

Impact on profit (before tax) for REFY (note i)	*xxx*
Less: Operating lease expense recognised in REFY reversed (note ii)	*(xxx)*
Plus: Interest expense on operating lease liability for REFY recognised (note iii)	*xxx*
Amortisation on leased asset in REFY recognised (balancing figure)	*(xxx)*

Notes:

i. *Impact on profit for any given year could be positive or negative depending on the phase of the lease and in this instance is defined as the equity adjustment for the REFY less the equity adjustment for the PY – an after-tax number which is then grossed up to before tax.*

ii. *The actual operating lease expense recognised for the REFY is not reversed as it could include contingent and cancellable operating lease payments made that were not disclosed as MLPs according to IAS 17 paragraph 35* (IASB, 2012, p. A646). *The operating lease expense relating to non-cancellable MLPs discounted and included in the operating lease liability is therefore determined as the MLPs disclosed in the PY that are due in respect of the first year after reporting date which is adjusted by a leasing expense increase factor to take into account any new leases entered into during the REFY (note: if this calculated figure is greater than the actual operating lease expense recognised for the REFY, then the latter is reversed and the calculated figure ignored as the reversal in any given year cannot be greater than the actual operating lease expense recognised in that year). This leasing expense increase factor is only applied if it is greater than 1 and is calculated as follows:*

$$Leasing\ expense\ increase\ factor = \frac{REFY\ actual\ operating\ lease\ expense}{PY\ actual\ operating\ lease\ expense}$$

iii. *Interest expense is calculated as the PY operating lease liability (prior to adjusting for any recognised provisions) multiplied by the interest rate used to discount the MLPs.*

Furthermore, no other adjustments are made with respect to straight-lining and onerous contract provisions when determining the profit impact resulting from operating lease capitalisation. Essentially by calculating the profit impact as the movement between the equity adjustments in respect of the REFY and the PY, and then reversing the operating lease expense and recognising interest and amortisation charges, all other aspects impacting profit are accounted for, including profit differences resulting from straight-lining and onerous contract provisions, as best possible based on the limited information available thereon.

Step 5: Adjusting the relevant financial statement figures

Once the balance sheet and income statement adjustments have been determined in accordance with Steps 2 to 4 then the relevant REFY and PY financial statement figures identified in Step 1 are adjusted in the model.

Step 6: Testing the model

In the last step the model was tested and refined by means of a pilot sample of South African listed companies. The pilot sample comprised five randomly selected companies (as noted in Table 3A), being one listed company selected from the following sectors of the Main Board of the JSE: General Industrials; Industrial Transportation; Food & Drug Retailers; General Retailers and Travel & Leisure. These five specific sectors were selected based on prior research (e.g. Imhoff et al. (1991), Beattie et al. (1998), Grossman and Grossman (2010) and Jennings and Marques (2013)) which indicated that companies in these five sectors are likely to make the most extensive use of operating leases.

As reflected in Table 3A, when constructively capitalising the future minimum operating lease payments for the pilot sample, the average increase in a company's total debt balance due to the unrecognised operating lease liabilities (after taking into account recognised straight-lining and onerous contract provisions relating to operating leases already recognised) was 45.6% with a standard deviation of 58.3%. Furthermore, the average increase in total assets due to the associated unrecognised leased assets was 15.1%[12] (standard deviation of 15.0%) while there was an average increase in net profit after tax of 3.3% (standard deviation of 8.1%). Despite the fact that the percentage changes relating to the Mr Price Group Limited are substantial and skew the calculated statistics, the balance sheet impact is nonetheless substantial with four of the five companies experiencing an increase in debt and asset balances in excess of 18% and 6% respectively in relation to reported balances. Overall, except for Grindrod Limited, the income statement is less affected than the balance sheet for the pilot sample of companies and as such balance sheet related financial statement ratios will be more affected than profitability ratios when constructively capitalising operating leases.

[12] The large difference noted between the increase in debt (average of 45.6%) and increase in assets (average of 15.1%) arising from operating lease capitalisation is due to the following two reasons:

1) The leased asset value is calculated using the asset ratio discussed in sub-section 2.1.1 and is therefore reflected at an amount which is less than the associated lease liability; and
2) The asset base of an entity is the sum of the entity's equity and debt, hence the average increase in assets is calculated using a higher denominator which results in a smaller percentage change when compared to the increase in debt calculation.

Table 3A: Impact of constructive capitalisation of operating leases on total debt, total assets and net profit – pilot sample

Company (Sector)	Unrecognised Lease Liability *percentage of* Total Recognised Debt	Unrecognised Leased Asset (amortised) *percentage of* Total Recognised Assets	Profit Adjustment (after tax) *percentage of* Reported Net Profit After Tax
Barloworld Limited (General Industrials)	5.6%	2.8%	1.7%
Famous Brands Limited (Travel & Leisure)	23.5%	6.7%	0.2%
Grindrod Limited (Industrial Transportation)	18.3%	8.5%	17.2%
Mr Price Group Limited (General Retailers)	148.5%	40.1%	1.0%
The Spar Group Limited (Food & Drug Retailers)	31.9%	17.4%	-3.7%

When considering the five sectors analysed in the pilot sample, the two retailers (Mr Price Group Limited and The Spar Group Limited) were the most impacted with respect to changes in debt and assets arising from operating lease capitalisation. This is most likely due to substantial property rental agreements entered into by retailers for their retail space which is the most material asset retailers require for their business operations.

CONCLUSION

Overview

This research paper developed a refined constructive lease capitalisation model based predominantly on the ILW method of constructively capitalising operating leases developed by Imhoff et al. (1991 & 1997). The revised model incorporates a number of unique aspects, most notably adjustments in respect of provisions recognised for the straight-lining of operating leases as well as onerous operating lease contracts in terms of current lease accounting rules that were not previously considered.

Limitations

The interest rate used to discount future minimum operating lease payments is noted as a limitation due to the difficulty in establishing an appropriate company-specific rate based on figures and related information disclosed within annual financial statements.

Immaterial straight-lining and onerous lease contract provisions are not disclosed by companies and these provisions may also be aggregated when disclosed, hence any such straight-lining or onerous contract provisions would not be identified and analysed when using the refined operating lease capitalisation model.

None of the aforementioned limitations adversely impact the research study to such an extent that the findings and conclusions drawn cannot be relied upon.

Further Research

The refined constructive lease capitalisation model developed and the preliminary analysis performed in this research can be applied to all JSE-listed companies in order to determine the impact of operating lease capitalisation on various sectors as well as the aggregate of all South African listed companies. The extent and various other aspects of leasing within South Africa can also be further analysed.

Research can be conducted to determine the extent to which liabilities are already recognised for future minimum operating lease payments through recognised provisions for the straight-lining of operating leases or onerous operating lease contracts.

Although the capitalisation of all non-cancellable leases is advocated based on the terms of such lease agreements and the associated increase in financial risk, it is questioned whether leases will continue to be used as extensively as they currently are due to the loss of the off-balance sheet status of operating leases based on the new proposed lease accounting rules. However, the other benefits of leasing an asset, as opposed to buying an asset, may nonetheless result in companies leasing to the same extent. This latter point is considered unlikely and it is rather suggested that the global leasing industry is likely to experience a substantial decrease in business activity due to the proposed change in lease accounting rules which is a further area of potential research.

LIST OF REFERENCES

Altman, E. I., 2000. Predicting financial distress of companies: Revisiting the Z-Score and ZETA(R) models. s.l.:s.n.

Beattie, V., Edwards, K. & Goodacre, A., 1998. The impact of constructive operating lease capitalisation on key accounting ratios. Accounting and Business Research, 28(4), pp. 233-254.

Beattie, V., Goodacre, A. & Thomson, S., 2000. Recognition versus disclosure: An investigation of the impact on equity risk using UK operating lease disclosures. Journal of Business Finance and Accounting, 27(9&10), pp. 1185-1224.

Bennett, B. K. & Bradbury, M. E., 2003. Capitalising non-cancelable operating leases. Journal of International Financial Management and Accounting, 14(2), pp. 101-114.

Branswijck, D. & Longueville, S., 2011. The financial impact of the proposed amendments to IAS 17: Evidence from Belgium and the Netherlands. Accounting and Management Information Systems, 10(2), pp. 275-294.

Bratten, B., Choudhary, P. & Schipper, K., 2013. Evidence that market participants assess recognized and disclosed items similarly when reliability is not an issue. Accounting Review, 88(4), pp. 1179-1210.

Brigham, E. F. & Daves, P. R., 2010. Financial Statement Effects. In: A. von Rosenberg, ed. Intermediate Financial Management. Ohio: South-Western Cengage Learning, pp. 672-674.

Bryan, S. H., Lilien, S. & Martin, D. R., 2010. The financial statement effects of capitalizing operating leases: Assessing the impact of the right-of-use model. CPA Journal, Issue August, pp. 36-41.

Cornaggia, K. J., Franzen, L. A. & Simin, T. T., 2013. Bringing leased assets onto the balance sheet. Journal of Corporate Finance, Volume 22, pp. 345-360.

Correia, C., Flynn, D., Uliana, E. & Wormald, M., 2011. Financial Management. 7th ed. Cape Town: Juta & Company Ltd.

Damodaran, A., 2001. Measuring Financing Mix. In: P. McFadden, ed. Corporate Finance: Theory and Practice. New York: John Wiley & Sons, pp. 81-88.

de Villiers, R. R. & Middelberg, S. L., 2013. Determining the impact of capitalising long-term operating leases on the financial ratios of the Top 40 JSE-listed companies. International Business and Economics Research Journal, 12(6), pp. 655-669.

Dhaliwal, D., Lee, H. S. & Neamtiu, M., 2011. The impact of operating leases on firm financial and operating risk. Journal of Accounting, Auditing and Finance, 26(2), pp. 151-197.

Duke, J. C. & Hsieh, S.-J., 2006. Capturing the benefits of operating and synthetic leases. Journal of Corporate Accounting & Finance, 18(1), pp. 45-52.

Durocher, S., 2008. Canadian evidence on the constructive capitalization of operating leases. Accounting Perspectives, 7(3), pp. 227-256.

El-Gazzar, S. M. & Jaggi, B. L., 1997. Transition period of mandated accounting changes - Timing of adoption and economic consequences: The case of SFAS No. 13. Journal of Business Finance and Accounting, 24(2), pp. 293-307.

Ely, K. M., 1995. Operating lease accounting and the market's assessment of equity risk. Journal of Accounting Research, 33(2), pp. 397-415.

Fulbier, R. U., Silva, J. L. & Pferdehirt, M. H., 2008. Impact of lease capitalization on financial ratios of listed German companies. Schmalenbach Business Review, Volume 60, pp. 122-144.

Grossman, A. M. & Grossman, S. D., 2010. Capitalizing lease payments: Potential effects of the FASB/IASB plan. CPA Journal, Issue May, pp. 6-11.

IASB, 2012. International Accounting Standard 1: Presentation of Financial Statements. In: International Financial Reporting Standards (Blue Book). London: IFRS Foundation, pp. A453-A492.

IASB, 2012. International Accounting Standard 17: Leases. In: International Financial Reporting Standards (Blue Book). London: IFRS Foundation, pp. A633-A652.

IASB, 2012. International Accounting Standard 37: Provisions, Contingent Liabilities and Contingent Assets. In: International Financial Reporting Standards (Blue Book). London: IFRS Foundation, pp. A951-A974.

IASB, 2013. Basis for Conclusions Exposure Draft ED/2013/6 Leases. London: IFRS Foundation.

IASB, 2013. Exposure Draft ED/2013/6 Leases. London: IFRS Foundation.

IASB, 2014. Leases (Project Update). London: IFRS Foundation.

Imhoff, E. A., Lipe, R. C. & Wright, D. W., 1991. Operating leases: Impact of constructive capitalisation. Accounting Horizons, 5(1), pp. 51-63.

Imhoff, E. A., Lipe, R. C. & Wright, D. W., 1997. Operating leases: Income effects of constructive capitalisation. Accounting Horizons, 11(2), pp. 12-32.

Imhoff, E. A., Lipe, R. & Wright, D. W., 1993. The effects of recognition versus disclosure on shareholder risk and executive compensation. Journal of Accounting, Auditing and Finance, 8(4), pp. 335-368.

Imhoff, E. A. & Thomas, J. K., 1988. Economic consequences of accounting standards: The lease disclosure rule change. Journal of Accounting and Economics, Volume 10, pp. 277-310.

Jennings, R. & Marques, A., 2013. Amortized cost for operating lease assets. Accounting Horizons, 27(1), pp. 51-74.

Jesswein, K. R., 2009. Analyzing creditworthiness from financial statements in the presence of operating leases. Academy of Accounting and Financial Studies Journal, 13(1), pp. 75-90.

Joint International Working Group on Leasing, 2007. History of Lease Accounting (Agenda Paper 2). London: IASB and FASB.

Knubley, R., 2010. Proposed changes to lease accouting. Journal of Property Investment & Finance, 28(5), pp. 322-327.

Lightner, K. M., Bosco, B., DeBoskey, D. G. & Lightner, S. M., 2013. A better approach to lease accounting: Fixing the shortcomings of the proposed rules. CPA Journal, Issue September, pp. 14-25.

Rauh, J. D. & Sufi, A., 2012. Explaining corporate capital structure: Product markets, leases and asset similarity. Review of Finance, Volume 16, pp. 115-155.

Schipper, K., 2007. Required disclosures in financial reports. Accounting Review, 82(2), pp. 301-326.

SEC, 2005. Report and Recommendations Pursuant to Section 401(c) of the Sarbanes-Oxley Act of 2002 On Arrangements with Off-Balance Sheet Implications, Special Purpose Entities, and Transparency of Filings by Issuers, s.l.: United States Securities and Exchange Commission.

South African Reserve Bank, 2013. Welcome to the South African Reserve Bank. [Online] Available at: http://www.resbank.co.za/pages/default.aspx [Accessed 18 November 2013].

Tai, B. Y., 2013. Constructive capitalization of operating leases in the Hong Kong fast-food industry. International Journal of Accounting and Financial Reporting, 3(1), pp. 128-142.

White, E., 2014. Global Leasing Report 2014, s.l.: White Clarke Group.

Young, D., 1999. Some reflections on accounting adjustments and economic value added. Journal of Financial Statement Analysis, 4(2), pp. 7-19.

MAF003 An analysis of corporate image as a factor that supports corporate green investment practices in Johannesburg Stock Exchange (JSE) listed companies

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Abstract

Green investment practices assist preservation of the company's image through shielding it from undesirable media reports plus consumer boycotts. Green investment practices also improve the company's image thereby enhancing the firm to acquire better business contracts in addition to developing broadened market bases. This paper examined the association involving corporate image and green investment practices in 100 South African CDP companies on the JSE using data gathered from the firm's 2012 sustainability reports and/or annual integrated reports. Chi-square tests indicated that corporate image influence green investment practices in JSE listed firms. In addition, a positive linear connection between corporate image and green investment practices in JSE listed firms was demonstrated. Therefore, investing in green activities is important to improve corporate green image. The study also generated associated green image drivers of JSE listed firms. In addition, corporate perceptions in relation to green image for JSE listed companies were also briefly discussed.

Keywords: Corporate image; Green investment practices; JSE listed firms; Carbon Disclosure Project (CDP); South Africa.

INTRODUCTION

Environmental damage as a result of firm activity has increased in recent years, but the public and/or society has also noticed such growing environmental issues (Robinson, Kleffner & Bertels 2011). Therefore, increased attention by corporate stakeholders, has also put pressure on companies to introduce expanded green investment activities thereby acknowledging their environmental responsibility. Thus nowadays, companies have begun to integrate green investment initiatives as a procedure which preserves their corporate image by engaging green stakeholder interests (Cormier & Magnan 2003). Hence, if firms are able to offer commodities which address stakeholder green-oriented requirements, then the same stakeholders become more favourable to the company's green commodities (Aerts, Cormier & Magnan 2006). Therefore, in the advent of this green economy based era, corporations are required to explore prospects such as green reputation generation which supports superior green product performance to strengthen the firm's brand (Patten & Trompeter 2003). As such, companies which pioneer in green investment programs have been identified to experience first-mover benefits in addition to improved corporate green image (Kruger & Saayman 2013). Hence, green image has empowered the company to create new markets and acquire competitive benefits whiles natural environment attributes have been preserved (Van den Berg, Labuschagne & Van den Berg 2013). Thus, facing the patterns of tough green-oriented conventions plus heightened stakeholder environmental awareness, corporations should not shirk their responsibilities, as such green-oriented patterns can be transformed into company green competences which spur increased green innovation plus improved firm green reputation(Patten 2002; Smith & Perks 2010). This paper examined whether corporate image influence corporate green investment practices in Johannesburg Stock Exchange (JSE) listed companies.

Hence, the main study question which motivates this research is: Does corporate image influence corporate green investment practices in Johannesburg Stock Exchange (JSE) listed companies? The objective of the research is, therefore, to explore if corporate image influence corporate green investment practices in Johannesburg Stock Exchange (JSE) listed firms. This study is important given increased green consciousness by corporate stakeholders who have become more responsive to firms which satisfy and meet their green requirements. Moreover, as fears concerning climate change increase, corporate activities persist to put a strain on global resources, therefore, green conscious stakeholders give more attention to corporations whom they can relate and share their green demands concerning environmental damage. Thus, green reputation has been perceived as a major issue to long-term business success. For example, corporate green image has been identified to determine share market value of the company (Cormier & Magnan, 2007) and influence public preparedness to forgive company misdemeanors (Cormier & Magnan 2003).

1. CONCEPTUAL MODEL

The section briefly analyse two main concepts of this study under the following headings: corporate green investment practices and then, corporate image.

1.1 Corporate green investment practices

The significance of the relationship involving financial issues plus natural environment has steadily heightened through examining both the economic and environmental perspectives. Kahlenborn (1999: 66) defines green investment as "….any form of financial investment whereby the investor pays attention to ecological goals as well as the traditional aims of investment. On the other hand, green investment can be understood as an investment that successfully counteracts negative influences on the environment, or serves to produce goods or services that have positive effects on the environment." Moreover, green investment can be defined as "….a form of investment where in addition to the traditional targets of an investor-liquidity, safety and performance-ecological criteria are also considered when making an investment decision." (Christian Armbruster in Ecologic 1998:99). Therefore, green investment practices includes, reduced-emission energy supply activities (green energy, green research and development); energy efficiency (hybrid vehicles, insulation and cooling models, energy saving mechanisms, waste management; smart grid technologies) and various forms carbon sequestration initiatives (agriculture, carbon capture and storage (CCS) models, reforesting) (Eyraud, Clements & Wane 2013). Kahlenborn (1999: 69) identify forms of green investment as "green savings accounts, green saving certificates, environmental direct investment, and environmental investment funds." Global literature has also outlined various green investment practices within corporate contexts.

For example, Zutshi & Sohal (2004) assessed 286 companies in Australia and New Zealand and demonstrates that these organisations adopted environmental management systems (that is ISO 14001 certified) to monitor the firms environmental effects. Fonseca & Jabbour (2012) examined Brazilian companies categorised in 6 business incubators within the city of Sao Paulo and illustrates that these businesses are greening their incubators by employing mechanisms such as energy management, green buildings, green screening processes and environmental training. Nandy & Lodh (2012) studied 1026 United States based companies and inform that banks take into account the eco-awareness or environmental consciousness of these firms (pollution prevention, clean energy, recycling, corporate governance, management systems and environmental products) in implementing its lending decisions which minimise default risk. Lin, Tan & Geng (2013) surveyed four major international motorcycle companies in Vietnam and demonstrates that these firms incorporated green product innovation (preventing waste increase in product disposal, efficient use of resources and minimising undesirable environmental risks and impacts in firm operations).

Nameroff, Garant & Albert (2004) implemented a study on 3235 institutions in the United States and confirms that these entities integrate green chemistry patents as measures which indicates green innovation and green research and development (R&D). Pons, Bikfalvi, Llach, & Palcic (2013) analysed 116 Spanish manufacturing firms and 64 Slovenian manufacturing firms in Europe and outlines that these firms integrated energy and resource efficient technologies. Wang, Toppinen & Juslin (2014) assessed 18 companies in the United Kingdom construction industry and maintain that they integrate green buildings. Hsu, Kuo, Chen & Hud (2013) examined a Taiwanese light-emitting diodes (LEDs) electronic company and spotlights that the firm adopts carbon management practices (that is policy, governance, targets, verification, risk assessment, information, reporting and supplier collaboration) in its green supply chain. Karagülle (2012) studied the Turkish logistics business companies and indicates that these firms integrate green transportation and green logistics initiatives.

1.2 Corporate Image

Corporate image has been defined as views that the company stakeholders possess towards the firm, along with perceptions they believe other partners hold as they view the company (Melo & Garrido-Morgado 2011). Thus, psychologists have described corporate image as a symbolic connection that link the company to all its relevant stakeholders (Herremans, Akathaporn & McInnes 1993). On the other hand, sociologists explain corporate image as perceived and disclosed (Cretu & Brodie 2007). Corporate image can also defined as the net outcome of comprehensions, principles, ideas, sentiments, thoughts and judgements about the company (Cho, Guidry, Hageman & Patten 2012). It refers to the aggregate product of different issues that reflect and support interchange of ideas about the identity of the firm (Moon 2007). Accordingly, corporate image can also be called "corporate reputation" (Kang & Yang 2010). Therefore, corporate image is a collection of features and characteristics that define a firm, which are derived from the company's historical operations. It is a mental picture which suddenly appears when the company's name has been mentioned (Cho et al. 2012). As such, corporate image is a synthesized psychological outward appearance or conviction which persistently transforms in relation with amongst others, the company's setting, performance, announcements and media coverage (Kang & Yang 2010; Cormier & Magnan, 2007; Aerts et al. 2006).

2. RELATED LITERATURE

Past studies consistent with the relationship between corporate image and corporate green investment activities has also been discovered. For instance, Li, Richardson & Thornton (1997) investigated 14 772 pollutant spills recorded from 1988 to 1992 of Ontario's 10 industries (pulp & paper, transportation, food, chemical, hydro utilities, metallurgical, forestry, mining, petroleum plus other manufacturing) on their environmental liability reporting activities. They suggest that environmental reporting was highly likely when external stakeholders believe that the firm understands the environmental liability and when the firm is identified as a high polluter. Bewley & Li (2000) studied 188 manufacturing companies in Canada using their 1993 yearly records about voluntary environmental reporting practice. The study demonstrates that companies with greater media exposure about their environmental practices, greater pollution disposition and extended political exposure tend to report their environmental information. Cormier & Magnan (2003) evaluated 50 French companies unique environmental regulatory contexts and outlines that extent of corporate environmental disclosure had a connection with environmental media visibility (outside stakeholder pressures that monitor firm operations) and other issues such as size of the firm, type of industry, proprietary and information costs.

Aerts, Cormier & Magnan (2008) studied firm environmental reporting of 892 firms (43-Belgian, 419-US, 206-Canadian, 84-German, 43-Dutch and 97-French) from various industries (Telecom, Utilities, Information Technology, Chemicals, Industrial, Energy, Consumer goods, Materials). They posit that environmental disclosure was heavily influenced by stakeholders which include financial analyst forecast projections and affiliation with environmentally interested organisations. Buysse & Verbeke (2003) analysed corporate pro-active environmental policy of 197 firms based in Belgium and demonstrate that different stakeholder threats with regard to poor environmental practices exert pressure on companies to develop better environmental management policies. Cormier & Magnan (2007) analysed how environmental disclosure adds to firm financial performance of 235 firms (50- French, 118-Canadian, 67-German) from diversified industries (energy, manufacturing, mining, chemicals, food, consumer goods, water, oil and gas, forestry and paper) by utilising their environmental disclosure annualised observations. The research points out that environmental disclosure of the firms relationship with factors such as media visibility (outside stakeholder pressures that monitor firm operations) and firm stock market value (which must be considered) were significant to influence the firm's financial performance when environmental reporting.

Aerts et al.(2006) evaluated firm imitation practices about firm environmental participation and disclosure at intra-industry level for large companies in Germany, Canada and France from 1992 to 1997 by considering their annualised environmental disclosure observations. The study found out that a firm imitation behaviour of other company's environmental practices and disclosure within a specific industrial sector considerably decrease when those firms are experiencing high media visibility or exposure. Einhorn (2005) examined the relationship between mandatory and voluntary reporting and illustrates that the type of information that is gained through an understanding or acceptance by the audience (stakeholders) have the power to influence the company's environmental reporting approach. Friedman & Miles (2001) investigated firm environmental and social disclosure by surveying 14 experts from UK's socially responsible investment (SRI) sector and posit that these firms have engaged in environmental and social practices since corporate reputational risks have developed to be the top company priority. Niskala & Pretes (1995) examined environmental disclosure and participation in 75 Finnish companies from 1987 to 1992 and the outcomes argue that stakeholder factors (governmental laws, environmentally oriented institutions, public views) have improved corporate environmentalism towards greater environmental reporting.

Patten & Trompeter (2003) scrutinised the connection involving environmental reporting plus earnings management in 40 United States chemical companies which have experienced undesirable discretionary accruals in year 1984 and the findings illustrates that environmental reporting and engagement has been utilised by the firm as efficient instruments that manages political pressures and crises. Patten (2002) studied the association involving environmental performance and reporting for 131 US firms using their 1988 toxic release data published to the public in 1990 and the outcomes highlights that firms with negative environmental performances (that is high toxic releases) extensively implemented environmental reporting so that they are able to save corporate image owing to high social/political exposures than companies with positive environmental performances (low toxic releases). Hughes, Anderson & Golden (2001) evaluated environmental reporting and initiatives of 51 United States manufacturing companies over the period 1992 to 1993. The findings suggest that poor environmental performance by companies result in such firms implementing high environmental initiatives and reporting. Hence such mechanisms were viewed as part of remediation procedures as public interest about environmental issues was observed to be high.

Deegan & Rankin (1999) investigated environmental expectations of the firms stakeholders (investors, academic and review institutions) from yearly environmental reports of 462 Australian largest firms and the outcomes highlights that these stakeholders perceived environmental issues as important subject issue, supported mandatory reporting of environmental issues, and they approved extended government involvement in corporate environmental practices and disclosure. Darrell & Schwartz (1997) examined change of environmental reporting against public policy requirements of 53 US companies from different industrial sectors (15-oil, 11-consumer goods, 16-forestry, 11-chemical) following the Exxon Valdez oil spill in Alaska (1989) by considering years 1988 to 1990. The findings demonstrates that environmental participation and disclosures significantly increased (through being both “time” and “event” specific) as a result of high public policy interests. Aerts & Cormier (2009) studied 158 companies from United States (119) and Canada (39) on media legitimacy and reporting of environmental issues by companies. The outcomes suggest that firm environmental legitimacy was positively correlated to yearly environmental reporting (economic-based parts) plus reactive environmental media publicity. Moreover, undesirable firm media legitimacy stimulated environmental media reporting.

van Staden & Hooks (2007) investigated firm environmental disclosure and their responsiveness to environmental issues for 54 New Zealand companies. The study puts forward that environmental participation and reporting by these companies represents proactive mechanisms to acquire corporate legitimacy as most companies desired to maintain their positive environmental reputation. Toms (2002) assessed factors that spur firm environmental image in UK firms over the period 1996 (considered 89 firms) to 1997 (considered 126 firms). The results indicate that environmental implementation, management and reporting adds to development of corporate environmental image. de Villiers and van Staden (2011) examined drivers of corporate voluntary environmental reporting of 120 firms selected from the Toxics Release Inventory (TRI) information on the Corporate Environmental Profiles Database. 60 companies were determined to have a bad green image (crisis) and another 60 had a good green image (non-crisis). Using Univariate analysis, the outcomes spotlights that corporations tend to report extended environmental information when they have a bad green image or they are experiencing an environmental crisis. Golob & Bartlett (2007) examined corporate social responsibility (CSR) disclosure and adoption in Slovenia and Australia and the results spotlights that CSR disclosure (environmental, social & governance) and practice has been employed as a mechanism that to sustain corporate image by expanded firm transparency plus it foster greater involvement of corporate stakeholders.

Robinson et al.(2011) explored sustainability leadership of 318 US and Canadian firms included in the DJSI World Index and demonstrates that companies which affiliates themselves and become members in the Dow Jones Sustainability Index (DJSI) are perceived as having attained a sustainability image. Cho & Patten (2007) investigated 100 US firms (which were part of KLD Research and Analytics Incorporation 2002 ratings, must have produced the 2001 fiscal year 10-K report) regarding the implementation of environmental disclosure as an instrument of corporate legitimacy. The outcomes suggest that firms constituted with poor environmental activities encounter extended exposure to political and public demands, hence integration of environmental practices and reporting assist towards reducing such exposures. Brown, Guidry & Patten (2010) analysed 59 US firm independent sustainability reports from 2001 to 2007 on sustainability disclosure and firm image views by applying the *Fortune Most Admired* ratings. The results indicates a positive correlation involving sustainability reporting quality and indicators of firm reputation.

Contrary to these views, some research points out that corporate image does not determine corporate green investment activities. For example, Crane & Matten (2007) examined corporate ethics in this period of globalisation and posit that affiliation with Dow Jones Sustainability Index (DJSI) do not earn the firm a sustainability image since the entity's operation largely depend on organisational disclosed internal and external sustainability information. Crittenden, Crittenden, Ferrell, Ferrell & Pinney (2011) created a "market-oriented sustainability framework" and adds that when companies communicate the same green practices to their customer's then image can be hard to achieve since customers will have difficulty in distinguishing green activities specific to a selected company. McGinn (2009) examined 92 United States green-oriented organisations utilising these companies green reputation ratings (found in *Newsweek* magazine). The research outcomes demonstrate that environmental performance ratings were negatively associated with green reputation.

Azapagic (2004) studied the minerals and mining sector using global perspectives and observed that poor environmental performance in the past generates negative perceptions of the industry which can affect attainment of positive corporate reputation of modern environmental performances. Luchs, Naylor, Irwin & Raghunathan (2010) evaluated corporate sustainability liability by surveying 281 respondents in the US and the results suggest that consumers' may not prefer buying environmentally compatible commodities (eco-friendly tires) since they view them as having low performance attributes when compared to conventional standard tires. Thus eco-based companies were perceived by consumers as bad and underperforming firms. Wang & Chen (2012) examined Japan nuclear energy safety practices and outlines doubt on green corporate image development in nuclear energy investment.

3. METHODOLOGY

This study utilised secondary data obtained from the firm's 2012 sustainability reports and/or annual integrated reports. The study employed a multiple case study approach which investigated the complete 100 South African Carbon Disclosure Project (CDP) firms that are on the JSE. These are companies which take part in the CDP, integrate green investment initiatives, adhere to JSE environmental sustainability requirements plus they measure, evaluate and control carbon emissions in their operations (CDP, 2014). Hence, the CDP companies possess the green attributes that the research is focussing on. Therefore, content analysis method was deployed to extract information which illustrates that corporate image is a factor which supports green investment practices in JSE listed firms. Therefore, the researcher produced a collection of phrases that demonstrate corporate image as a factor which supports firm green investment activity. The utilisation of categorical themes in corporate sustainability studies has been identified (Gray, Kouhy & Lavers 1995; Hackston & Milne 1996). In this regard, the researcher comprehensively scrutinised both paragraphs plus sentences which had a connection with the variable under study- corporate image and then extracted such details. In this case, firms which highlights that corporate image motivates their green investment initiative, the number of such announcements were gathered in the "yes" row, whiles non-announcements were gathered in the "no" row. On that account, data in textual formats was converted into numerical digits. The numerical data was, hence analysed by deploying Chi-square tests.

4. DATA ANALYSIS

The calculations of the IBM SPSS Version 22 produced the Chi-square tests outcomes as illustrated in Table 4.1 and Table 4.2 below:

Table 4.1: Showing the relationship between corporate image and green investment practices in JSE listed firms: Chi-Square tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	28.880[a]	1	.000		
Continuity Correction[b]	27.380	1	.000		
Likelihood Ratio	29.619	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	28.736	1	.000		
N of Valid Cases	200				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 50.00.
b. Computed only for a 2x2 table

Rejection and Acceptance of Hypotheses:
Given the level of significance, $\alpha = 0.05$ (5% significance level)
The *degrees of freedom* formula is: $df = (r-1)(c-1)$, where r = the number of rows in the cross-tabulation table and c = the number of columns in the cross-tabulation table.

In this example, $df = (r-1)(c-1) = (2-1)(2-1)= 1$.

Then the X^2-critical value will be determined using $df = 1$ and $\alpha = 5\%$ or 0.05. The region for acceptance for H_o is X^2-Stat $\leq X^2$-critical value.

X^2-critical value with $df = 1$ and $\alpha = 5\%$ or 0.05 is 3.843. The X^2-statistic value was determined as 28.880 as indicated in Table 4.1 above. The X^2-statistic value is the Pearson Chi-Square value. Therefore, the decision was that we reject H_o and accept H_1 since X^2-Stat (28.880) is greater than X^2-critical value (3.843). Thus, corporate image influence green investment practices in JSE listed firms.

Table 4.2: Results on the correlation between corporate image and green investment practices in JSE listed firms.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.380	.000
	Cramer's V	.380	.000
N of Valid Cases		200	

In this study, the Phi and Cramer's V were two tests employed to examine the strength of association involving corporate image and green investment practices in JSE listed firms. As demonstrated from Table 4.2 above; the strength of association was discovered to be 0.380. This result illustrated a positive linear association between corporate image and green investment practices in JSE listed firms.

5. DISCUSSION OF THE FINDINGS

The outcome from Chi-square tests demonstrates that corporate image influence green investment practices in JSE listed firms. In order to conform these findings, the study also utilised Phi and Cramer's V tests to tests the strength association between corporate image and green investment practices in JSE listed firms. The result was ascertained as 0.380 thereby proving a positive linear association involving corporate image and green investment practices in JSE listed firms. Therefore, many reasons can be put forward to explain these findings. For instance, SAPA (2009) suggest that undesirable negative reports from internal and external partners of South African companies are likely to increase on firms that are not incorporating green initiatives. In the same vein, Smith & Perks (2010) express that green consumerism demands in South African business contexts have advocated for widened incorporation of firm environmental preservation approaches. For example, Kruger & Saayman (2013) documents that South African wine industries are instituting green activities to attract visitors and increase demand of their products from consumers. In this regard, there is no doubt that South African JSE companies are integrating green investment practices in order to preserve or create their green reputation. In this case, growing green demands from the firm's stakeholders imply that JSE companies which do not institute green initiatives are likely to face increased negative publicity and undesirable media reports which will definitely create negative impacts on their corporate market shares.

Therefore, the strength of the association indicated by a positive association involving corporate image and green investment practices in JSE listed firms could suggest that growing green stakeholder demands are increasingly having an impact on firm environmental performance demonstrated through widened green practice integration. On that note, Trialogue (2007) investigated 20 experts from various parts of the South African economy and the responses demonstrates that desire to generate green reputation and green law adherence were prime stimulators behind firm sustainability practice incorporation. CDP (2012) also adds that green programs incorporated by South African firms which are supported by comprehensive disclosure remove public doubt and negativity. For example, Herringer et al. (2009) posit that sustainability issues started as early as 1990s through the South Africa's Trade Union initiatives which also discouraged apartheid and undesirable business operations. In the same vein, Mitchell et al.(2005) informs that stakeholder requirements concerning sustainability issues is relatively high within South African contexts which has inevitably put pressure on firms to improve their sustainability involvement since it was identified to be low.

Bonellie (2013) also illustrates that green investment practices in South Africa are important to improve customer loyalty, attract and retain employees plus reduce negative firm publicity. As such, in this era of globalisation which has also seen heightening emergence of green issues, it appears that attainment of a green image by the company will guarantee its survival whiles companies which do not integrate green initiatives will experience loss of market share as a result of negative media attention and publicity. This view therefore could also explain why corporate image influence green investment practices in JSE listed firms. Thus, within South African context, lost organisational green reputation imply loss of firm competiveness and market base (Van den Berg et al. 2013) reduced customer loyalty (Tshesane & Seroka,2012) and reduced business legitimacy (CDP,2014). Past global research which are in agreement with this study outcomes that corporate image influence green investment practices have also been determined. For instance, results by Li et al.(1997); Bewley & Li (2000); Cormier & Magnan (2003); Aerts et al.,(2008); Buysse & Verbeke (2003); Cormier & Magnan (2007); Aerts et al.(2006); Einhorn (2005); Friedman & Miles (2001); Niskala & Pretes (1995); Patten & Trompeter (2003); Patten (2002); Hughes et al.(2001); Darrell & Schwartz (1997); de Villiers & van Staden (2011) and Brown et al.(2010). Nonetheless, Crane & Matten (2007); Crittenden et al. (2011); McGinn (2009); Azapagic (2004); Luchs et al.(2010) plus Wang & Chen (2012) highlighted that corporate image does not influence corporate green investment practices thereby generating contradicting findings with this study.

6. DRIVERS OF CORPORATE IMAGE AS A FACTOR THAT PROMOTE CORPORATE GREEN INVESTMENT INITIATIVES IN JSE LISTED COMPANIES.

The following Table 6.1 indicates common stimulators of firm reputation as a variable which supports corporate green investment initiatives in JSE listed companies.

Table 6.1: Drivers of corporate image as a factor which spur corporate green investment practices in JSE listed firms.

Summarised drivers of corporate image
• Green technology integration promotes mutual partnership with key stakeholders. • The firm is determined to attain a positive environmental legacy. • The entity wants to be identified and recognised as green champions. • The firms funding assets have impact in areas where environmental groups operate thereby attaining legitimacy. • Voluntarily disclose carbon footprint with Carbon Disclosure Project (CDP) South Africa which has improved trust, credibility and firm belief systems. • Maintain close association with key stakeholders on carbon emission reduction matters. • Reputational risks are avoided by sound greening activities. • Builds sustainability image of the firm’s vision.

- Participating in the carbon emission reduction annually is part of the firm's green vision.
- Public disclosure of carbon footprint enhance harmonisation of relationships with stakeholders.
- Signatory of the Energy Efficiency Accord with South African government which improve relationship with the government.
- Public disclosure of carbon through Carbon Disclosure Project (CDP) is now part of firm long-term policy and green image building.
- Actively involved with green projects and campaigns with major stakeholders which foster carbon reduction initiative and general society approval.
- Carbon footprint is verified by recognised worldwide sustainability supporting agencies such as the Global Carbon Exchange (GCE).
- Is a member of the Carbon Protocol South Africa.
- Assists clients to be more efficient by greening IT systems.
- External stakeholder views are incorporated in sustainability policy development.
- Regularly carry out energy saving initiatives in Shopping Malls on customer's behalf.
- Energy and carbon management are pillars of corporate policy.
- Takes part in CDP South Africa and Nedbank BettaBeta Green exchange trade fund.
- Is a member of the Green Building Council of South Africa ("GBCSA")
- Taking part in carbon disclosure indicates better green brand quality.
- Undertakes and hosted climate change projects such as COP17 public debate on climate change and the 2011 Global Investor Statement on Climate Change.
- Seek to maintain a viable green business model from a stakeholder's perspective.
- Produces green certified products approved by stakeholders.
- Integrates a strong and empowered green vision.
- Green demands of stakeholders have formalised & established channels within the firm.
- Offer Greening Your Business Course to companies.
- Have improved availability of green merchandise range.
- Use magazines, newsletters and e-media to communicate green matters.
- Assume industrial leadership on green investment issues.
- Taking part in Carbon Disclosure Project (CDP) improve firm attractiveness.
- View carbon emission reduction matters as part of firm culture.
- Taking part in Carbon related issues continually improve public relations.
- Consider carbon emission reduction aspects as ethical.
- Promotes transparency by disclosing carbon footprint.
- Have an ethical and credible climate change policy.
- Involvement with carbon disclosure is designed to meet expectations of stakeholders.
- Is forthright in communicating carbon and environmental matters.
- Company visibility is improved through assuming carbon reporting practices.
- Promotes public awareness concerning green matters.
- Believe high business standards are maintained by taking part in Carbon related matters and reporting.

An examination of the drivers of corporate image indicates that JSE listed firms are conducting their business by instituting green programs inorder to maintain and sustain green corporate image. The findings in Table 6.1 therefore highlights that corporate green reputation is a tool which they use to develop relationships with their stakeholders inorder to gain legitimation, preserve and build market shares.

7. COMPANY PERCEPTIONS CONCERNING CORPORATE IMAGE AS A FACTOR THAT SPUR GREEN INVESTMENT ACTIVITIES IN JSE LISTED COMPANIES.

This section discusses firm perceptions with respect to corporate image. These views were retrieved from selected JSE listed firms by employing simple random sampling approaches. The assumption was that all the entire 100 South African CDP firms on the JSE integrate green-oriented activities, therefore, any company selected met the selection criteria. The study only considered and evaluated 10 company perceptions.

Company 1: *"We pledge to be a socially responsible and humane corporate citizen that ploughs back in our communities, and that will continue to make progress to minimise the negative impact we have on the environment we operate in."*

By this statement, JSE listed firms would like to be perceived as companies that "care" and are able to harmonise their business objectives with natural environmental interest inorder to be socially acceptable. This statement also imply that businesses do not want to be viewed as working in isolation and/or pursuing their business goals without supporting corporate environmental accountability issues.

Company 2: *"Environmental management is characterised by a focus on a sustainable future and on ensuring that mining bestows a positive legacy."*

The statement by company 2 outlines that JSE firms support environmental practices by embedding such initiatives in corporate policy such that environmental engagement will simply be part of the firms' culture and way of operating business both in the present and in the future.

Company 3: *"Ongoing engagement with the media has been an important aspect of managing the company's corporate reputation as well as raising awareness of key sustainability issues."*

The company selects media as an instrument that they can use to communicate their sustainability practices so that the firm image is preserved. As such, openly supporting media attention to corporate practices could be an indication that the company has fulfilled sustainability demands and hence, even media involvement with their business sustainability practices will not damage their corporate reputation.

Company 4: *"Newsweek Green Rankings- We ranked 21st in the financial sector and 64th overall out of the largest 500 publicly traded companies globally."*

The company perceive green reputation as very important since firms undergo green ratings to determine the extent of greening policies they have adopted. The statement highlights that corporate green reputation determines corporate green investment activity. Hence, high green ratings are perceived to be instrumental in attainment of firm green reputation.

Company 5: *"Lending responsibly protects our reputation and assists our customers to meet their social and environmental obligations."*

The JSE listed firms consider environmental and issues in lending and investing decisions. Such practices are considered ethical and credible as they preserve corporate image. The companies therefore accepts that environmental image damages can negatively affect business operations.

Company 6: *"Our commitment is to be Earth Kind™ and inspire a better life. Typek ™ carrying the Earth Kind™ seal is a key brand for "Company 16" that consumers have come to trust. The Typek Green promotion was a vehicle to translate the message of responsible corporate citizenship."*

The statement illustrates that a good image is generated by developing green bands. Thus the firm perceives that consumers prefer and identify more with green products than non-green products. Therefore, green products are viewed as the ones which make the company socially acceptable.

Company 7: *"Changing stakeholder requirements in terms of transparency have made it essential for companies to disclose their strategies regarding environmental management."*

The company express that reporting corporate environmental activities through increased transparency practices is adequate to meet and gain support of stakeholders. The statement seem to portray that stakeholders questioned corporate transparency on environmental issues and hence they can acquire their good reputation by improved environmental reporting thereby gaining stakeholder trust.

Company 8: *"While "Company 8" enjoys a well-established reputation for caring for the environment, we remain acutely aware that, to be truly effective, sustainability must not only deliver environmental benefits – it must also impact positively on people, communities, the economy, and the future of the country as a whole."*

Company 8 demonstrates that positive corporate image is acquired through increased environmental participation. Thus, the firm believes that built positive corporate environmental image last long and it then extends by providing benefits to people and their societies.

Company 9: *"For the Company to achieve its vision and strategy, it has to retain its societal licence to operate. The nature and impacts from our mining activities carry with them obligations of respect for human rights, sound environmental management and ethical behaviour."*

The company asserts that appropriate environmental practices are one of the mechanisms which supports firm legitimation as the company require to be accepted by the communities in host locations where they conduct their business activities. Therefore, environmental participation of the firm imply that the company will experience reduced social scrutiny and conflicts with local people.

Company 10: *"Company 10 is a leader in the local industry in reducing the impact of print-production processes on natural resources and implementing practices to eliminate emissions."*

The company is proud to be a green leader. As such, green leadership will automatically increase company corporate green image rankings. Therefore high green reputation ratings maintains customer base, widens market bases and creates positive perceptions of the firm's brand.

OVERALL DISCUSSION

This study found out that corporate image influence green investment practices in JSE listed firms. Furthermore, the strength of association between corporate image and green investment practices in JSE listed firms was ascertained as to be 0.380. Therefore, the study demonstrated a positive linear association involving corporate image and green investment practices in JSE listed firms. A Roman historian, Publilius Syrus (100 B.C) expressed that "A good reputation is more valuable than money." Therefore this study also managed to prove this statement as obtaining a good green image heightens the company's status in the industry. As such, integrating green investment activities can be a vehicle that improves a company's industrial status, in addition to supporting company practices which preserve the natural environment. The drivers of corporate image managed to outline that green image is an intangible corporate green asset which can also be employed as a source of firm competitiveness which ensure the company's capability to remain viable in the long-term. In this case, better corporate reputational benefits enhance the firm to acquire profitable market prospects plus increase company market value. The drivers also indicated that green image is a function of responsibility, credibility, reliability and trustworthiness issues. As such, corporate green image represents a major contributor of the company's operational performance. This perception is supported by JSE corporate views regarding corporate image. Moreover, improved corporate green image as demonstrated by the drivers of corporate image (see section 6) and corporate views (see section 7) minimise company risks, improve firm strategic flexibility, promotes superior firm morale and leads to price concessions. Section 6 and 7 also highlighted that corporate green reputation is not constructed in isolation as it is also affected by firm association with its major and minor stakeholders. Therefore, the company's green reputation relates to firm view of its associated stakeholders, namely, suppliers, employees, shareholders, consumers, media, government, local community and environmental interest groups.

CONCLUSION

The desire to prevent increasing stakeholder hostility has empowered companies to engage green investment initiatives. Thus, companies participate in green activities to sustain and regain public support. In this case, some researches have demonstrated that corporate green image issues are actually an informal regulatory mechanism which complements governmental legislative tools. Therefore this paper, sought out to explore the relationship between corporate image and green investment practices in JSE listed companies. This study determined that corporate image influence green investment practices in JSE listed firms. In addition, the strength of the relationship involving corporate image and green investment practices in JSE listed firms was discovered to be 0.380. Thus, a positive linear connection between corporate image and green investment practices in JSE listed firms was demonstrated. The study also managed to present the drivers of corporate image in JSE listed firms. From a corporate perspective, this research demonstrated how JSE listed firms employ corporate green image towards improving overall firm performance. Further studies are important to investigate how firm stakeholders view green investment practices with regard to image by employing experimental research designs which will further contribute more evidence in accordance with this dimension.

REFERENCES

Aerts, W. & Cormier, D., 2009, 'Media legitimacy and corporate environmental communication', *Accounting, Organizations and Society* 34(1), 1-27.

Aerts, W., Cormier, D. & Magnan, M., 2006, 'Intra-industry imitation in corporate environmental reporting: An international perspective', *Journal of Accounting and public Policy* 25(3), 299-331.

Aerts, W., Cormier, D. & Magnan, M., 2008, 'Corporate environmental disclosure, financial markets and the media: An international perspective', *Ecological Economics* 64(3), 643-659.

Azapagic, A., 2004, 'Developing a framework for sustainable development indicators for the mining and minerals industry, *Journal of Cleaner Production* 12, 639-662.

Bewley, K. & Li, Y., 2000, 'Disclosure of environmental information by Canadian manufacturing companies: A voluntary disclosure perspective', Advances *in Environmental Accounting and Management* 1, 201-226.

Bonellie, D., 2013, 'Carbon offsetting vs carbon reduction', viewed 23 November 2013, from http://carbonfootprintcourses.co.za/purchasing-carbon-offsets-vs-reducing-emissions-internally/

Brown, D.L., Guidry, R.P. & Patten, D.M., 2010, 'Sustainability reporting and perceptions of corporate reputation: An analysis using Fortune most admired scores' *Advances in Environmental Accounting and Management* 4, 83–104.

Buysse, K. & Verbeke, A., 2003, 'Proactive environmental strategies: a stakeholder management perspective', *Strategic Management Journal* 24(5), 453-70.

CDP, 2012, *CDP South Africa 100 Climate Change Report 2012*, CDP South Africa, South Africa.

CDP, 2014, *CDP South Africa 100 Climate Change Report 2013,* CDP South Africa, South Africa.

Cho, C.H. & Patten, D.M., 2007, 'The role of environmental disclosures as tools of legitimacy: a research note', *Accounting, Organizations and Society* 32 (7–8), 639–647.

Cho, C.H., Guidry, R.P., Hageman, A.M. & Patten, D.M., 2012, 'Do actions speak louder than words? An empirical investigation of corporate environmental reputation' *Accounting, Organizations and Society* 37, 14–25.

Cormier, D. & Magnan, M.L., 2003, 'Environmental reporting management: a continental European perspective', Journal *of Accounting and Public Policy* 22, 43-62.

Cormier, D. & Magnan, M., 2007, 'The revisited contribution of environmental reporting to investors' valuation of a firm's earnings: An international perspective', *Ecological economics* 62(3), 613-626.

Crane, A. & Matten, C., 2007, *Business ethics: Managing corporate citizenship and sustainability in the age of globalization,* Oxford University Press, Oxford.

Cretu, A.E. & Brodie, R.J., 2007, 'The influence of brand image and company reputation where manufacturers market to small firms: a customer value perspective', *Industrial Marketing Management* 36(2), 230-40.

Crittenden, V.L., Crittenden, W.F., Ferrell, L.K., Ferrell, O.C. & Pinney, C.C., 2011, 'Market-oriented sustainability: a conceptual framework and propositions' *Journal of the Academy of Marketing Science* 39, 71-85.

Darrell, W. & Schwartz, B.N., 1997, 'Environmental disclosures and public policy pressure', *Journal of accounting and Public Policy* 16(2), 125-154.

De Villiers, C.J. & Van Staden, C., 2011, 'Where firms choose to disclose voluntary environmental information', *Journal of Accounting and Public Policy* 30(6), 504-525.

Deegan, C. & Rankin, M., 1999, 'The environmental reporting expectations gap: Australian evidence', *British Accounting Review* 31, 313–346.

Ecologic., 1998, 'Green Investment: Market Transparency and Consumer Information' *Workshop Summary-Proceedings of the International Workshop,* Berlin, October 07, 1998.

Einhorn, E., 2005, 'The nature of the interaction between mandatory and voluntary disclosures', Journal *of Accounting Research* 43, 593 – 621.

Eyraud, L., Clements, B. & Wane, A., 2013, 'Green investment: Trends and determinants', Energy *Policy* 60,852–865.

Fonseca, S.A. & Jabbour, C.J.C.,2012, 'Assessment of business incubators' green performance: A framework and its application to Brazilian cases' *Technovation* 32,122–132.

Friedman, A.L. & Miles, S., 2001, 'Socially responsible investment and corporate social and environmental reporting in the UK: an exploratory study', *British Accounting Review* 33 (4), 523-548.

Golob, U. & Bartlett, J.L., 2007, 'Communicating about corporate social responsibility: A comparative study of CSR reporting in Australia and Slovenia', *Public Relations Review* 33(1), 1-9.

Gray, R., Kouhy, R. & Lavers, S., 1995, ‘Corporate social and environmental reporting: a review of the literature and a longitudinal study of UK disclosure’, *Accounting, Auditing & Accountability Journal* 8(2),47-77.

Hackston, D. & Milne, M.J., 1996, ‘Some determinants of social and environmental disclosures in New Zealand companies’, *Accounting, Auditing and Accountability Journal* 9(1), 77-108.

Herremans, I.M., Akathaporn, P. & McInnes, M., 1993, ‘An investigation of corporate social responsibility reputation and economic performance’, *Accounting, organizations and society* 18(7), 587-604.

Herringer, A., Firer, C. & Viviers, S., 2009, ‘Key challenges facing the socially responsible investment (SRI) sector in South Africa’, *Investment Analysts Journal* 70, 11-26.

Hsu, C., Kuo, T., Chen, S. & Hud, A.H., 2013, ‘Using DEMATEL to develop a carbon management model of supplier selection in green supply chain management*’, Journal of Cleaner Production* 56, 164-172.

Hughes, S.B., Anderson, A. & Golden, S., 2001, ‘Corporate environmental disclosures: are they useful in determining environmental performance?’, *Journal of accounting and public policy* 20(3), 217-240.

Kahlenborn, W., 1999, ‘Transparency and the Green Investment Market’, *Greener Management International* 27, 65-78.

Kang, M. & Yang, S.U., 2010, ‘Comparing effects of country reputation and the overall corporate reputations of a country on international consumers' product attitudes and purchase intentions’, *Corporate Reputation Review* 13(1), 52–62.

Karagülle, A.Ö., 2012, ‘Green business for sustainable development and competitiveness: an overview of Turkish logistics industry’, *Procedia - Social and Behavioral Sciences* 41, 456 – 460.

Kruger, M. & Saayman, M., 2013, ‘How green are visitors at a green wine destination in South Africa?’, *Acta Academica* 45(3), 63-98.

Li, Y., Richardson, G.D. & Thornton, D.B., 1997, ‘Corporate disclosure of environmental liability information: theory and evidence’, *Contemporary Accounting Research* 14 (3), 435–474.

Lin, R., Tan, K. & Geng, Y., 2013, ‘Market demand, green product innovation, and firm performance: evidence from Vietnam motorcycle industry’, *Journal of Cleaner Production* 40, 101-107.

Luchs, M., Naylor, R.W., Irwin, J.R. & Raghunathan, R., 2010, ‘The sustainability liability: Potential negative effects of ethicality on product preference’, *Journal of Marketing* 74, 18-31.

McGinn, D., 2009, ‘The greenest big companies in America’, Newsweek, 28 September, p. 34–54.

Melo, T. & Garrido-Morgado, A., 2011, ‘Corporate reputation: A combination of social responsibility and industry’, *Corporate Social Responsibility and Environmental Management* 19(1), 11–31.

Mitchell, C.G., Hill, T.S. & Stobie, B.R., 2005, ‘Corporate social and environmental reporting as an effective mechanism to support social accountability in South Africa’, *Southern African Journal of Accountability and Auditing Research* 6, 67-74.

Moon, J., 2007, 'Corporate image effects on consumers' evaluation of brand trust and brand affect', *Journal of Korean Academy of Marketing Science* 17(3), 21–37.

Nameroff, T.N., Garant, R.J. & Albert, M.B., 2004, 'Adoption of green chemistry: an analysis based on US patents' *Research Policy* 33, 959–974.

Nandy, M. & Lodh, S.,2012, 'Do banks value the eco-friendliness of firms in their corporate lending decision? Some empirical evidence', *International Review of Financial Analysis* 25, 83–93.

Niskala, M. & Pretes, M., 1995, 'Environmental reporting in Finland: a note on the use of annual reports', *Accounting, Organizations and Society* 20(6), 457-466.

Patten, D.M., 2002, 'The relation between environmental performance and environmental disclosure: a research note', *Accounting, Organizations and Society* 27(8), 763-773.

Patten, D.M. & Trompeter, G., 2003, 'Corporate responses to political costs: an examination of the relation between environmental disclosure and earnings management', *Journal of Accounting and Public Policy* 22(1), 83-94.

Pons, M., Bikfalvi, A., Llach, J. & Palcic, I., 2013, 'Exploring the impact of energy efficiency technologies on manufacturing firm performance', Journal *of Cleaner Production* 52,134-144.

Robinson, M.J., Kleffner, A. & Bertels, S., 2011, 'Signaling sustainability leadership: Empirical evidence of the value of DJSI', *Journal of Business Ethics* 101(3), 493–505.

SAPA., *South African firms "not green enough*, viewed 20 September 2013 from www.southafrica.info/news/business/207879.htm

Smith, E.E. & Perks.S.,2010, 'A perceptual study of the impact of green practice implementation on the business functions', *Southern African Business Review* 14(3), 1-29.

Toms, J.S., 2002, 'Firm resources, quality signals and the determinants of corporate environmental reputation: some UK evidence', *British Accounting Review* 34, 257-282.

Trialogue, 2007, *The sustainable business handbook: smart strategies for responsible companies*, 4th edition, Cape Town: Trialogue.

Tshesane, G. & Seroka, L., 2012, *How companies create sustainable savings through cost reduction?* viewed 20 June 2014, from http://deloitteblog.co.za/tag/carbon-emissions/

Van den Berg, U., Labuschagne, J.P. & Van den Berg, H., 2013, 'The effects of greening the supplier and innovation on environmental performance and competitive advantage', *Journal of Transport and Supply Chain Management* 7(1), 121.

van Staden, C.J. & Hooks, J., 2007, 'A comprehensive comparison of corporate environmental reporting and responsiveness', *The British Accounting Review* 39(3), 197-210.

Wang, Q. & Chen, X., 2012, 'Regulatory failures for nuclear safety–the bad example of Japan–implication for the rest of world', *Renewable and Sustainable Energy Reviews* 16(5), 2610-2617.

Wang, L., Toppinen, A. & Juslin, H., 2014, 'Use of wood in green building: a study of expert perspectives from the UK' *Journal of Cleaner Production* 65,350-361.

Zutshi, A. & Sohal, A.S., 2004, 'Environmental management system adoption by Australasian organisations: part 1: reasons, benefits and impediments', *Technovation* 24, 335–357.

MAF004 An analysis of the price sales ratio as a share selection tool for shares listed on the Johannesburg Stock Exchange

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Abstract

This research investigates the relationship between the Price-Sales ratio (PSR) and future share returns of companies listed on the Johannesburg Stock exchange (JSE) over the period 1 January 2002 to 31 December 2013. The study controls for survivorship bias and as such the sample size changed from month to month. On average 254 companies were included in the study with a total of 560 companies included across the whole period. The portfolio analysis approach was used to identify whether the PSR is a good share selection tool. Furthermore, the performance of the PSR was compared to three other company-specific variables; Market Value (MV) as a proxy for size, the Debt/Equity (DE) ratio and the Book value/Market value ratio (BVMV).

The results of the portfolio analysis indicate that the PSR is a superior share selection tool where portfolios are rebalanced monthly. Furthermore, low PSR share portfolios outperformed high PSR share portfolios. Investors in South Africa and international investors looking to invest in shares listed on the JSE should benefit from the findings.

Keywords: Price-Sales Ratio, JSE, Johannesburg Stock Exchange, share selection, investing, debt/equity ratio, book value/market value ratio, market value, PSR, Finance.

1. Introduction

The Price-Sales ratio (PSR) came to the forefront after the academic and investor Kenneth Fisher published a book called *Super Stock* in 1984. In this book, Fisher reported the use of the PSR as a superior share-screening tool. He considers the PSR to be a perfect indicator of a share's current popularity which is an important indicator for value investors. The sales amount used in the ratio is inherently more stable than earnings which can move from one extreme to another from one reporting period to another.

This led to some researchers specifically including the PSR in their cross-section of future share returns research. A number of studies reported a significant relationship between SP or PSR and future share returns or PSR, however, the extent of this explanatory power varies from country to country. One can therefore not assume that the same relationship will exist in South Africa. Indeed, three unpublished master studies (Fricker, 1996; Mouton, 1998; Russel, 2004) in South Africa reported that the SP does not have significant explanatory power.

It is the objective of this study to extend the research on the PSR within the South African context, more specifically those companies listed on the Johannesburg Stock Exchange (JSE). The specific research question is:

1) Is the PSR a good share selection tool?

This research question will be answered by a popular approach within this area of research; the portfolio grouping method (see for example Fama & French, 1992).

This study differentiates itself from other studies in that the analysis is performed on a period independent to the periods used in the previous studies, effectively being an out-of-sample confirmation of prior studies' results. The analysis was performed over the period 1 January 2002 to 31 December 2013, a total of twelve years or 144 months.

This study is the first to control for a survivorship bias by choosing the sample prospectively and including companies that delist during the sample period. Survivorship bias is when the companies for the study are selected in the present day and the performance of these companies is determined retrospectively across the period of the study. By doing this one would exclude any companies that delisted or went bankrupt and effectively only include those companies that were successful. This could result in an upward bias in performance results. In total 560 companies were included in the study across the twelve years. This translated into an average of 254 companies per month in the sample compared to Fricker (1996) who tested 186 companies and Russel (2004) who tested 76 companies.

The portfolio analysis reported that portfolios formed using PSR gave the best results. These results substantiate Fisher's theory that the PSR is an initial indicator of a share's popularity but one needs to do a thorough analysis before making a final decision to invest.

As with most research some questions were answered and more were created. The following areas were identified as possible future research areas:

- Why does the PSR perform so well in the portfolio analysis? How can we identify individual companies with low PSRs that will do well?
- Will the result be different for different sectors?
- What will the performance be if the share are invested for a longer period?
- Is the PSR a good predictor of future excess returns?

It is anticipated that investors in South Africa will benefit from this research. Investors invest in order to grow and preserve their capital. In order to do this, investors need to be able to identify shares that will maintain their value and provide returns in excess of inflation. An understanding of the PSR's role in predicting future share returns will aid the investment decision.

The next section of this paper, section 2, includes a literature review on the cross-section of returns and various fundamental variables with a focus on the PSR ratio.

Section 3 will present the research design and the methodology used. section 4 will give a description of the data used in this study. The results of the research question will be presented in section 5 and are discussed in section 6 together with the limitations of the study. Finally, a conclusion is made in section 7.

2. Literature review[13]

The objective of the literature review establishes to what extent the explanatory power of the PSR or SP has been established around the world and more specifically in South Africa. This is done in order to identify where one can improve and add to this area of research.

This will be followed by an overview of the PSR and the origins of its use as a stock selection tool. The results of empirical studies in developed financial markets will be documented followed by the results of empirical studies in emerging financial markets and lastly identifying research done in South Africa.

The chapter closes with a summary of the findings and an identification of the areas where this study can extend the research on the PSR in a South African context.

2.1 The Price-Sales ratio

The PSR is a market value ratio that in its simplest form is computed by dividing the company's market capitalisation by the revenue in the most recent year. It can also be calculated by dividing the share price by the revenue per share.

The PSR is mostly used as a relative valuation ratio. It is a less commonly used ratio than the PBR or PER for the following reasons:

- Sales is the top line item of the Income Statement. It does not reflect cash flow or profits. The company's operating efficiency or lack thereof is not shown by the sales amount.
- The PSR is not comparable across industries and can differ substantially from one industry to another.
- It does not take into account the capital structure of the company.

The PSR is a useful measure to compare companies in cyclical industries. In these industries net income and EBIT are frequently negative during the down part of an industry cycle. It is also a useful measure for young companies, which typically have lower margins and invest more than the companies earn in the first years in order to ensure future growth. It is therefore not surprising that the PSR became very popular during the rise of technology and internet shares in the mid- and late 1990s. However, its popularity declined after the dot.com bubble burst.

A major advantage of the PSR is that companies with negative earnings, which result in a nonsensical PE ratio, can be included in the screening process (Leledakis, Davidson, & Karathanassis, 2003; Leledakis & Davidson, 2001). For example, Gharghori, Stryjkowski and Veeraraghavan (2013) reported that 50% of the companies included in their study had negative earnings or cash flow. Many studies exclude companies reporting negative earnings due to the difficulty this introduces. For instance, it is not possible to calculate a meaningful growth rate from period to period where the earnings move from a negative number to a

[13] Extracts of this literature review have been presented as a separate paper at the SAAA regional conference 2014 and published in the conference proceedings.

positive number (Lakonishok, Shleifer, & Vishny, 1994; Lev, 1989). On the other hand, companies who report zero Sales will be problematic. This is especially prevalent among resource and biotech companies who do not have Sales in the first years of the company's existence. Gharghori, Stryjkowski and Veeraraghavan (2013) reported that 28% of the companies included in their study had zero Sales.

Another disadvantage of PSR is there is a looser theoretical link between sales and value than between earnings or dividends and value. A company can have strong sales growth yet be destroying value.

2.2 The PSR as an investment strategy

Kenneth Fisher, an investment manager, is the founder, chairman, and CEO of Fisher Investments. He is on Forbe's list of 400 richest Americans with an estimated net worth of \$2.3 billion. As of 2010, Fisher's firm managed \$41.3 billion in 38,521 customer accounts. He has written numerous best-selling investment books, is a contributor to Forbes magazine and has been for the last 29 years. He has written numerous academic articles published in highly regarded journals such as the Financial Analyst Journal, Journal of Portfolio Management and the Journal of Investing.

Kenneth Fisher is considered to be the founder of the PSR investing strategy. This strategy is championed in his best-selling book, *Super Stock* (1984). Fisher considers himself a value investor and believes that a share's fair price should be determined by considering what someone would pay for the business as a whole. Part of the process of determining this is considering how much business a company does and the basic cost structure associated with the business (Fisher, 1984:71). In order to do this one must examine the sales of the company as well as the profit margins.

Another reason why Fisher focused on the PSR was that he considered it to be the most perfect measure of popularity (Fisher, 1984:74). PSR measures popularity relative to business size. The PSR indicates how much the market is willing to pay for one Rand of sales. Lastly, the sales amount used in the ratio is inherently more stable than earnings. Earnings can move from one extreme to another from one reporting period to another.

His PSR strategy consisted of three rules:

1. Avoid shares with PSRs greater than 1.5. Never buy shares with a PSR greater than 3.
2. Aggressively seek 'Super' companies at a PSR of less than 0.75.
3. If you have acquired shares in a 'super' company, sell these when the PSR rises to between 3.0 and 6.0 (Fisher, 1984:86).

A "super share" is the share of a company where the share:

- can generate internally funded future long-term average growth of approximately 15% - 20% in share price;
- will generate future long term average after-tax profit margins above 50%; and
- is bought at a PSR of 0.75 or less (Fisher, 1984:74).

Companies selling at high PSRs indicate that investors have high expectations of these companies. Therefore, Fisher uses the PSR to identify companies that have fallen out of favour with investors and the market due to what he called a "glitch". A "glitch" is an event where the management of a company makes a mistake which affects earnings negatively. However, management learns from this mistake and corrects it which results in earnings increasing again.

In research conducted by Fisher, he noted the following:

- Big companies tended to have lower PSRs than did smaller companies.
- The bulk of the surprises, where high abnormal returns were obtained, came from shares starting at PSRs lower than 1.0.
- Most disappointments came from shares sporting the highest PSRs just prior to poor results.

Fisher uses the PSR as a guide to determine whether share prices are high or low relative to their intrinsic value. This idea echoes Francis Nicholson's conclusion of his study performed in 1968, "Price ratios in relation to investment results". Investing successfully depends mostly on whether a share is bought at an advantageous price. The rest of this section will review academic research that has been done on the PSR or including the PSR first in the USA, then in other developed markets, and lastly in emerging markets.

2.2 Emperical studies on the PSR or SP

After the publishing of *Super Stock* (Fisher, 1984), two major USA studies were undertaken by Senchack and Martin (1987) and Jacobs and Levy (1988).

Senchack and Martin (1987) tested Fisher's claim that the PSR investing strategy is superior to the PER investing strategy during the period 1976 to 1984. The sample included approximately 400 to 450 companies per quarter. The study documented that low PSR shares exhibit both higher absolute risk-adjusted returns and produced superior returns compared to higher PSR shares. However, the study reported that low PER shares perform better than low PSR shares on both an absolute and risk-adjusted basis. It was found that for the annual holding periods low PSR shares generated excess returns of 3.45% whilst low PER shares generated an excess return of 7.1%. As such the study shows that the PSR can be used to determine those companies that would provide higher share returns showing it has some predictive qualities. However, PER is a better risk-adjusted measure to use.

This is contrary to other studies performed on the two ratios such as Jacobs and Levy (1988) and Barbee (1989). It is also contrary to Fisher's viewpoint that the PSR is superior to the PER as a share selection tool. There might be several reasons for the difference. Firstly, the holding period might be too short. Fisher advocated in his book that shares should be held for a longer term. Furthermore, Fisher makes it clear that the PSR should not be used on its own in determining which shares to buy. The PSR optimally leans on an understanding of profit margin analysis (Fisher, 1984:74). Nathan, Sivakumar and Vijayakumar, (2001) used similar methods than that of Senchack and Martin (1987), but for the period 1990 to 1996, and reported very different results to Senchack and Martin (1987). This study demonstrated that using the PSR as a trading strategy resulted in consistently higher excess (risk-adjusted) returns when compared to PER and that this result was robust across different exchanges (Nathan et al., 2001). Nathan, Sivakumar and Vijayakumar's (2001) study is different to Senchack and Martin (1987) in that they calculated excess returns using the standard market model methodology using beta as a measure of risk whereas Senchack and Martin (1987) used absolute returns and other risk measures such as Jensen, Treynor and Sharpe ratios.

Jacobs and Levy (1988) studied the PER, size, DY, BVMV, S/P (inverse of PSR), beta and CFP along with factors such as earnings surprise, the "earnings torpedo" effect and the January effect. The study was performed over the period January 1978 to December 1986 utilising the portfolio analysis approach as well as cross-sectional regression analysis (using generalised least-squares regression). Amongst the study's findings was that the S/P investment strategy produced a significant pay-off at 17% above normal market returns and this result was significant at the 1% level and had a statistically significant coefficient of 0.15.

Barbee, Mukherji, and Raines (1996) empirically tested Fisher's theory. The study analysed returns in the USA and over the time period of 1979 to 1991 and it focused on the explanatory power of the S/P compared to DE, BVMV and MV. Their methodology involved monthly regressions of share returns on financial data from the previous year. Returns were calculated for both individual shares as well as for portfolios based on the different multiples as screening methods. The results of the study indicated that the S/P and DE have a strong correlation with share returns (significant at the 1% level), stronger than that of BVMV.

Dhatt, Kim and Mukherji (1999) performed a study on the Russell 2000 Index, which is a commonly used U.S. small-cap benchmark. This study was performed during the 1979 to 1997 period on a sample of 1,981 companies (99% of the companies on the Russell 2000 Index). It was indicated that value shares outperformed growth shares regardless of which measure is used. Most importantly PSR was a better indicator of value than the other variables.

Similar studies were conducted in other developed markets. Bird and Whitaker (2003) conducted a study across several European markets (Germany, France, Italy, Netherlands, Spain, Switzerland and the United Kingdom) over the period of 1990 to 2002 and had a combined average sample size of 2,219 companies. The authors argue that BVMV and S/P are *"purer measures of value as they are more difficult to manipulate"* (Bird & Whitaker, 2003:229). The highest S/P portfolio outperformed the lowest SP portfolio. In this case, however, the S/P provided lower returns than the BVMV, making the BVMV the superior measure.

Suzuki (1998) conducted a study in Japan in order to determine whether the PSR is an efficient share selection tool thus providing superior share returns. The study was conducted for the period 1982 to 1994 utilising the portfolio analysis approach. The 100 shares on the Tokyo Stock Exchange with the lowest PSRs, PERs and PBRs were selected in each fiscal year. The study identified one of the advantages of the PSR to be that the PSR allows for investors to choose from a wider range of industries. The study established that the PSR is especially meaningful during periods of economic recovery.

Leledakis and Davidson (2001) conducted a study in the United Kingdom over the period 1980 to 1996. Two methodologies were employed in the study: the portfolio analysis approach as used by Fama and French (1992) and a cross section regression analysis approach as used by Fama and Macbeth (1973). The variables tested were BVMV, MV, S/P and DE on a sample of 1,420 non-financial companies. The portfolio analysis revealed a positive relationship between average share returns and the S/P with a return differential of 18.6% per annum between the smallest S/P portfolio and the largest S/P portfolio.

Vanstone and Agrawal (2006) conducted a study in Australia. Each variable was studied on its own rather than comparing the variables to each other and determining the best variable. As such the study only considered the Annual Portfolio Return (APR) as well as the Sharpe Ratio. For the PSR four portfolios were built: Large Cap High PSR, Large Cap Low PSR, Not Large Cap High PSR and Not Large Cap Low PSR. The study's results reported that low PSR shares performed better, especially the Not Large Cap Low PSR portfolio, achieving an annual portfolio return of 7.97% compared to the Large Cap High PSR with a return of -0.35%.

The research on the PSR extended to emerging economies, but this area has received much less attention to date. Research has been performed in countries such as Taiwan (Chou & Liao, 1996), Brazil (Halfeld, 2000), Greece (Leledakis et al., 2003), and South Korea (Mukherji, Dhatt & Kim, 1997)

Chou and Liao (1996) conducted a study on the performance of the PSR and PER screening tools on the Taiwan Stock Exchange.

From this study the following conclusions were drawn:

- The low PSR portfolios achieved superior returns compared to the high PSR portfolios.
- Including shares with both negative and positive earnings made no difference in performance, proving that this is not an advantage of the PSR.
- A low PER strategy can provide the equivalent performance of a low PSR strategy, indicating that the PSR is not superior to the PER (Chou and Liao, 1996).

Mukherji, Dhatt and Kim (1997) performed a fundamental analysis of Korean share returns. The purpose of the paper was to challenge the capital asset pricing model (CAPM) hypotheses which states that investors price only systematic risk as measured by beta. The motivation for such a study came from the empirical studies of USA shares which documented that severable variables, other than beta, explain share returns better. The study was performed in South Korea, an emerging market, which at the date of the study was considered to be the 10th largest share market by capitalisation. The returns of portfolios based on various different variables indicated that BVMV and S/P are more efficient indicators of value for Korean shares.

For Malaysia over the period 2002 to 2008 Brahmana and Hooy (2011) reported that of the three variables, PER, BVMV and PSR, the PER was the superior screening tool.

Leledakis, Davidson and Karathanassis (2003), performed a study on the Athens Stock Exchange, Greece. The study ran across a period of ten years, 1990 to 2000, on a sample of 203 non-financial companies. Some of the variables tested were MV, BVMV, S/P, DE, E/P and DY. The portfolio analysis approach reported a strong relationship between average share returns and MV, BVMV, and DE with no clear relationship between average share returns and S/P.

There are three unpublished doctoral thesis which analyses the cross-section of equity returns on the JSE based specifically looking at the SP ratio. Fricker (1996) analyses the power of the Sales-to-price ratio in explaining the share returns on the JSE. It was found that the S/P appeared to be most effective in explaining share returns on the JSE when the S/P calculation was lagged by two to three years which is similar to the findings of Barbee (1989) and Fisher (1984). A similar study was performed by Mouton (1998) over the period 1986 to 1996. Mouton found MV to be the dominant variable of the combination of variables S/P, MV, BVMV and DE (as reported by Russel, 2004). Russel (2004) conducted a similar study across a 17-year period from 1985 to 2002. 76 companies were included in the sample. Once again the variables S/P, MV, BVMV and DE were included in the study. The results of the correlation matrix revealed a strong positive relationship between S/P and BVMV and a strong negative relationship between S/P and MV. This means there was a strong negative relationship between PSR and BVMV and a strong positive relationship between PSR and MV. A regression model where all the variables were included showed that BVMV had the highest coefficient followed by DE. Out of all four variables only MV was statistically significant.

2.4 Conclusion

This literature review has studied the evidence and documents how the explanatory power of the Price-Sales ratio (or its inverse Sales-Price ratio) have been tested in developed and emerging markets. In aggregate, all these studies support the notion that the PSR is useful in predicting future share returns meaning it has explanatory power. The extent of the usefulness seems to differ from market to market. There is growing evidence that alternative measures may be superior to Beta and BVMV as advanced by Fama and French (1992).

Furthermore three studies have attempted to establish the explanatory power of the SP ratio in South Africa. None of those studies have found a statistically significant result. Since the explanatory power of the PSR has not been established in South Africa this dissertation will attempt to do just that. This study can add to this area of research by addressing some of the limitations of the other studies:

- Conduct the study over a longer period.
- Include more companies in the sample.
- Control for survivorship bias.
- Use the portfolio analysis approach to test the PSR as a share selection tool.
- Consider different rebalancing periods for forming portfolios.
- These extensions were incorporated into the design of the research methodology which is discussed in the next chapter.

3. Research methodology

It is standard practice to empirically study return premiums by compiling portfolios based on certain company specific variables and compare the returns of these. This approach effectively considers what an investor’s share returns would have been had he used a certain fundamental variable as a share selection tool. The fundamental variable with the highest risk-adjusted returns is considered to be the superior share selection tool.

Shares are sorted into five portfolios based on the firm-specific fundamental variables. There is no theoretical underpinning for this number. The studies reviewed either grouped shares into five portfolios (for example, Senchack & Martin, 1987; Nathan, Sivakumar & Vijayakumar, 2001) or ten portfolios (for example, Leledakis & Davis, 2001; Gharghori, Stryjkowski & Veeraraghavan, 2013). The portfolios are determined at year t based on a key variable and the returns for each portfolio are determined at year t + 1.

For example, on the last day of the month the PSR[14] is determined of each company included in the sample during the period under consideration. The companies are then ranked from those with the lowest PSRs to those with the highest PSRs. The sample is divided into five portfolios with portfolio 1 including the companies with the lowest PSRs and portfolio five including the companies with the highest PSRs. The returns of the portfolios are then determined by adding the returns of the individual companies within the portfolios. Each share is given an equal weighting within the portfolio as was done by Chan, Hamao and Lakonishok (1991). The portfolios are rebalanced every period and the process is repeated. The time-series average for each portfolio is then calculated and reported as the average annual return for the portfolio. This process was repeated for all four company variables analysed in the study. In effect what one is doing is saying, "If we can go back in time and select shares in our portfolio using a company specific variable, what returns will we get?"

Among the studies that used this methodology were Senchack and Martin (1987), Nathan, Sivakumar and Vijayakumar (2001), Fama and French (1992), Lakonishok, Shleifer and Vishny (1994), Leledakis and Davidson (2001), Leledakis, Davidson and Karathanassis, (2003) and Gharghori, Stryjkowski and Veeraraghavan (2013).

The Sharpe ratio developed by Sharpe (1966) will be used to ascertain whether superior returns were obtained by taking higher risks. This ratio measures the return obtained for each additional unit of risk. Risk is measured by standard deviation. This measure was also used by Senchack and Martin (1987), Graham and Uliana, (2001), Nathan, Sivakumar and Vijayakumar (2001) and Vanstone and Agrawal (2006). These studies used the 90 day governmental T-bill rate as the risk free rate. This ratio measures the absolute risk and not that of a diversified portfolio, which is appropriate as no attempt was made to diversify portfolios. The Sharpe ratio is calculated as follows:

$S_n = (R_n – RFR) / SD_n$

Where:

S_n = Sharpe portfolio performance measure

R_n = average rate of return for portfolio n

RFR = average risk free rate for the period

SD_n = standard deviation of returns for portfolio n.

[14] An explanation of how the PSR is determined is given in chapter 4.

4. Data collection

In this chapter the setting of the study and the process of collecting the data are described. The rationale for choosing those specific company variables included in the study is given and these company variables are defined. A number of biases were reported in the literature which is discussed here and the steps to avoid these biases are described.

The empirical analysis is performed on a monthly basis from January 2002 to December 2013. Companies listed on the main board of the Johannesburg Stock Exchange (thus excluding the Alt-X, Venture Capital and Development Capital boards) were included in the sample and subject to further analysis. The alternative exchanges were excluded as they tend to be small and illiquid.

Companies that delisted during the sample period were included in the sample in order to control for survivorship bias (Banz & Breen, 1986; Kothari, Shanken, & Sloan, 1995). Survivorship bias can occur where the sample is defined retrospectively as those companies that survived and prospered, which will result in those companies that went bankrupt and failed being excluded from the sample. This will cause the results to be biased upwards. The returns of companies that delisted were determined by treating the share as if they were sold within the month of delisting.

Many studies excluded companies in the financial sector as these companies have high gearing levels (Fama & French, 1992; Leledakis & Davidson, 2001). This study will include companies from all the sectors as was done by Auret and Sinclaire (2006), Hoffman (2012) and van Rensburg and Robertson (2003).

Once the list of companies to be included in the sample was finalised the share price, the market return history and the financial variables were obtained from Reuter's Datastream International (known as Datastream). The data obtained from Datastream was verified by comparing a sample of companies' financial data to the Annual Financial Statements found on McGregor BFA. The full sample was limited to the number of companies for which accounting information was available.

The variables are defined and calculated as follows:

MV: a measure of size; the market value of equity of the company (ordinary share outstanding multiplied by the market price of the share). The company's market value at the end of each month was used. The data was obtained from Datastream and calculated as current price multiplied by the common shares outstanding. Common shares outstanding represent the number of shares outstanding at the company's year-end. It is the difference between issued shares and treasury shares.

BVMV: the ratio between the book value of equity of the company at the fiscal year-end that fell in year t-1 and the company's MV.

PSR: the ratio between the annual sales of a company at the fiscal year-end that fell in year t-1 and the company's MV. Company month observation for which no sales data exists are included as zero. Sales/Revenue was obtained from Datastream as the gross sales and other operating revenue less discounts, returns and allowances.

DE: the ratio between the book value of the debt of a company at the fiscal year-end that fell in year t-1 and the company's MV. The book value of debts is defined as the book value of total assets minus the book value of common equity similar to Leledakis and Davidson (2001).

MONTHLY RETURN: Monthly return for each share included in the sample was obtained from Datastream. The return is calculated as the growth in value of a shareholding over a specified period, assuming that dividends are re-invested to purchase additional units of an equity or unit trust at the closing price applicable on the ex-dividend date. It was calculated based on the daily closing price.

The data was controlled for "look-ahead" bias. A "look-ahead" bias occurs when one makes use of data which would not have been available at the specific point in time. This typically happens as a result of companies' financial reports only being available a number of months after the actual fiscal year end. The JSE requires that all listed companies distribute annual financial statements to shareholders within six months of the company's fiscal year-end. Provisional reports are submitted within 3 months of the company's financial year end. These reports do not have to be audited and comply with the requirements of interim reports. In order to control for the "look-ahead bias" all variables were lagged by three months which follows the example of van Rensburg and Robertson (2003), Jacobs and Levy (1988), Senchack and Martin (1987), Barbee, Mukherji and Raines (1996) and Nathan, Sivakumar and Vijayakumar (2001). Thus for a company with a December financial year end the PSR as of April 2012 was calculated using its price as of 31/3/2012 and its Sales/Revenue as of 12/31/2011.

The companies on the JSE have different year-ends. Many studies only include companies with December year-ends (see for example, Senchack and Martin (1987), Fama and French (1992), Barbee, Mukherji and Raines (1996), and Nathan, Sivakumar and Vijayakumar (2001)). As the number of companies on the JSE is already much smaller than on other exchanges it was decided to include all companies regardless of year-ends. The financial data used was lagged appropriately for each year-end.

A thin trading filter was applied to the sample to ensure that the shares are traded at least once in a particular month. This method is suggested by van Rensburg and Robertson (2003). A turnover ratio is applied which measures the average monthly trading volume to the total number of shares outstanding (van Rensburg & Robertson, 2003). All shares with a turnover ratio of less than 0.01% on the last day of the previous month were excluded. The trading volume was obtained from Datastream as the data type Turnover by volume. This shows the number of shares traded for a stock on a particular day. The figure is always expressed in thousands.

Monthly observations were winsorised to avoid giving extreme outliers heavy weight. The procedure used by Fama and French (1992) of setting the smallest and largest 1 percent of the values for BVMV, S/P, and DE equal to the values corresponding to those at the 0.01 and 0.99 levels was used in this study. This method was also used by van Rensburg and Robertson (2003) and Gharghori, Stryjkowski and Veeraraghavan (2013).

A total of 561 companies were included in the sample with the average number of companies equating to 254 per month.

5. Results

In this chapter the results of the data analysis is presented. The data was collected and analysed in response to the research question posed in chapter 3.

Panel A of Table 1 reports the results for portfolios that were formed using PSR to sort the shares. Portfolio 1 includes the companies with the lowest PSR and portfolio 5 includes the companies with the highest PSR. As was predicted by the literature review, portfolio 1 outperformed portfolios 2-5. Furthermore, the Sharpe ratio indicates that the excess return was not gained from taking on additional risk. Table 1 reports that PSR has two portfolios in the top five performing portfolios in terms of risk-return rewards (see Table 2). The returns of the PSR ratio drop substantially from portfolio 3 onwards. Portfolio 3 has an average PSR of 1.10. This is a possible indication that the PSR effect is strong in the South African market.

Panel B of Table 1 reports the results for portfolios that were formed using BVMV to sort the shares. It shows that the highest absolute return was made on portfolio 5. Portfolio 5 also gave the best return considering the risk associated with the portfolios as it has the highest Sharpe ratio and it is the second best performing portfolio overall (see Table 2). Portfolio 1 was the worst performing portfolio. BVMV has a smaller variation between portfolio 1 and 5 when compared to PSR and DE (Table 3). The results show a positive relationship between BVMV and average annual returns.

Panel C of Table 1 reports the results for portfolios that were formed using DE to sort the shares. It shows that the highest absolute return was made on portfolio 5. The middle three portfolios have roughly the same returns. However, portfolio 2 gives the best risk-return reward. This portfolio had the 4^{th} best performance overall in terms of risk-return reward as shown by Table 2. The results show clearly that companies with little debt provide the lowest returns which are also in line with finance theory. DE has the largest difference between portfolio 1 and 5 but the middle 3 portfolios are close to each other in terms of absolute returns. DE is the only variable where investors would have to take on more risk in order to achieve a higher return. There is no clear relationship between DE and average annual returns.

Panel D of Table 1 reports the results for portfolios that were formed using MV to sort the shares. It shows that the highest absolute return was made on portfolio 4. If we consider the Sharpe ratio we see that portfolio 3 performed the best in terms of the risk-reward relationship. This portfolio was also the 5^{th} best performing portfolio in terms of risk-return reward as shown by Table 2. It is interesting to note that portfolio 1 did not give the highest return. Furthermore there is small variation of the returns between the different portfolios. This is highlighted in Table 3. There seems to be a U-shaped relationship between average annual returns and MV.

In addition to reporting relationships between the company-specific variables and average annual return, Table 1 also reports a relationship between certain of the variables. It is clear that PSR is negatively related to DE and to some extent to BVMV (Panel A). MV is negatively related to DE and BVMV (Panel D). There is no clear relationship between PSR and MV (Panel D). DE and BVMV have a positive relationship (Panel B and C).

Table 1 Rebalanced monthly: Average return, average variable and Sharpe ratio.

Panel A

Price sales	Return	Sharpe	PSR	DE	MV	BVMV	# Co
Portfolio 1	24.27%	2.99	0.21	3.70	1 977 454	2.73	52
Portfolio 2	23.34%	2.96	0.53	1.63	5 460 028	1.05	51
Portfolio 3	18.99%	1.98	1.10	1.80	10 935 442	0.77	51
Portfolio 4	19.20%	2.23	2.67	0.79	17 697 535	0.66	51
Portfolio 5	17.33%	1.74	33.15	0.42	34 627 637	0.60	51

Panel B

BVMV	Return	Sharpe	PSR	DE	MV	BVMV	Avg Co
Portfolio 1	17.79%	1.60	16.61	0.56	38 196 670	0.13	52
Portfolio 2	19.09%	2.06	4.61	0.86	14 127 079	0.35	52
Portfolio 3	20.38%	2.37	7.10	1.43	10 579 935	0.59	52
Portfolio 4	21.41%	2.73	3.81	1.62	4 432 233	0.97	52
Portfolio 5	23.46%	2.98	2.98	3.60	1 526 022	4.09	51

Panel C

DE	Return	Sharpe	PSR	DE	MV	BVMV	Avg Co
Portfolio 1	15.02%	0.94	26.80	0.08	33 229 255	0.53	53
Portfolio 2	21.76%	2.93	3.78	0.29	12 510 177	0.60	53
Portfolio 3	21.38%	2.75	2.33	0.63	6 814 413	0.77	53
Portfolio 4	21.52%	2.75	1.68	1.27	4 908 529	1.14	53
Portfolio 5	22.86%	2.56	1.04	6.07	10 396 145	2.97	53

Panel D

MV	Return	Sharpe	PSR	DE	MV	BVMV	Avg Co
Portfolio 1	20.62%	2.44	7.67	2.95	98 657	2.98	53
Portfolio 2	19.05%	1.93	4.74	1.63	600 510	1.19	53
Portfolio 3	21.71%	2.76	8.74	1.09	1 936 988	0.77	53
Portfolio 4	21.97%	2.67	6.09	1.17	6 617 817	0.62	53
Portfolio 5	18.89%	2.13	8.69	1.42	59 187 518	0.39	53

Notes: Table 1 reports the average annual returns and average variable for portfolios 1 to 5 where the portfolios are rebalanced monthly. The table also reports the Sharpe ratio. Panel A to Panel D reports these measures for each instance where the share selection of the portfolios was determined using the four different variables.

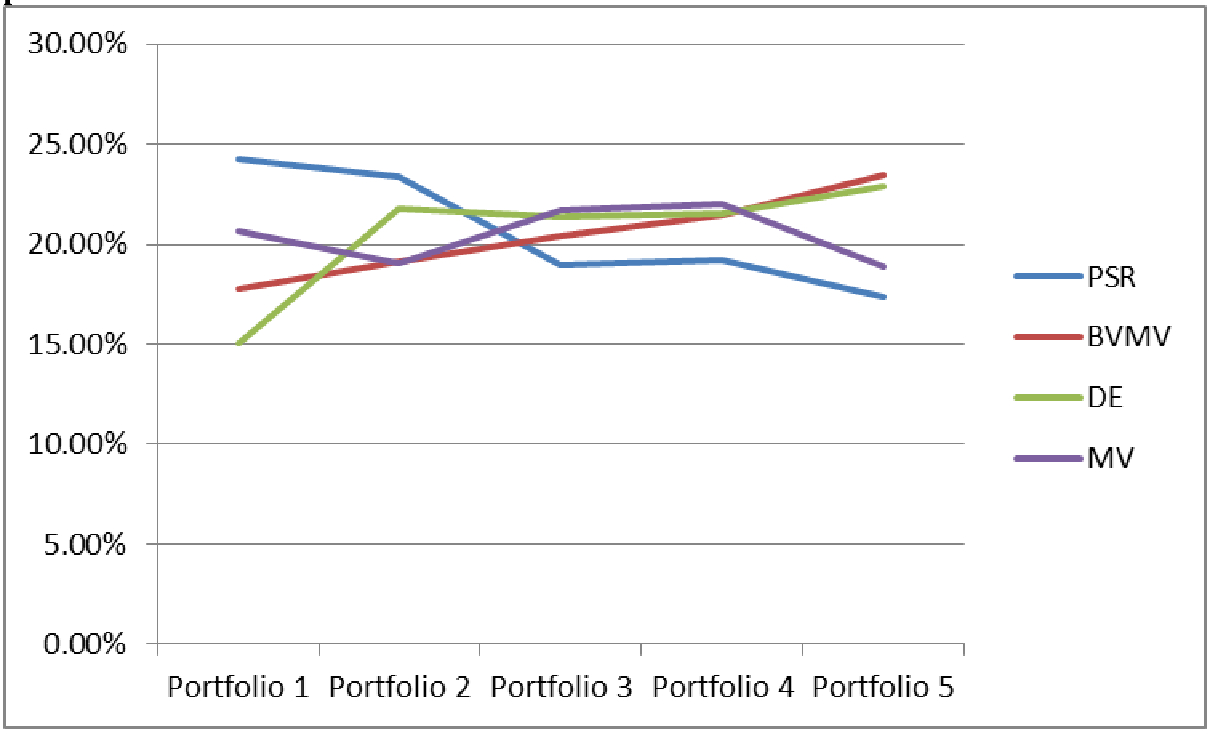
Table 2 Rebalanced monthly: Top performing portfolios risk-adjusted

Rank	Portfolio	Sharpe
1	PSR 1	2.99
2	BVMV5	2.98
3	PSR 2	2.96
4	DE 2	2.93
5	MV 3	2.76

Table 3 Rebalanced monthly: Spread between portfolio 1 and 5

	PSR	BVMV	DE	MV
Difference 1-5	6.94%	5.67%	7.84%	1.73%

Graph 1 Rebalanced monthly: Comparison of average annual returns across all portfolios and variables



Where portfolios were rebalanced monthly, Portfolio 1 of PSR outperformed all other portfolios at an average annual absolute return of 24.27%. This is 0.81% higher than the next best portfolio, which is portfolio 5 of BVMV.

6. Discussion of results and limitations

The portfolio analysis indicates that PSR is the superior share selection tool of the four variables included in the study as the highest returns were made by PSR portfolios. A concern for every investor is the risk he or she has to take to obtain superior returns. Modern finance theory postulates that one should need to take more risk to increase one's return. However, when the Sharpe ratio was calculated for the different portfolios it was found that one could obtain superior returns using PSR as a portfolio selection tool without taking on additional risk. A limitation here is that the risk of the market portfolio is not known and it is not known to what extent risk of the PSR strategy compares to the market. This study only compares the risk of a PSR strategy to that of the other three variables included in the study. It is worth quantifying this risk differential between a PSR strategy and the market portfolio in future research.

So how do the results compare to Fisher's strategies? Let us recall what his PSR strategy entails. Fisher considers a "super" share to be a share where the average US returns are approximately 15%-20% per annum over the long term (Fisher, 1984). If we consider fluctuation in the exchange rates we find that over the same period the South African Rand appreciated against the US Dollar by 8.11% (Exchange rate at 1/1/2002: R10.49, 12/12/2013: R9.63). Therefore an equivalent range in South Africa over the sample period would be 13.78% - 18.38%. The share should also be bought at a PSR of 0.75 or less. The results of the portfolio analysis demonstrates that the lower PSR portfolios, portfolio 1 and 2, have on average (monthly) a PSR below 0.75 and are the highest performing portfolios. Thus this is solid proof for Fisher's strategy.

PSR, DE and BVMV demonstrate a clear linear relationship with average annual returns whereas MV does not have any clear relationship and a U-shaped relationship was observed.

The portfolio analysis showed that if one was to use any of the four variables to select a portfolio of shares one would outperform the market 64% of the time. Therefore sorting portfolios in this one-dimensional way using the four company specific variables MV, BVMV, PSR and DE can be useful to an investor.

The return differential between the small portfolios and large portfolios of all the variables were not as pronounced as in other markets. Table 20 below demonstrates the difference in results between this study and three other markets.

Table 4 A comparison of return differential between smallest and largest portfolio

	SP/PSR	BVMV	DE	MV
This study	6.94	5.67	7.84	1.73
Gharghori et al.	4.39	27.68	15.42	44.34
Leledakis et al. 2003	11.16	31.56	41.64	61.32
Leledakis et al. 2001	18.60	18.84	15.24	21.60

This leads us to believe that the effects of the variables analysed in this study is not as strong in the South African market as in other markets. The size effect and BVMV effect is not very strong. This does support the results of the regression analysis where the coefficients of the company specific variables are smaller than what was reported by, for instance, Leledakis and Davidson (2001).

7. Conclusion

The aim of this study was to extend the research that has been performed on the PSR or S/P in South Africa. Three unpublished master studies (Fricker, 1996; Mouton, 1998; Russel, 2004) reported that S/P did not have significant explanatory power for future share returns in South Africa. However, these studies were performed over short periods and there is a possibility that the results were period specific. This is especially so because the results are so different to other markets such as the United States of America and the United Kingdom. One could argue that, as the Johannesburg Stock exchange and the South African market matures, the results will converge with the developed markets' results.

As such this study adds to the research in that it is the first study to do an extensive portfolio analysis especially on the PSR ratio as a share selection tool. This study is the first to control for a survivorship bias by choosing the sample prospectively and including companies that delist during the sample period. The sample size was extended to include an average of 254 companies per month in the sample compared to Fricker (1996) who tested 186 companies and Russel (2004) who tested 76 companies.

The portfolio analysis reported that portfolios formed using PSR gave the best returns. These results substantiate Fisher's theory that the PSR is an initial indicator of a share's popularity but one needs to do a thorough analysis before making a final decision to invest. The portfolio analysis points to the fact that the PSR is a good indicator of value investments, in other words those investments where the shares are currently undervalued by the market. This is in line with Fisher's theory.

In general there was a positive relationship between DE and share returns and BVMV and share returns. There was a negative relationship between MV and share returns as well as PSR and share returns.

As with most research, some questions were answered and more were created. The following areas were identified as possible future research areas:

- Why does the PSR perform so well in the portfolio analysis? How can we identify individual companies with low PSRs that will do well?
- Will the result be different for different sectors?
- Is the PSR a good predictor of future excess returns?

A limitation to this study is that a lot of information is lost in the process of determining annual average returns and variables. We recommend that more sophisticated statistical methods be used to gain more insight into the behaviour of the variables and returns generated.

In conclusion, the results of the portfolio analysis indicate that PSR is a superior share selection tool as the highest returns were made by low PSR portfolios. It is believed that this study will be useful to investors and asset managers, whether from South Africa or abroad, and that the study adds to the literature on the PSR in South Africa.

8. REFERENCE LIST

Auret, C. J., & Sinclaire, R. A. (2006). Book-to-market ratio and returns on the JSE. *Investment Analysts Journal*, (63), 31–38. Retrieved from http://www.iassa.co.za/journals

Banz, R. W., & Breen, W. J. (1986). Sample-dependent results using accounting and market data : some evidence. *The Journal of Finance*, *41*(4), 779–793. Retrieved from http://www.jstor.org/stable/2328228

Barbee, W. C., Mukherji, S., & Raines, G. A. (1996). Do Sales-price and Debt-equity explain stock returns better than firm Book-market and size ? *Financial Analysts Journal*, *52*(2), 56–60. Retrieved from http://www.jstor.org/stable/4479907

Bird, R., & Whitaker, J. (2003). The Performance of value and momentum investment portfolios: recent experience in the major european markets. *Journal of Asset Management*, *4*(4), 221–246. doi:10.1057/palgrave.jam.2240136

Brahmana, R. K., & Hooy, C. W. (2011). The equity valuation accuracy among multiple screening models: a study from an emerging stock market. *International Business Management*, *5*(2), 50–57. doi:10.3923/ibm.2011.50.57

Chan, L. K. C., Hamao, Y., & Lakonishok, J. (1991). Fundamentals and stock returns in Japan. *The Journal of Finance*, *46*(5), 1739–1764. doi:10.2307/2328571

Chou, P. S. R., & Liao, T. L. (1996). The relative performance of the PER and PSR filters with stochastic dominance: evidence from the Taiwan Stock Exchange. *Applied Financial Economics*, *6*(1), 19–27. doi:10.1080/096031096334439

Dhatt, M. S., Kim, Y. H., & Mukherji, S. (1999). The value premium for small-capitaliation stocks. *Financial Analysts Journal*, *55*(5), 60–68. doi:10.2469/faj.v55.n5.2300

Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, *47*(2), 427–465. doi:10.1111/j.1540-6261.1992.tb04398.x

Fama, E. F., & Macbeth, J. D. (1973). Risk, return, and equilibrium: empirical tests. *Journal of Political Economy*, *81*(3), 607–636. doi:10.1086/260061

Fisher, K. (1984). *Super stock* (p. 384). McGraw-Hill. doi:10.1036/0071499814

Fricker, D. S. (1996). *An analysis of the power of the Sales-to-price ratio in explaining share returns.* University of Cape Town.

Gharghori, P., Stryjkowski, S., & Veeraraghavan, M. (2013). Value versus growth: Australian evidence. *Accounting and Finance*, *53*(2), 393–417. doi:10.1111/j.1467-629X.2012.00474.x

Graham, M., & Uliana, E. (2001). Evidence of the value-growth phenomenon on the Johannesburg Stock Exchange. *Investment Analysts Journal*, *53*, 7–18.

Halfeld, M. (2000). A fundamental analysis of Brazilian Stock returns. *Emerging Markets Quarterly*, *4*(4), 32–55.

Hoffman, A. J. (2012). Stock return anomalies: evidence from the Johannesburg Stock Exchange. *Investment Analysts Journal*, *75*, 21–41. Retrieved from http://www.iassa.co.za/journals

Jacobs, B. I., & Levy, K. N. (1988). Disentangling equity return regularities: new insights and investment opportunities. *Financial Analysts Journal*, *44*(3), 18–43. doi:10.2469/faj.v44.n3.18

Kothari, A. S. P., Shanken, J., & Sloan, R. G. (1995). Another look at the cross-section of expected stock returns. *The Journal of Finance*, *50*(1), 185–224. doi:10.2307/2329243

Lakonishok, J., Shleifer, A., & Vishny, R. W. (1994). Contrarian investment, extrapolation, and risk. *The Journal of Finance*, *49*(5), 1541–1578. Retrieved from www.jstor.org/stable/2329262

Leledakis, G., & Davidson, I. (2001). Are two factors enough? The U.K. evidence. *Financial Analysts Journal*, *57*(6), 96–105. doi:10.2469/faj.v57.n6.2496

Leledakis, G., Davidson, I., & Karathanassis, G. (2003). Cross-sectional estimation of stock returns in small markets: The case of the Athens Stock Exchange. *Applied Financial Economics*, *13*(6), 413–426. doi:10.1080/09603100210143118

Lev, B. (1989). On the usefulness of earnings and earnings research: lessons and directions from two decades of empirical research. *Journal of Accounting Research*, *27*(1), 153–192. doi:10.2307/2491070

Mouton, J. J. C. (1998). *A comparison of the power of the sales to price ratio to that of the debt-to-equity ratio, book-to-market value to equity ratio and market value of equity in explaing stock returns on the JSE*. University of Stellenbosch.

Mukherji, S., Dhatt, M. S., & Kim, Y. H. (1997). Fundamental analysis of Korean stock returns. *Financial Analysts Journal*, *53*(3), 75–80. Retrieved from http://www.jstor.org/stable/4479998

Nathan, S., Sivakumar, K., & Vijayakumar, J. (2001). Returns to trading strategies based on Price-to-earnings and Price-to-sales ratios. *Journal of Investing*, *10*(2), 17–28. doi:10.3905/joi.2001.319458

Russel, P. F. (2004). *Does the Sales-to-price ratio possess more explanatory power in determining percentage share returns for JSE data compared to previously assessed variables?* University of Stellenbosch.

Senchack, A. J., & Martin, J. D. (1987). The relative performance of the PSR and PER investment strategies. *Financial Analysts Journal*, *43*(2), 46–56. doi:10.2469/faj.v43.n2.46

Sharpe, W. T. (1966). Mutual fund performance. *Journal of Business*, *39*(1), 119–138. Retrieved from http://www.jstor.org/stable/2351741

Suzuki, M. (1998). PSR—an efficient stock-selection tool? *International Journal of Forecasting*, *14*(2), 245–254. doi:10.1016/S0169-2070(98)00030-2

Van Rensburg, P., & Robertson, M. (2003). Explaining the cross-section of returns in South Africa : attributes or factor loadings ? *Investment Analysts Journal*, *58*(5), 1–11. doi:10.1057/palgrave.jam.2240114

Vanstone, B. J., & Agrawal, A. (2006). Do Wall Street fundamentals work in the ASX200 ? *Bond University Information Technology Papers*, 1–7. Retrieved from http://epublications.bond.edu.au/infotech_pubs/20

MAF005 Effectiveness of management accounting skills: Perception of decision-makers of Small, Micro and Medium Tourism Enterprises (SMMTEs) in Cape Town, South Africa

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Abstract

Small, medium and micro enterprises (SMMEs) in general and small medium and micro tourism enterprises (SMMTEs) in particular are considered as one of the possible vehicles to decrease the high unemployment rate in South Africa. Furthermore, the SMMEs impart vital entrepreneurial skills to enable those previously disadvantaged to not only create employment for themselves and others, but also to meaningfully participate in the economic growth of the country. The tourism sector in South Africa further present potential opportunities for SMMEs to bring about economic growth and employment creation especially in major cities such as Cape Town. Due to the lack of management skills, among other factors, SMMTEs may not fully realize their potential. The question that arises is: what is the decision makers' perception of the effectiveness of the current management accounting skills employed to make decisions? The aim of this study is to find out how the decision makers of SMMTEs perceive management accounting skills in the day-to-day running of their businesses; also to determine their thoughts about implementing management accounting skills to facilitate their decisions making. Data were collected by means of a structure questionnaire that comprised closed-ended questions. The researcher found that decision-makers in SMMTEs in Cape Town find management accounting skills effective for the management of their business but do not use it for decision making as they rely more on external parties such as accountants for their financial duties. However the findings of this research may assist the government to implement management accounting training sessions among owners and managers of SMMTEs through the newly created ministry of small businesses to improve the management of their businesses as they will be able to use management accounting skills in the day-to-day running of their organisation and make effective decisions.

Keywords: Management accounting; Management accounting skills; Transport tourism business owners; Western Cape; Decision-makers of small businesses.

INTRODUCTION

Mago and Toro (2013:21) state that the perceptions of small businesses are different and can be influenced by the level of economic growth in each country. In South Africa, SMMEs represent approximately 95 per cent of all businesses in the country, contribute nearly 30 per cent of the Gross Domestic Product (GDP) and employ formally around 50 and 60 per cent of the country labour force (Malapane & Makhubele, 2013:197).

SMMEs are more and more perceived by their respective government as playing a significant role in the economies by increasing the GDP rate and decreasing the unemployment rate of many countries. In fact, the survival of SMMEs is essential as illustrated by Tsabalala (2007:1) amongst businesses in South Africa; more than 80 % of SMMEs contribute about 40% towards the Gross Domestic Product (GDP) of the country. The unemployment rate in South Africa was estimated at 25.2% as mentioned in SA Stats report of 2013 (StatsOnline: 2013), the SMMEs have the potential to reduce that rate through job creation; according to Tassiopoulos (2010:16), the expansion of SMME sector has the ability to reduce poverty, create employment and raise a decent lifestyle for a large number of South Africans citizens located in the rural and urban areas.

The creation of the Small Enterprise Development Agency (SEDA) in December 2004 by the Department of Trade and Industry (DTI) means that the South African government has seen the positive effects of SMMEs towards the economic growth and therefore has shown its commitment towards SMMEs development. The government, by means of SEDA, is set to develop, support and promote small business in South Africa and to ensure their growth and sustainability (Jassiem, Damane, Dlamini, Swartz, Bortaar, Mabuthile, Mali, Mahote, & Bruwer, 2012:6911). Government has prioritised entrepreneurship and the improvement of SMMEs as the facilitator to increase economic growth and development, as well as decrease the unemployment rate in the country; hence the implementation of SMME-related policies by the DTI to ensure and provide adequate assistance, both financial and non-financial, to SMME owners for a long term success (DTI, 2013). The DTI has launched a new national newspaper called Small Business Connect (SBC); the aim of SBC is to develop the movement of important opportunity-related information and business enhancement resources in the SMME sector (DTI, 2013). Due to critical challenges faced by SMME owners, the government has created the ministry of small businesses; the focus of this new ministry is to make the situation more encouraging for the growth of small business owners (Greve, 2014: Online).

The 2010 Soccer World Cup helped to boost the incoming number to 1.75 million, an increase of 16% (Western Cape Business, 2005). The City of Cape Town alone welcomes 1.8 million visitors every year and that adds approximately R14-billion to the city’s economy (Western Cape Business, 2013). In 2009, 1.5 million foreign visitors spent R20-billion in the Western Cape, according to the province’s finance department. Tourism has always been selected by the Cape Town City Council as one of the economic activities which will play an important role in Cape Town’s future (City of Cape Town, 2004). Kristen and Rogerson (2002) earlier aver that the tourism industry was one of the key drivers of the economic growth and reduction of unemployment in South Africa. This is currently evident as the tourism industry contributes immensely in terms of investment, employment and the diversification of services in the Western Cape” (South Africa.Info, 2013)

According to Fatoki and Garwe (2010:730),”the failure rate in South Africa is one of the highest in the world”. In fact, up to 80 per cent of SMMEs flop within the first five years of business operations (Giliomee, 2004:2). With such a high failure rate of SMMEs, it is not surprising that the unemployment rate in the country remains high. This suggests that the government target of creating 5 million jobs (225000 additional Jobs from a tourism industry (National Department of Tourism, 2012) by 2020 may be far-fetched if the failure of SMMEs continues unabated (Cosatu, 2011). The continued failure of the SMMEs suggests that the government interventions are either ineffective or inappropriate. In fact, Bruwer (2010:1) attributes a high failure rate of the SMMEs to a lack of accounting resources and skills. In support of Bruwer's sentiments, Shaku (2011:181) identifies some studies in other countries that singled out a lack of management accounting skills among the decision makers of the SMMEs as the main reason for the high failure rate. In the same line of argument, the tourism industry is suffering because of lack of experience; a lack of managerial knowledge that includes the lack of management skills, inadequate education, unfamiliarity of modern management and marketing techniques and a lack of strategic planning amongst owners or owner-managers of small businesses (Tassiopollos 2010:4). Morrison and Teixeira (2004:168) identify the lack of multi-skilling in every category of staff, also limited resources and capacity available to narrow skill gaps as one of the obstacles to small tourism firm business performance. on other hand, Frey and George (2010:626) indicated that the lack of responsible management intention (RMI), which is the willingness of tourism managers to commit resources into changing management practices. Despite this emerging evidence, little research has been conducted to investigate the management accounting skills of the owners, as decision-makers, of SMMEs in the tourism industry in the Western Province of South Africa. The purpose of this paper is to determine the decision-makers perception about the effectiveness of management accounting skills in the running of their business, as well as about implementing management accounting skills to facilitate their decision making.

The remaining part of this paper is divided into sections on literature review, research methodology, presentation of results and discussion thereof, conclusion, recommendations and suggestions for further studies.

LITERATURE REVIEW

Theoretical and conceptual framework

Theories are used to help define and give details to phenomena (Peterson & Bredow, 2009). The effective application of theory in research is critical to the development of new knowledge (Lim et al., 2013). In this paper, the expectancy theory is used to explain the motives for decision makers in the tourism business to make certain business decisions and what management skills inform these decisions.

The expectancy theory

The expectancy theory was propounded for the first time by Vroom in 1964 within the domain of organizational psychology. Based on Vroom's theory, a person's first choice towards a result (like successful performance) depends on the apparent chance that the attempt will direct to winning performance ("expectancy") (Mitchell & Albright, 1972:2). Expectancy theory has been able to successfully facilitate decision making (Fry, 1975). The application of this theory was made in hotel employees by Chiang & Jang (2008) to observe the validity of the theory through employee's motivation, and results showed that employees in the hotel of that specific area of research tend to have more intrinsic motivation (enjoy the work, good mood, satisfaction and happiness) than extrinsic motivation (money, cars, houses) which lead the authors to determine that expectancy theory has a good validity at work as each employee first thinks about performing the job well, knowing that good performance would lead to good reward. This facilitates the employees to: work hard, put more time and dedication, focus and energy towards their workload and by that make effective decisions to avoid failure. In the current study, it is imperative to relate Vroom's theory of expectancy and the behaviour adopted by decision-makers of SMMEs in the Tourism industry when making decisions using management accounting. Vroom (1964) recommends that an employee's perceptions about Expectancy, Instrumentality, and Valence correlate psychosomatically to create a motivational strength such that the worker acts in manners that bring aspiration and escape discomfort.

Overview of Small, Medium and Micro Enterprises (SMMEs) in South Africa

Small, medium and micro enterprises (SMMEs) in South Africa are defined as businesses with at least one owner, where the owners are directly involved in the management process, and where the firm employs a maximum of 200 employees (Rootman & Kruger, 2010:107).Sharing the same view with Rootman and Kruger, Cronje et al. (2000) defines SMME as any business that has less than 200 employees, less than 5 million rands as annual turnover, less than 2 million for capital assets and that the owner of such business must be directly involve in the management.

Figure 1: Defining four size classes of SMMEs by numbers of employees, total annual turnover and total gross asset value (Berry et al., (2002:13)

Size Class	**Micro**	**Very small**	**Small**	**Medium**
Number of employees	< 5	< 10	< 50	< 200
Total annual turnover	<R0.50 million	< R2.50 million	< R10.00 million	< R25.00 million
Total gross asset value	<R0.10 million	< R0.70 million	< R3.00 million	< R8.00 million

The failure rate of South African SMMEs is too high; in fact 80% of all SMMEs fail within their first 5 years of existence (Bosch et al., 2006:663). Various reasons have been identified for SMME failure, amongst them Mabaso (2008) have identified funding, access to finance and poor management skills. Kazooba, (2006:12) stated that lack of structure and infrastructure in decision making was also a significant factor in the failure of small businesses. Lack of money is a constraint for SMME development but in the process of SMMEs expansion and growth, management accounting skills are probably as important as money (Shaku, 2011). In this regard, Hansohm (1992:140) asserts that only poor accounting, particularly financial and management skills and knowledge, are the reason for the failure of SMMEs. According to Zimmerer and Scarborough (1994), in South Africa the first obstacle of succeeding in business is not only getting the funds from the bank but also managers needed to have the necessary business skills to market their business ideas correctly.

From the abovementioned, it comes out that SMMEs are important for the country's economy and job creation, Tourism in the Western Cape of South Africa is known as one of the pillars of the economic growth within the province in particular and the country in general. However, it was found by several researchers that small tourism businesses are facing management challenges which often lead them to failure.

Despite this emerging evidence, little research has been conducted to investigate the perception of management accounting skills by the owners and managers, viewed as decision-makers of SMMTEs in the Western Province of South Africa.

Tourism industry

Tassiopoulos (2010:37) defines tourism as a service sector with the most complicated product that depends on a very dedicated supply chain such as travel traders, travel wholesalers, transporters, hoteliers, restaurateurs, and others that offers an element of the whole product. Tourism is vital to the growth of South Africa and its population and it is presently the fastest developing industry, employing an estimated 600 000 people (Mbatha 2013). For Frey and George (2010:622) tourism is one of the major businesses around the world and of course in Africa which is seen as having the potential to address many of the socioeconomic challenges facing the continent. As a reductor of the unemployment rate in the country, at the 1998 Job Summit in Johannesburg, the tourism sector was recognized as having the greatest potential to reduce the high levels of unemployment (Rogerson & Visser, 2004:4).

Over the past 20 years Tourism has become a major part of the discourse of sustainable development (Murphy & Price, 2012:174). In regard to sustainability of small businesses in the tourism sector, Tassiopoulos (2010:36) deduces that micro and small tourism enterprises seem to be less sustainable than medium sized enterprises. On the other side Saayman & Slabbert (2001:9) observe this sustainability issue as being critical for South Africa, as the country desires sustainable employment, especially in tourism.

Management accounting

Management accounting is one of the key instruments for decision making at any level of the organisation (Mayanga, 2010:5). The concept of management accounting involves a set of tools and techniques to support the planning, decision making and control in organisations (Collier, 2009:5). In other words, Collier describes that management accounting tools and techniques are particularly important to run businesses successfully. In an SMME, management accounting is an important purpose concerned with cost measurement, product or service costing and provision of information for decision-making (Shaku, 2011). However business entities require at least some employees who are skilled in management accounting in order to run an organisation proficiently and successfully. Management accounting skills are beneficial in making any business entity competitive and successful (Gowthorpe, 2008).

Management accounting, as compared to financial accounting, develops information for internal use in the entity by applying methods such as standard costing and job order costing methods that according to Reider (2008:157) business finds very difficult to apply as they are scared of management accounting. Kasekende & Opondo (2003:11) mentioned management accounting skills as the ones that are most important in ensuring survival, sustainability and competence in the business.

Management accounting skills

Management accounting as a tool for decision making for internal users requires certain skills which enable the user to apply them. A skill can be viewed as the ability to do something well. Green et al., (2012:187) define skills as "the abilities of individuals for which there is a demand within a formal economy". Such skills include management and leadership abilities. Tether et al., (2005) share the same view as Green et al. but mentione that such skills are obtained through education, training and/or experience. Lucey (2005:6) explains management accounting skills as those skills that are required to prepare management reports and accounts that provide information for day to day and short term decision making. Shaku (2011:45) identifies that the lack of management accounting skills was increasingly responsible for internal business failure as skills relating to cash flow and current asset management often lacked within failed businesses. According to Ahmad et al., (2012:77), the lack of awareness of new management accounting techniques, lack of top management support on training and education of employees, lack of expertise are the reasons why the use of traditional management accounting techniques remains strong. The use of costing techniques such as activity based costing; standard costing and variance analysis is not as popular among SMMEs as with large corporates (Shields & Shields, 2005). Wu & al., (2007) indicate that effective decision making is a very important key for the success of the business these days, therefore critical business decisions like choice of supplier and goods and services pricing must be made using necessary management information than use unstructured models and at times include owner manager preference and 'common sense'.

The following management accounting skills have been recognized by the Chartered Institute of Management Accountants (CIMA) and various researchers and authors (Niemand, 2006; Kasekende & Opondo; 2003; Damitio & Schmidgall; 2007; CIMA, 2002) as being beneficial for the effective running of SMMEs.

- **Preparation of budgets:** A budget is a detailed plan of action for a future period, expressed in quantitative and monetary terms. Budgeting is an important factor for consistency and growth in any business (Abdurahman et al., 2012:7529). Drury (2008) describes a budget as a financial plan that assists owners and managers of businesses to make various management decisions.
- **Product costing and pricing:** Abdurahman et al. (2012:7531) define product costing and pricing as a plan that describes the process of sale and manufacturing cost of the product or finished good before it is delivered to the market. Costing and pricing are abilities that are essential for the fruitful management of a business (Fischer & Krumwiede, 2012).

- **Understanding of cost behaviour and cost allocation:** In management accounting, costs behave differently. Costs such as variable cost per unit remain constant while the fixed cost per unit change irrespective of the change in production but the opposite applies when with total cost i.e. total variable cost changes while total fixed cost stays constant (Garrison et al., 2010). Allocating manufacturing overheads is challenging for most small business owners specifically to identify, assign and incorporate them into the final cost price of the product (Ryan & Hiduke, 2006).
- **Activity Based Costing:** Activity based Costing (ABC) is a method or system used to assign costs to products or, services or customer; the allocation of costs is based on the consumption of resources of each product, service or customer (Gupta & Galloway, 2003). Reider (2008:159) finds activity based costing as more useful management accounting tool for small business owners
- **Calculation of Profits and Loss:** Calculating a profit or loss in the business is a challenge for decision makers or managers especially when they have to face it on a regular basis. In accounting context, the decision maker should know that the more the expenses or total cost is high; the more the profit will be low which can tend to be a loss in the business (Toms, 2010). However Mott (2012) identifies the appointment of a competent accountant for the business could be helpful for the purpose of the profit and loss calculation.
- **Calculation of Cost Volume Profit analysis (CVP Analysis):** CVP analysis is one of the most important tools that can be implemented by SMME decision makers to understand the behaviour of selling price, variable costs, fixed costs and volume in relation to profit (Shaku, 2011).
- **Managing of Product Life Cycle (PLC):** The PLC represents the unit sales curves of any service or product covering from the time it was first placed in the market till it was removed (Rink & Swan, 1979:219).
- **Standard costing and Job order costing:** Shaku (2011) defines standard costing as the management accounting tool that is used during the production process by owners and managers to identify the standard cost of materials, labour and overheads that they would like to achieve; Berger (2011:1) states that standard costing facilitates decision making and that it is a helpful tool for SMME decision makers to observe the difference between what was planned and what did really happen so that they can take appropriate decisions to correct the situation and avoid it in the future. Job order costing is a technique of production of goods and services used once only when the customer has placed the order (Eric et al., 2011); Job order costing is advantageous for small business in the sense that the owners or the owners' managers or decision makers apply specific costs on the production of goods or services based on the customer demand (Greenberg & Schneider, 2010).
- **Just in time Costing** (JIT): Just like Job Order Costing, Just in Time (JIT) costing is the management accounting method that motivates manufacturing of goods or services only when they are demanded by the customer. However, JIT costing is advantageous and a bit different from Job Order Costing in the way of stock storing. As stated by Niemand

(2006), JIT is more useful by small business because it decreases the inventory holding costs and avoids inventory wastage or spending expense on rent.

Perception of management accounting by tourism's SMMEs

Although contributing immensely towards GDP and national employment (Abor & Quartey, 2010), SMMEs in the tourism industry especially in the Western side of South Africa are facing several challenges in the management of their business which might therefore stop this contribution toward the GDP and the employment rate of the country. The acquisition of these skills and tools will be very helpful to run the tourism business successfully. According to Morrison and Teixeira (2004:168), one of the obstacles to SMMTE's performance is the nonexistence of multi-skilling in every single category of employees, also restricted resources and capacity accessible to narrow skill gaps. Furthermore, Frey and George (2010:626) argue that tourism managers are missing to obligate resources into the changing management practices; this is seen as the lack of responsible management intention (RMI) and consequently regarded as a factor failure of tourism. Ateljevic (2007:308) perceives SMMEs' failure as one of the direct consequences of owners or owners-managers management incompetence. Management accounting as compared to financial accounting develops information for internal use in the entity by applying methods such as standard costing and job order costing methods that according to Reider (2008:157) business finds very difficult to apply as they are scared of management accounting.

The attainment and application of management accounting skills in the decision making process allows for the identification, management, mitigation or even avoidance of the major risks that the SMME is faced with (Gowthorpe, 2008:34). Adequate business management and technical skills are needed to integrate activities, effectively adopt proactive decision making and achieve organizational goals (Zvomuya, 2010). Shaku (2011:45) identified that the lack of management accounting skills was increasingly responsible for internal business failure as skills relating to cash flow and current asset management often lacked within failed businesses. According to Saayman and Slabbert (2001: 16), the lack of experience, lack of managerial knowledge, and lack of knowledge concerning tourism trends and prevailing opportunities in the tourism industry are some of the reasons why the small businesses in tourism are suffering. Saayman and Slabbert (2001:16) consider these as some of the main explanations for tourism business failure. In their report findings, Morrison and Thomas (2004:10) state that SMMTEs' owners lack of comparable knowledge as they find calculations difficult due to the lack of definitional and conceptual knowledge.

Very little pertinent studies have been undertaken in the regard of the failure of tourism's SMMEs in Western Cape, but despite the limitations of quantitative data, the existence of a skills gap within the tourism sector is unquestionable (Earle-Malleson, 2007). According to Pellinen (2003) management accounting in small tourism businesses is still unexplored, very little is known in the tourism industry about management as the initial focus of management accounting was traditionally on manufacturing enterprises (Pavlatos & Paggios, 2008:82).

According to Ahmad et al., (2012:77), the lack of awareness of new management accounting techniques, lack of top management support on training and education of employees, and lack of expertise are the reasons why the use of traditional management accounting techniques remains strong. The use of costing techniques such as activity based costing; standard costing and variance analysis is not as popular among SMMEs as with large corporates (Shields & Shields, 2005). Wu et al., (2007) think that effective decision making is a very important key for the success of the business these days therefore critical business decisions like choice of supplier and goods and services pricing must be made using necessary management information than use unstructured models and at times include owner manager preference and 'common sense'.

The use of such informal criterion in coming up with business decisions often results in poor cost measurement, product/service costing and information for decision making which ultimately leads to SMME failure. Budget preparation is one of the management accounting skills that is beginning to gain popularity among the SMME community (Gowthorpe, 2008). According to Shim et al. (2011), budgeting is a planning and control system process because it communicates to all the members of the entity what it is expected from them. By budget planning Shim et al. (2011) define it as determining the activities to be met so that the goals and the objectives of the business can be achieved, at this point a decision will have to be made by everyone involved. Asharany et al. (2010) indicate that activity based costing is more used than cost calculation alone in SMMEs.

According to Dodge and Robbins (1992), recording cash flows, inventory controls, cost controls and other management accounting tools are challenges faced by small business, these challenges continue in most phases of the business life-cycle. Also, Ng et al. (2013:94) acknowledge that the management accounting practices executed by SMMEs are unlikely to be management accounting function, but moderately a broad management or accounting functions. The study conducted by Shaku (2011) suggests that technically well-qualified owner/managers with strong budgeting skills are most likely to achieve business success. Budgeting in the tourism sector is the skill with a greater application, lightly opposite to Activity-Based Costing, Customer Profitability Analysis and Balanced Scorecard which has a poor use (Faria, Trigueiros & Ferreira, 2012). Furthermore the payback period is the most and first used investment evaluation method as confirmed by Fatoki et al., (2010:1275) "Payback is often used as a first screening method" while Internal Rate of Return, Accounting Rate of Return and Net Present Value are rarely used as investment methods as they often involve complicated calculations which owners /managers of SMME cannot compute (Shaku, 2011).

Determining how to measure performance of a company is always difficult (Philipps, 1999:173). Basic evaluation methods such as gross profit margins and net profit margins are not readily available as financial statements that help compute these are also not available (Kasekende & Opondo, 2003:3). Pressure has however been increasing on the need to keep financial statements as many providers of finance require these in making decisions on whether to grant or deny credit (Bbenkele,2007:13). The failure to use performance evaluation techniques often results in the business having perceived profits or losses as actual amounts cannot be ascertained until the business collapses (Niemand, 2006:12).

Halabi et al., (2010) found that the inappropriate use of management accounting in the business was one of the reasons why SMMEs fails.

The study conducted by CIMA (2012:6-11) revealed the following:

- Medium enterprises do use more management accounting than smaller ones.
- Business owners should partner with management accountants for a better preparation of management accounting information for decision making purposes, also to avoid spending time on financial matters, rather promote the business and make more profit.
- There is a need of provision of management accounting training and education for small businesses owners and managers because they do not know how to use the management accounting tools such as budgets, product pricing and costing, CVP and many other management accounting tools for decision making and effective and efficient management of the organisation, hence the recommendation of partnership with management accountants.

According to Lavia Lopez and Hiebl (2014:1), the practice of management accounting in SMMES is low and different from large companies. SMMEs need special care when it is about management accounting because they have separate capitals, also because they face more managerial skills challenges than large organisations (Lavia Lopez & Hiebl, 2014:3). In order to compete with large businesses, SMMES should implement systems that enable them to manage their resources and control their information (Mitchell & Reid, 2000); Management accounting can assist SMMEs to meet such needs of management information (Johnson & Kaplan, 1987). Research conducted by Lavia Lopez and Hiebl (2014:5) indicates that SMMEs do not only use management accounting lesser and differently from large enterprises but use it to provide information to external stakeholders such as banks or to extend their network providers; however small businesses do not use management accounting for decision making purposes. Halabi et al., (2010) identified lack of training amongst SMMEs owners and managers as one of the reasons why the usage of management accounting is low in small businesses than large enterprises. Responsible owners and managers of small businesses with a huge need of improving their management performance would highly use management accounting to support their day-to-day run of the organisation and meet their objectives (Ritchie & Richardson, 2000). The use of tools such as balanced scorecard facilitates the identification of crucial performance obstacles and improves the overall performance of the organisation (Hakola, 2010). Loo and Davis (2003) perceived the non-use of management accounting in the business as a channel to failure, bad investment decisions (e.g. buying a bus) and bankruptcy.

Government support of SMMEs through training skills development

After the apartheid era, the South Africa government has engaged new regulations to restructure and develop not only the socio-political or socio-economic aspects in general but the expansion of a specific sector of the economics of the country, the development of SMMEs (Visagie, 1997:660). Furthermore, the South African Government identified skills and competencies as critical success factors driving for SMMEs in the country (Bukula, 1995).

The South Africa government is more concerned about the expansion of small businesses in the country hence the acknowledgement of the economic potential and unemployment reduction with strong SMMEs sector (Van Eeden et al., 2003). Kaplan (2004:219) points out the same statement as Van Eeden et al. (2003) but relates it to the tourism concept as according to this author, tourism has the potential to attract foreign exchange and contribute to GDP.

The country has shown its involvement in the SMME's success through the creation of SEDA (Small Enterprise Development Agency) in 2004 which has as mission the promotion, the development and support of small business all over the country; SEDA has to ensure the growth and sustainability of small business countrywide and provide them with all the necessities and facilities possible (Ladzani & Netswera, 2009:228).

Although Tourism in South Africa is more successful in the private sector, it is imperative for a government to intervene and assist SMMTEs to meet their objectives (Kirsten & Rogerson, 2002). Kaplan (2004:220) states that the government has initiated several tourism development projects and programmes all around the country in order to sustain and grow the tourism industry within the national, provincial and local areas. Regarding the skills shortage in the country, the South Africa's Government has put in place the NSDS (National Skills Development Strategy) in 1997 to train and educate the stakeholders involved in the management of small business (Kaplan, 2004).

According to Padachi (2010:5), the government support is imperative as owners and managers of small businesses lack expertise in accounting which has as a consequence of making poor decision. Tourism is considered as key economic sector in South Africa. That is the reason why there are a number of policies put in place by the government to expand the tourism sector's contribution to the national economic (Mahoney & Van Zyl, 2002:85). The government through his Tourism Action Plan (TAP) has created the Tourism Enterprise Programme (TEP) which goals are to reassure and enable the progress and extension of SMMEs in the tourism industry, ensuing in job creation and increase in the economic growth (Ruhanen et al., 2010:11). The TEP assists SMMTEs with management training, market networks, mentorship guidance and assistance in finance accessibility (Rogerson 2004:89).

Even though all this institutions, projects, programmes was put in place by the South African government to promote and assist SMMEs, owners and managers still believe they don't get enough support from the government (Chimucheka, 2013:788). This complaint from owners and managers is also due to the lack of information available by the institutions nominated by the government to assist SMMEs hence, Maas and Herrington (2006) mention that most of SMMEs in South Africa do not know the efforts the government has put in place to assist them.

Benefits of Utilising Management Accounting In Business

Management accounting is a vital tool for effective business management as it provides appropriate information to managers for decision making regarding the success of the organisation (Stefanou & Athanasaki 2012:143). Managers plan the future and frequently report it to the present (Bouquin, 2004:45), and management accounting provides information in the present about things that going to are happen in the future (Diaconu, 2006). The study conducted by Argilés and Slof (2003) revealed that the sufficient use of financial management and accounting information would lead SMMEs to great performance benefits.

According to Zounta and Bekiaris (2009), management accounting expands the excellence of decision making. Hence Santos, Gomes et al., (2014:2) state that the key utility of management accounting is to make available significant information for the managers, who need high quality information for decision-making. However, Brewer, Frumusanu and Manciu (2013) mentioned that the utility of management accounting is not only for managers of the organisation but the employees as well. Nevertheless Tillmann and Goddard (2008) raise the significance of management accounting, but appeal to owners and managers of businesses to know how to use it. Managers make use of management accounting techniques such as product pricing and costing, calculation of profit and loss, and customer satisfaction to obtain information for long term decisions (Santos et al., 2014:3). The use of management accounting produce positive results in companies and it shouldn't be used only by management but all the employees involved in the good run of the organisation (Breuer, Frumuşanu & Manciu, 2013:363). The use of management accounting in the business increases the overall performance in the way that less time and resources are utilised to achieve the firm's objectives (Marriott & Marriott, 2000). Management accounting improves the quality of the strategic planning analysis of the business, mainly by providing vital information and tools for the effective management of the organisation (Chand & Dahiya, 2010). In the same line of discussion, Manville (2007) indicate that the usage of management accounting practices across the business facilitates a good integration of the business plan and increases the day-to-day performance of the organisation.

The reviewed literature indicates that management accounting skills of decision makers is vital for the success of small tourism business as the lack of management accounting skills, and business management skills in general in the tourism industry are cited by different authors as major reason why SMMEs fails. Management accounting research in SMMEs still remains an abandoned and an obsolete area although it represents a dynamic strength in contemporary economies (Mitchell & Reid, 2000). Management accounting research conducted in small businesses has not been designed yet; however the fundamentals of management accounting development can be learned from these firms (Mitchell & Reid, 2000:386). Randall and Horsman (1998) state that management accounting has been put on hold in SMMEs literature, regardless of its significance to business goals achievement. Very little research has been done on the concept of management accounting skills in the tourism sector in South Africa, but the concept of lack of management skills is very much in existence in the small businesses failures. Hence the reason for conducting this study.

RESEARCH METHODOLOGY

This research rendered itself well with a quantitative approach, which provided highly formalised, controlled, and precisely defined results, where the objective was to measure data rather than to explore and interpret meanings (Roos, 2005:4). The quantitative approach was adopted because it allows for the use of arranged surveys to collect measurable data, which can be examined statistically to yield computed and objective outcomes (Garbarino & Holland, 2009:13). The quantitative method following a pragmatic approach to research is suitable for a study when a researcher wants to test a hypothesis or investigate on something quantitative, hence its utility and relevance to the current paper and objective, to investigate the practices of SMMTEs regarding management accounting skills (Balnaves & Caputi, 2001). The use of a quantitative research approach was well established in social science research that investigates the practices of SMMEs and was thus of relevance to the current paper and objectives

Purposive sampling was implemented for this paper. The current study initially targeted SMMEs that operate in the transportation sector (tour & travel included) all registered at the Cape Town Tourism (CTT) which is the City of Cape Town's official regional tourism organisation, responsible for destination marketing, visitor and industry services and situated in the Cape Metropole of the Western Province of South Africa. In terms of the policy by the CTT officials not to share more than 20 SMMTEs details with an outsider, It was then unavoidable that the researcher conducts a survey on a door-to-door basis in the transportation sector of tourism in Cape Town. During this practice, the researcher had to first find out if the company operated as a tourist transportation apprehension prior to dialogue of the research questionnaire, thus helping to eliminate those who did not meet the eligibility criteria (Easterby-Smith et al., 2008:218) from which 38 completed and returned questionnaires were analysed. Appointments were made with the 38 SMMTEs to assist them in the completion of the questionnaires. The researcher believed that this method would facilitate the participant to understand the terminology and yield the necessary results.

The focus of this paper was centred on one particular area, as opposed to a wider approach (Collis & Hussey, 2003:128) hence the study was limited only to decision makers in the transportation sector of tourism in the Cape Metropole, Western Province of South Africa. It excludes SMME’s not in that field of the tourism industry; small businesses that do not adhere to the definition of SMMEs and those in the transportation sector of tourism industry that are not operating in the Cape Metropole of the Western Province of South Africa.

DATA COLLECTION THROUGH QUESTIONNAIRE

The data was collected by means of questionnaire comprising of closed-ended questions.
The questionnaire developed for the purpose of this study and distributed for data collection contained four sections A, B, C and D. Section A concentrated on personal questions regarding the management approach of the respondents; this section covered categorical “yes” or “no” answers. Section B which comprised three vital questions specifically draft to answer the research question. The first question on proficiency of management accounting skills was in the form of a six-point Likert scale, with 1= very poor, 2= poor, 3= adequate and

4= good, 5= very good, 6= I don’t know. The second one was given alternatives to choose from and the third one which dealt with the perception of management accounting skills was in the form of a six-point Likert scale, with 1= not effective at all, 2= less effective, 3= effective and 4= more effective, 5= most effective, 6= I don’t know. Section C comprised questions requiring yes or no answers and the rest; alternatives were given to choose from. Section D dealt with demographic questions with alternatives was given to choose from. The data from the completed and collected questionnaires was directly captured into the Statistical Programme for Social Sciences (SPSS) version 22 to transform answers into numbers. Questions were sent to the research supervisor for screening and approval before distribution to respondents. The questionnaire had been selected for data collection as it generated a higher response rate than a self-administered questionnaire, and it ensured that the questionnaires were completed by the intended respondents only (Leedy & Ormrood, 2005).

DATA ANALYSIS

With the assistance of SPSS, the researcher was able to directly capture the data into the software, and convert words into numbers. The descriptive statistics is a technique that is employed to arrange and review data in an expressive manner (Pietersen & Maree, 2007:183). SPSS is a program that helps to analyze data, which can be transformed from an Excel spreadsheet to meet the requisite layout.

In some circumstances, answers blocks were left blank, and these were treated as ‘missing’ values during analyses.

DATA VALIDITY AND RELIABILITY

Data validity refers to the ability of the research to be indiscriminate across the population (Mitchell & Jolley, 2012). According to Jackson (2009:71), a construct validity measurement tool evaluates the extent to which toil captures effectively the theoretical concept of the study as it is supposed to. However, this required the use of a representative sample; although the sample surveyed in the current study was convenient in nature, numerous targeted respondents were located within the Cape Metropole of Western province of South Africa. Accordingly, it was hoped that the views of respondents will be representative of the views of the populations from which they were drawn from. However, given the limited size of the sample employed, the generalizability of the findings of the proposed study was expected to be strong (Altermatt, 2013).

Cronbach reliability coefficient in **table 1 (Appendix)** was also used as a check of construct validity whereby the main drive was to group similar items together with the purpose to achieve same results and so measure the fundamental construct (Tavakol & Dennick, 2011:53). Reliability refers to the degree to which related study piloted in the future will result in similar outcomes; hence closed-ended questions were administered to ensure reliability (Leedy, Ormrod et al., 2001:318).

In fact, Cronbach Alpha was established by Lee Cronbach in 1951 to allow the measurement of the internal consistency of a test or scale; it is expressed as a number between 0 and 1

(Tavakol & Dennick, 2011:53); when alpha coefficient being close to one, this indicates a strong correlation significant of high internal consistency and alpha coefficient correlation close to Zero shows weak correlation meaning of low internal consistency. The following are approved as generally accepted by researchers (Pietersen & Maree, 2007:216);

- 0.90- high reliability
- 0.80- moderate reliability
- 0.70- low reliability

Table 1 (Appendix) shows results of the critical questions of the study's Cronbach alpha reliability test. These questions looked critical because they had a direct correlation with the research question. Therefore it was found that All the variables had a Cronbach coefficient that was close to one, which indicates high reliability (Pietersen & Maree, 2007:216). In other words, high internal consistency.

ETHICAL ISSUES

This was the part of the study where important things such as making sure that the participants were entirely knowledgeable about the nature of research, the space of inquiry, the goals and objectives of the study, as well as the envisioned actions must be highly considerate (Busher & James, 2002). A crucial ethical issue relies on the privacy of the results and findings, as well as the safety of the respondents (Pietersen & Maree, 2007:41-42). The participation was voluntary and informed consent was ensured through the signing of the letter of consent issued by the institution that was attached to the questionnaire.

Further considerations such as guarantee that no participant was put in any situation of harm and risk after participation in this research, obeying severely to all the moral procedures served as a standard about trustworthiness and reliability of the data collected and the additional data analysis (Madsen & Davids, 2009:5). The participant's right to secrecy and confidentiality was respected at all times. Any barriers to privacy were made clear to the participants such as notifying them of who may have admission to the data (e.g. research supervisors) (Gajjar, 2013). Participants were made conscious of their right to end the research procedure at any particular time without fear of harmful impacts.

FINDINGS AND DISCUSSION

In this section, the research outcomes are discussed based on the data collected and the research objectives of the study. The research objectives are as follows:

To determine decision-makers of SMMTEs's thoughts about implementing management accounting skills to facilitate their decisions making

The research question that leads to this objective was: *What is the decision makers' perception of the effectiveness of the current management accounting tools employed to make decisions?*

Demography

This section entails the type of tourism that the research focused on, the age of the operation of the business, who is responsible for managing the business and the level of education of the respondents.

The total sample of 38 decision makers in the transportation sector of tourism industry was the focus of the research as indicated in **figure 1** (see appendix); the researcher has realized that some respondents having for core business a means of transport will combine it with any other type of tourism which can increase the cash flow in the business depending of the demand of the customer. Also the majority of respondents use sole proprietorship as the form of business they operate with as indicated in **figure 2** (See Appendix)

The results in **figure 3** (See Appendix) regarding who is responsible for managing the business indicated that 17 respondents (44.7%) stated that the business is managed by the owner, 2(5.3%) managed by the manager and 19 (50%) managed by both owner and the manager. This confirmed that nowadays owners and managers are joint in the day to day running of the organisation hence the representation of 50%. Ateljevic (2007:308) perceives SMMEs' failure as one of the direct consequence of owners or owner-managers management incompetence. For Brink et al. (2003:4), Owners and Managers of SMMEs in South Africa "do not have a clue how to run the business" and this specifically because of management issues such as management training and skills.

The result **(Figure 4)** shows that the transportation sector of tourism can survive up to 40 years which is not in the same line with to Bosch & al's., (2006:663) statement stating that 80% of all SMMEs fail within their first 5 years of existence. This result also raises the concern regarding the survival of SMMTEs whereas Krog (2008) argues that the owner or manager with a good ability to succeed in business can survive for a long time and according to Von Blottnitz (2009) the survival of SMMEs relies on well-educated business owners. The research findings shows that out of 38 respondents, 5 (13.2%) agreed that they hold a matric as highest qualification, 6 (15.8%) had certificate, 9 (23.7%) diploma, 11 (28.9%) Bachelor's degree, 3 (7.9%) got Honour's degree and lastly 4 (10.5%) had master's degree.

This result **(figure 5)** implies that the decision makers in the transportation sector of Cape Metropole are highly educated to run their business and share the view of Chimucheka (2013:787) who stated that Education and training help to obtain management skills which are essential for the success of small business. According to Kangasharu and Pekkala (2002) the higher the level of education of a business owner, the higher the business will grow successfully if it is run by the owner himself/herself.

Proficiency and perception of management accounting skills by decision makers

The first question under this objective was to explore the ability to use management accounting skills by the respondents and therefore put it in practice for decision making purposes. In this question, the respondent was asked to indicate his/her proficiency in the management accounting skills given to him or her by using the rating scale of very poor – poor – adequate – good – very good – I don't know.

The second question was to know the perception of the importance of management accounting tools by decision makers in the transportation sector of tourism in Cape Town.
Referring to **figure 6** (See Appendix), the result of the question on the proficiency of management accounting skills by decision makers affirm that more than the majority of decision makers in the transportation sector within the Cape Metropole are actually apt to use management skills; regarding the question on the perception of management accounting tools by the decision makers, **figure 7** (See Appendix) reveals that more than the majority of decision makers in the transportation sector of tourism in Cape Town find management accounting effective for business management.

The third question which is directly related to the objective of this study is the logic continuation of the two previous questions which was about finding out if the respondents who claim to be able to use management accounting skills, who perceive management accounting tools as effective for their business actually consult it for decision making purposes. The results on **figure 8** (See Appendix) show that out of 38 respondents, only 5 (13.2%) respondents used management accounting tools to make decisions, 10(26.3%) used external parties, 10 (26.3%) consult business partners for decision making, 9 (23.7%) make decisions by themselves, 1 (2.6%) consults a family member and lastly 3 (7.9%) respondents consult people with similar business for decision purposes. The result obtained from this question symbolizes that more than the majority of decision makers in the transportation sector of tourism do not actually apply management accounting skills to make their decisions. This finding is in line with Reider (2008:157) who stated that business finds it very difficult to apply management accounting as they are scared of it, therefore relying more on external parties such as accountants as confirmed by Brijlal et al. (2014:341).

In regards to the findings and analysis, data obtained through the research questionnaire were analyzed and interpreted. A comparison between the findings and the literature section has been presented. This study found that the majority of decision makers in the transportation sector of tourism in the Cape Metropole are highly able to use management accounting skills, as well as they found management accounting skills effective for business management, however they do not consult it for decision making purposes.

CONCLUSION

Management accounting skills is very important when it comes to ensure endurance, sustainability and competence in the business. The purpose of the study was to "to find out how the owners and managers of SMMTEs perceive management accounting skills in the day-to-day running of their business; also to determine their thoughts about implementing management accounting skills to facilitate their decision making". A quantitative research method was followed using questionnaires as research tools to gather data purposively from SMMTEs specifically in the transportation sector of the tourism industry around the Cape Metropole of the Western province of South Africa. The data were used to produce descriptive results through SPSS and Excel spreadsheet. Results reveal that operational budget represents the highest management accounting skill with 100% that decision makers in the tourism industry perceive as effective for the good management of the SMME. The operational skill is the management skill that is most required by South African SMMEs (Perks & Smith, 2008); hence it facilitates business strategy, operations and controls decision making (Gaither & Frazier, 1999). According to Shaku (2011), technically well-qualified owner/managers with strong budgeting skills are most likely to achieve business success. Reeve et al., (2009) further explain that the operational budget facilitates decision making as it involves establishing specific goals, executing plans to achieve plans and time to compare the actual results with objectives.

In general, the majority of decision makers perceive management accounting skills as effective for their business, therefore the implementation to facilitate their decision makings will be at ease. This research outcome is in line with Loo and Davis (2003) who perceive the non-use of management accounting in the business as a channel to failure, bad investment decisions (e.g. buying a bus) and bankruptcy. According to Kirby and King (1997), SMMEs owner-managers find the use of management accounting effective for their business but lack the skills to utilize them properly, reason why they depend on external parties such as accountants to manage their organisations successfully. In order to face competition with large enterprises, Mitchell and Reid (2000) suggest that SMMES put in place systems that will assist them to manage their resources and control their information; For Johnson and Kaplan (1987) Management accounting can assist SMMEs to meet such needs of management information. Management accounting skills are useful in making any business entity competitive and successful (Gowthorpe, 2008). Management accounting is an important tool for effective business management (Stefanou & Athanasaki, 2012:143). The use of management accounting contributes to the standardization of skills in the business and increase the level of professionalism with the staff in the organisation (Amat et al., 1994).

RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Additional studies may be conducted based on qualitative research via interviews that allow a deeper understanding of the impact of the use of management accounting skills in SMMTEs and insight of the training or workshop needed by decision makers in the tourism sector in regard of how to use management accounting tools to make effective decisions in their business. Although these decision makers in tourism sector are able to use management accounting skills, also perceived it as effective for the business management, they are scared to use it to make decisions in their business as they do not know the importance and rely more on external parties such as accountants. It is therefore vital for decision makers of SMMTEs of Western Cape to go for management workshop training and learn how to apply those skills for the success of their business and by that continue to have positive effects in the country's economic growth and employment rate. Hence the researcher recommends that the government through the Department of Small Businesses Development put in place training facilities for decision makers in the tourism sector in the Western province of South Africa to teach them the importance of management accounting skills and how to apply it in the business.

The majority of businesses operates as sole-proprietor and prefers to carry the risk alone. This study revealed that decision makers of SMMTEs rely on external parties (accountants) and business partner (for some of them) to make financial and management decisions. As confirmed by Brijlal et al., (2014:341), the majority of SMMEs in South Africa use external parties such as accountants to fulfill their accounting duties and to make financial decisions. This is the reason why CIMA (2012:10) recommended partnership with management accountants, to allow business owners to focus on promoting the business and let management accountants make effective decisions and reduce the business expenses for better profitability. The researcher finds the suggestion of CIMA (2012) appropriate for small businesses as the partners will put together skills and knowledge to expand the business successfully and avoid failure.

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REFERENCES

Abdurahman, M.R., Addinall, J., Chandler, E., Daniels, N., English, L., Green, J., Shade, Z. & Bruwer, J. 2012.*Utilisation of budgets in clothing small medium and micro enterprises (SMMEs) within the Cape Metropole. African Journal of Business Management*, 6(25):7529-7532.

Abor, J. & Quartey, P. 2010. Issues in SME development in Ghana and South Africa.

Ahmad,K., Collier, P. & Gwilliam, D. 2012.*The use of management accounting practices in Malaysian SMEs.*

Altermatt, B. (2013). *Evaluating Research: How Can You Tell the Good Research from the Bad?* Hanover college.

Argilés, J.M. and Slof, E.J. 2003. *The use of financial accounting information and firm performance: an empirical quantification for farms.* Accounting and Business Research 33(4): 251-273.

Askarany, D., Yazdifar, H. and Askary, S. 2010. *Supply chain management, activity-based costing and organizational factors.* International Journal of Production Economics 127 (2): 238-248.

Ateljevic, J. 2007. *Small tourism firms and management practices in New Zealand*: the Centre Stage Macro Region. Tourism Management, 28(1):307-316.

Balnaves, M., & Caputi, P. 2001. Introduction *to quantitative research methods: An investigative approach*. Sage.

Bbenkele, E., 2007. *An Investigation of Small and Medium Enterprises Perceptions Towards Services Offered by Commercial Banks in South Africa*. African Journal of Accounting, Economics, Finance and Banking Research, 1(1),

Berry, A., von Blottnitz, M., Cassim, R., Kesper, A., Rajaratnam, B., & van Seventer, D. E. 2002. *The economics of SMMES in South Africa. Trade and Industrial Policy Strategies, 1*.

Bosch, J., Tait, M. & Venter, E. 2006. *Business management: An entrepreneurial perspective. : Lectern*

Bojanic, D. 2011. *Using a tourism importance–performance typology to investigate environmental sustainability on a global level. Journal of Sustainable Tourism*, 19(8), 989-1003.

Bosch, J., Tait, M. & Venter, E. 2006. *Business management: An entrepreneurial perspective*. : Lectern.

Bouquin,H., 2004. *Comptabilité de gestion, 3 e édition*, Ed. Economică, Paris

Breuer, A., Frumuşanu, M. L., & Manciu, A. 2013. *The Role of Management Accounting in the Decision Making Process:* Case Study Caraş Severin County. Annales Universitatis Apulensis Series Oeconomica, 15(2), 355-366.

Brijlal, P., Enow, S., & Isaacs, E. B. 2014. *The use of financial management practices by small, medium and micro enterprises: a perspective from South Africa.* Industry and Higher Education, 28(5), 341-350.

Brink, Annekie, Michael Cant, and Andre Ligthelm. 2003. "*Problems experienced by small businesses in South Africa." 16th Annual Conference of Small Enterprise Association of Australia and New Zealand.* Vol. 28..

Bruwer J.P. 2010. *Sustainability of South African FMCG SMME. CPUT Digital Knowledge*.

Bukula, S. 1995, "*Environment for SMME's*. What is new?", African Business, pp. 12-14

Busher, H. & James, N. 2002.*Ethics of research in education. Research methods in educational leadership and management*, :73-89.

Chand, M. and Dahiya, A. 2010. *Application of management accounting techniques in Indian small and medium hospitality enterprises:* an empirical study. International Journal of Entrepreneurship and Small Business 11 (1): 25-41.

Chiang, C. F., & Jang, S. 2008. An expectancy theory model for hotel employee motivation. International Journal of Hospitality Management, 27(2), 313-322.

Chimucheka, T. 2013. *Overview and Performance of the SMMEs Sector in South Africa. Mediterranean Journal of Social Sciences*, 4(14), 783.

CIMA. 2002. Finance 3rd Edition. London: Bpp.

CIMA 2012, *Improving SME performance through Management Accounting Education*, London United Kingdom: Shutterstock, Volume 9, Issue 4.

City of Cape Town. 2004. *Tourism Development Framework for Cape Town. Cape Town: Atos*

KPMG Consulting.

Collier, P. M. 2009. *Accounting for Managers: Interpreting accounting information for decision-making. 3rd Edition.West Sussex .England John Wiley & Sons Inc*

Collis, j. & Hussey, r. 2003. Business research: *A practical guide for undergraduate and post graduate students Palgrave: Macmillan*

Cosatu. 2011. *Why are we making a Call to Restructure the Economy*? *Campaigns Bulletin*, 1.

Damitio, J.W. &Schmidgall, R.S. 2007. *What Accounting Skills Do Managers Value? Controllers and managers are close in their rankings of the most important accounting skills for managers to have. Controllers rate knowledge of the income. Strategic Finance*, 89(4):52-53.

Diaconu, P., 2002. *Managerial accounting*, Ed. Economică, Bucureşti.

Dodge, H.R. and Robbins, J.E. 1992, "*An empirical investigation of the organizational life cycle model for small business development and survival"*, Journal of Small Business Management, Vol. 30 No. 1, pp. 27-37.

DTI. 2013. *Small Medium Micro Enterprise Development*. Pretoria.

[Online] September 3rd 2013. Available from: DTI.gov.za http://www.dti.gov.za/sme_development/sme_development.jsp. [Accessed: 2nd May 2013].

Earle-Malleson, N. *Tourism as a priority sector in South Africa*.

Easterby- Smith, M., Thorpe, R. & Jackson, P.R. 2008. *Management Research. 3rd Ed*.Thousand Oaks, CA: Sage.

Eric W.. Noreen, Brewer, P. C., & Garrison, R. H. 2011. *Managerial accounting for managers. McGraw-Hill Higher Education.*

Fatoki, O. O. 2012 "*An Investigation into the Financial Management Practices of New Micro-enterprises in South Africa." Journal of Social Science* 33.2: 179-188.

Frey, N. & George, R. 2010. *Responsible tourism management: The missing link between business owners' attitudes and behaviour in the Cape Town tourism industry. Tourism Management*,31(5):621-628.From http://www.mediaclubsouthafrica.com/index.php?option=com_content&view=article&catid=41:visit_bg&id=91:tourism-industry-overvew

Gajjar, D.N.B. 2013. Ethical Consideration in Research. Education, 2(7).

Garbarino S. and Holland J. 2009. *Quantitative and Qualitative Methods in Impact Evaluation and Measuring Results*. Social Development Direct.

Garrison, R. H., Noreen, E. W., Brewer, P. C., & McGowan, A. 2010. *Managerial accounting. Issues in Accounting Education*, 25(4), 792-793.

Gowthorpe, C. 2008. *Management accounting.London:Cengage Learning*

Giliomee,J. 2004. A description of Small Business In South Africa. the small business environment, 2.

Green, L., Jones, B., & Miles, I. 2012. 8 *Skills and Innovation. Innovation Policy Challenges for the 21st Century*, 27, 185.

Greve, N. 2014. "*Small Business Ministry could add vital enterprise development impetus".* Engineering News, 6-12 June. http://www.engineeringnews.co.za/article/small-business-ministry-could-add-vital-enterprise-development-impetus-2014-06-06

Gupta, M., & Galloway, K. 2003. *Activity-based costing/management and its implications for operations management. Technovation*, 23(2), 131-138.

Hakola, M. 2012. *Balanced scorecard as a tool for small business reorganization*. International Journal of Management and Enterprise Development 9 (4): 364-384.

Halabi, A.K., Barrett, R. and Dyt, R. 2010. *Understanding financial information used to assess small firm performance: An Australian qualitative study*. Qualitative Research in Accounting and Management 7 (2): 163-179.

Hansohm, D. 1992. *Small industry development in Africa- lessons from Sudan. Bremer Africa -StudienBd2, Li t Ver lag* .Munster, Hamburg

Jackson, S.L. 2009. *Research Methods and Statistics: A critical thinking Approach.* USA: Wadsworth.

Jassiem, R., Damane, A., Dlamini, T., Swartz, C., Bortaar, P., Mabuthile, M., Mali, N., Mahote, B. & Bruwer, J. 2012.*The existence of financial information systems in small medium and micro enterprise (SMMEs) in the Cape Metropole*. African Journal of Business Management, 6(23):6910-6913.

Kangasharju, A. & Pekkala, S. 2002. The *Role of Education and Self-Employment Success in Finland. Growth and Change*, (33) 216–237.

Kaplan, Lucy. 2004 "*Skills development in tourism: South Africa's tourism-led development strategy."* Geo Journal 60.3: 217-227.

Kasekende, L. and Opondo, H., 2003. *Financing Small and Medium-scale Enterprises (SMEs): Uganda's Experience*

Kazooba, S. 2006. *The books on SMME failure*. Books and Bookmen: 34-36, September

Kirsten, M. & Rogerson, C.M. 2002.*Tourism, business linkages and small enterprise development in South Africa. Development Southern Africa*, 19(1):29-59.

Krog N 2008. *Identifying Financial Success Factors for SMMEs in the Eastern Cape*. Published Master's Thesis, Nelson Mandela Metropolitan Business School, Port Elizabeth.

Lavia Lopez, O., & Hiebl, M. R. 2014. *Management Accounting in Small and Medium-sized Enterprises:* Current Knowledge and Avenues for Further Research. Journal of Management Accounting Research.

Leedy & Ormrood. 2005 . *Practical Research.* New York : *Merril Prentice Hall & Pearson*, 184.

Lim, S., Saldanha, T. J., Malladi, S., & Melville, N. P. 2013. *Theories Used in Information Systems Research: Insights from Complex Network Analysis. Journal of Information Technology Theory and Application* (JITTA), 14(2), 2.

Lucey , T. 2005 . *Cost and Management Accounting*: An Active Learning Approach . New York: *D P Publications*

Mabaso, N.R.2008.*An investigation into small business failures with specific reference to retrenched Telkom employees in the Far West Rand*, University of South Africa, Pretoria

Madsen,S.R, Davis,H.J. 2009. *Faculty Ethics Unveiled: Scholarship ettu brute?* pp. 4-5.

Mago, S. & Toro, B. 2013. *South African Government's Support to Small, Medium Micro-Enterprise (SMMEs)*: The Case of King William's Town Area.

Malapane, A., & Makhubele, M. 2013 *Revisiting of Small Medium and Micro Enterprises' support through governmental agencies:* a case study of the Gauteng Enterprise Propeller. Journal of Public Administration, 48(1), 195-204.

Manville, G. 2007. *Implementing a balanced scorecard framework in a not for profit SME*. International Journal of Productivity and Performance 56 (2): 162-169.

Marriott, N. and Marriott, P. 2000. *Professional accountants and the development of a management accounting service for the small firm: barriers and possibilities*. Management Accounting Research 11 (4): 475-492.

Mayanja, M. K. 2010. *Management accounting as an instrument for corporate governance in Botswana.*

Mbatha, B. 2013. *Exploring the potential of electronic commerce tools in South African SME tourism service providers. Information Development*, 29(1), 10-23.

MediaClubSouthAfrica.com. 2010. *Tourism in South Africa.* Retrieved 05 14, 2013,

Mitchell, M. L., & Jolley, J. M. 2012. *Research design explained*.

Mitchell, T.R. & Albright, D.W. 1972. *Expectancy theory predictions of the satisfaction, effort, performance, and retention of naval aviation officers. Organizational behavior and human performance,* 8(1):1-20.

Mitchell, F. & Reid, G. 2000, "*Problems, Challenges and Opportunities: Small Business as a Setting for Management Accounting Research"*, Management Accounting Research,11 (4): pp. 385 – 390.

Morrison, A. & Teixeira, R. 2004. *Small business performance: a tourism sector focus. Journal of Small Business and Enterprise Development*, 11(2):166-173.

Murphy, P.E. & Price, G.G. 2012. 9 *Tourism and sustainable development. Global tourism*: 167.

Mukanya, T. 2008. *Managing growth - A guide for entrepreneurs*. Harare: ZPH

National Department of Tourism. 2012. *National Tourism Sector Strategy:Executive Summary. Johannesburg: National Department of Tourism*.

Ng, F., Harrison, J. A., & Akroyd, C. 2013. *A revenue management perspective of management accounting practice in small businesses.* Meditari Accountancy Research, 21(2), 92-116.

Niemand, G. 2006. *Small business management* .Pretoria:VanSchaik .

Olawale F & Garwe F. 2010. *Obstacles to the growth of new SMEs in South Africa: A. Fort Hare,*: African Journal of Business Management.

Padachi, K. (2010). *Accounting services among manufacturing SMEs: a neglected subject*.

Pavlatos, O., & Paggios, I. 2008. *Management accounting practices in the Greek hospitality industry*. Managerial Auditing Journal, 24(1), 81-98.

Pansiri, J., & Temtime, Z. T. 2010. *Linking firm and managers' characteristics to perceived critical success factors for innovative entrepreneurial support*. Journal of Small Business and Enterprise Development, 17(1), 45-59.

Pellinen, J. (2003), *"Making price decisions in tourism enterprises", Hospitality Management*, Vol. 22 No. 3, pp. 217-35.

Peters, R., & Naicker, V. 2013. *Small medium micro enterprise business goals and government support: a South African case study. South African Journal of Business Management,* 44(4), 13-24.

Peterson, S. J., & Bredow, T. S. (Eds.). 2009. *Middle range theories: application to nursing research*. Lippincott Williams & Wilkins.

Pett, Timothy L., and James A. Wolff. 2007 "*SME performance: a case for internal consistency*." Journal of Small Business Strategy 18.1.

Pietersen, J. & Maree, K. 2007. *Standardisation of a questionnaire. A chapter in First steps in research* by Creswell, J.W., Elbersohn, L., Eloff, I., Ferreira, R., Ivankova, N.V., Jansen, J.D., Nieuwenhuis, J., Pietersen, J., Plano Clark, V.L., and Van der Westhuizen, C. Hatfield, Pretoria: Van Schaik.

Phillips, P.A. 1999. *Performance measurement systems and hotels*: a new conceptual framework. International Journal of Hospitality Management, 18(2):171-182.

Randall, R. and Horsman, S. 1998, "*Can failure in SMEs be reduced by better management accounting",* paper presented at 21st ISBA National Small Firms Conference: Celebrating the Small Business.

Reider, R. 2008. *Effective operations and controls for the small privately held business*. : Wiley.

Ritchie, J. and Richardson, S. 2000. *Smaller business governance: Exploring accountability and enterprise from the margins.* Management Accounting Research 11 (4): 451-474

Rink, D.R. & Swan, J.E. 1979. *Product life cycle research*: A literature review. Journal of business Research, 7(3):219-242.

Rogerson, C.M. & Visser, G. 2004. *Tourism and development issues in contemporary South Africa.* : Africa Institute of South Africa Pretoria.

Rootman, C. & Kruger, J. 2010. *Adapting SMME business functions during economic turmoil. Acta commercii*, 10(1):107-119.

Saayman, M. & Olivier, E. 2006.*An analysis of tourism SMEs in South Africa*. South African Journal for Research in Sport, Physical Education and Recreation, 27(1):117-126.

Saayman, M. & Slabert, E. 2001, "*Tourism Entrepreneurs: Opportunities and Threats. A South African Perspective*", Conference Proceedings of the 46th International Council for Small Business.

Santos, L. L., Gomes, C., Arroteia, N., & Almeida, P. 2014. *The perception of management accounting in the portuguese lodging industry*. READINGS BOOK, 565.

Shaku, MD. 2011. *The gap of management accounting skills by venture capital providers and those possessed by Small and Medium Entreprises in the Craft industry.* Johannesbourg: University of South Africa.

Shields, A & Shields, R. 2005. *Management accounting –strategy planning* . London: CPA

South Africa.Info. 2013*Investing in the Western Cape*. Retrieved january 21, 2013, from http://www.southafrica.info/business/investing/opportunities/wcape.htm#.UP0VPNreOSo

Stefanou, C. J., & Athanasaki, M. 2012. *Management Accounting Practices in ERP Environments: A Research Agenda*. In Proceedings of the 9th International Conference on Enterprise Systems, Accounting and Logistics.

Tavakol, M., & Dennick, R. 2011. *Making sense of Cronbach's alpha. International journal of medical education*, 2, 53-55.

Tassiopoulos, D. 2010. *An investigation into the co-producers of preferred strategic behaviour in small, micro and medium tourism enterprises in South Africa*, .

Tassiopoulos, D. 2010. *New tourism ventures: an entrepreneurial and managerial approach. : Juta and Company Ltd.*

Tether, B., Mina, A., Consoli, D., & Gagliardi, D. 2005. A Literature Review on Skills and Innovation. *How Does Successful Innovation Impact on the Demand for Skills and How Do Skills Drive Innovation?*

Tillmann, K. & Goddard, A. 2008. *The international hotel industry in Spain: Its hierarchical structure*. Management Accounting Research, 19, 80-102.

Toms, J. S. 2010. *Calculating profit: A historical perspective on the development of capitalism. Accounting, Organizations and Society*, 35(2), 205-221.

Tonidandel, S., Braddy, P. W., & Fleenor, J. W. 2012. *Relative importance of managerial skills for predicting effectiveness*. Journal of Managerial Psychology, 27(6), 636-655.

Tshabalala, D.B. 2007. *The strategic issues management by small businesses in the Mamelodi metropolitan areas.*

Vroom, V. 1964. *Work and motivation*. New York: John Willey & Sons.

Von BM 2009. *An Economic Overview of SMMEs in 2008: The small business monitor*. Small Enterp. Dev. Agency 5(2):10

Western Cape Business. 2005. *the guide to business an investment in the Western Cape province.* Retrieved january 18, 2013, from Western Cape Business: http://www.westerncapebusiness.co.za/pls/cms/ti_secout.secout_prov?p_sid=24&p_site_id=127

Wu, J., Boateng, A. & Drury, C. 2007. An analysis of the adoption, perceived benefits, and expected future emphasis of western management accounting practices in Chinese SOEs and JVs. The International Journal of Accounting, 42(2):171-185.

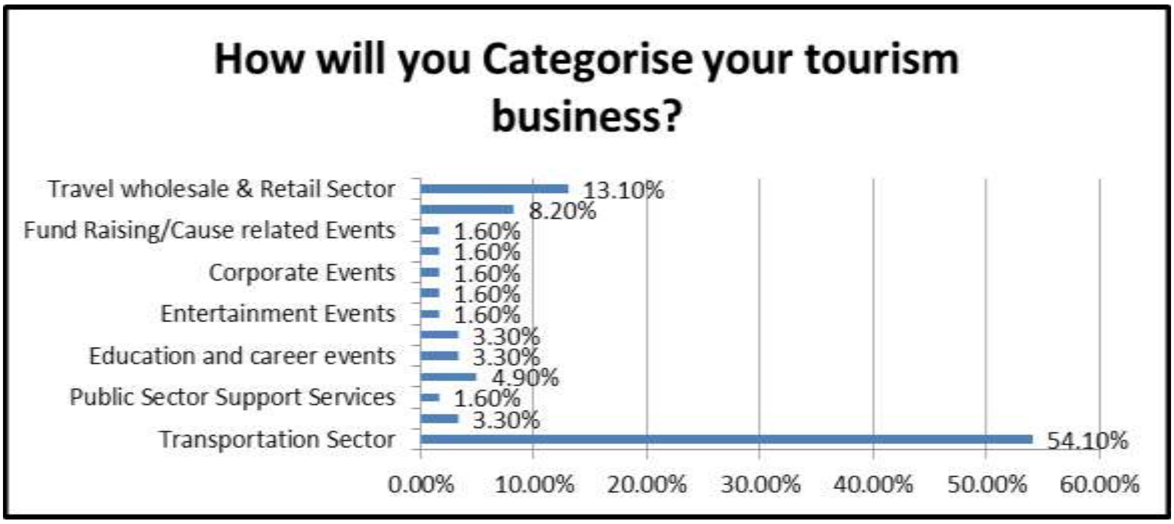
Zimmerer, TW & Scarborough, NM. 1994. Essential s of small business management. New York: MacMillan College.

Zounta, S. & Bekiaris, M. 2009. *Cost-based Management and Decision Making in Greek Luxury Hotels. Tourismos: an International Multidisciplinary*. Journal of Tourism, 4(3), 205-225.

Zvomuya, F. 2010. *Evaluation of small business success*. 36: 102-124.

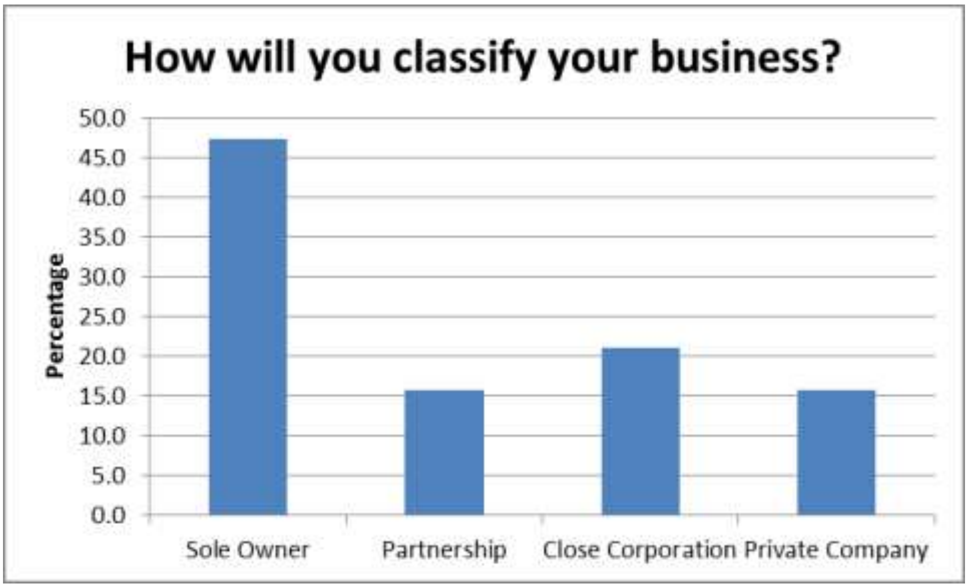
Appendix

Figure 1



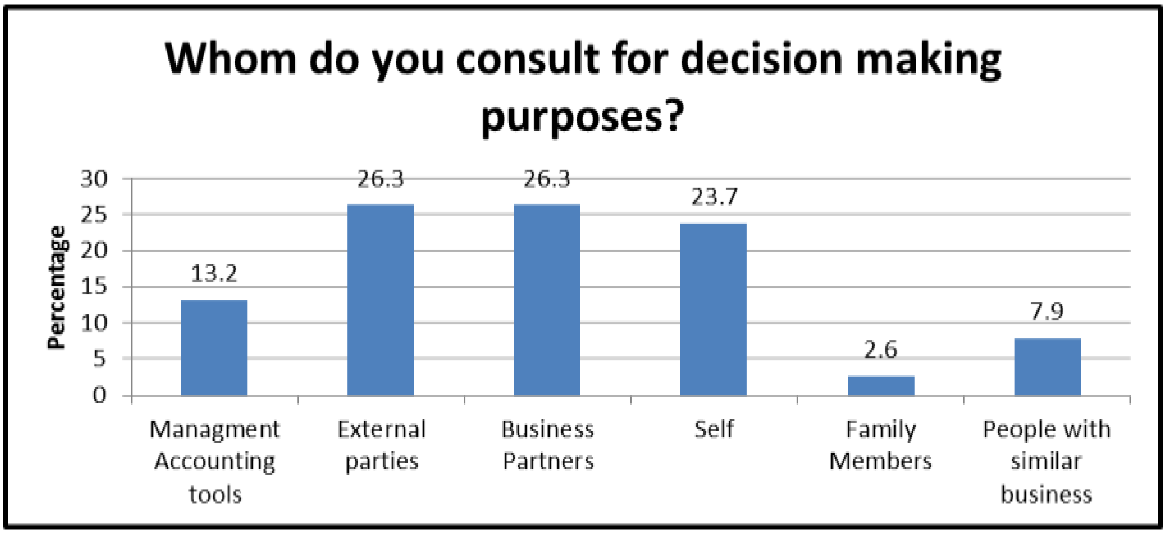
Source: Fieldworks

Figure 2



Source: Fieldworks

Figure 3



Source: Fieldworks

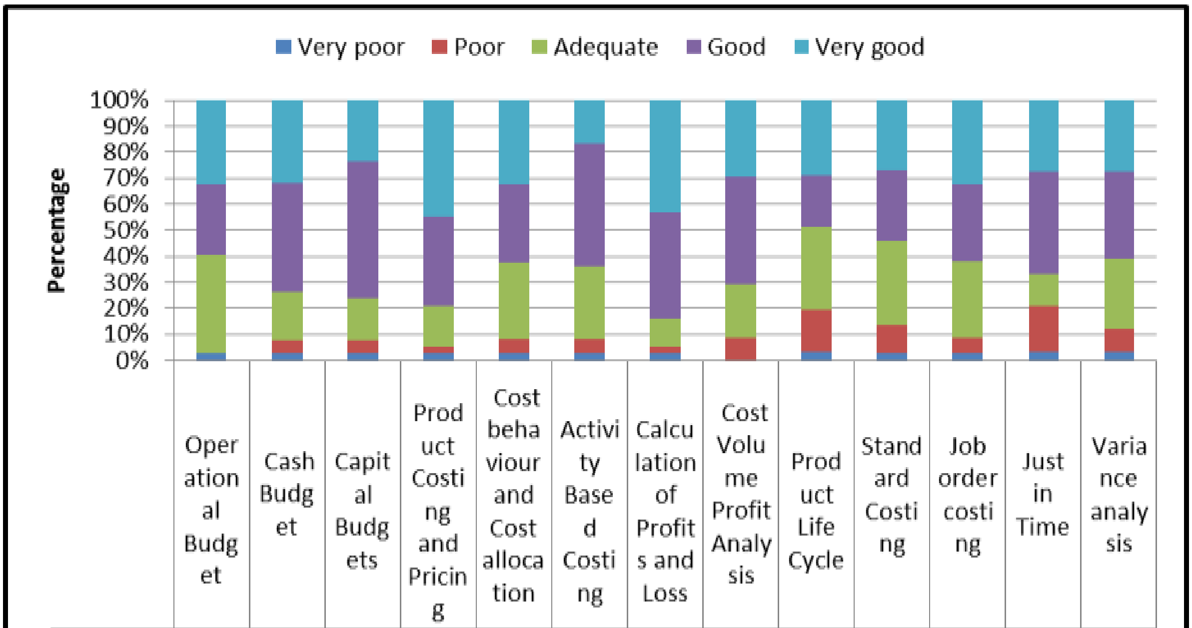
Figure 4

Source: Fieldworks

Figure 5

Source: Fieldworks

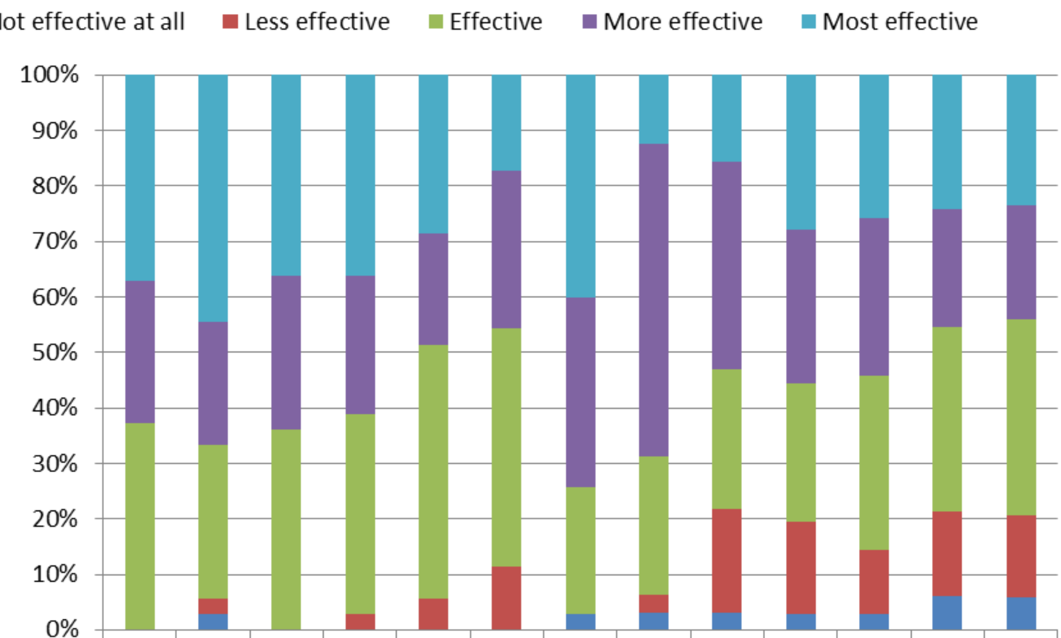
Figure 6: Skills proficiency of the respondents



	Operational Budget	Cash Budget	Capital Budgets	Product Costing and Pricing	Cost behaviour and Cost allocation	Activity Based Costing	Calculation of Profits and Loss	Cost Volume Profit Analysis	Product Life Cycle	Standard Costing	Job order costing	Just in Time	Variance analysis
Very good	32.4%	31.6%	23.7%	44.7%	32.4%	16.7%	43.2%	29.4%	29.0%	27.0%	32.4%	27.3%	27.3%
Good	27.0%	42.1%	52.6%	34.2%	29.7%	47.2%	40.5%	41.2%	19.4%	27.0%	29.4%	39.4%	33.3%
Adequate	37.8%	18.4%	15.8%	15.8%	29.7%	27.8%	10.8%	20.6%	32.3%	32.4%	29.4%	12.1%	27.3%
Poor	0.0%	5.3%	5.3%	2.6%	5.4%	5.6%	2.7%	8.8%	16.1%	10.8%	5.9%	18.2%	9.1%
Very poor	2.7%	2.6%	2.6%	2.6%	2.7%	2.8%	2.7%	0.0%	3.2%	2.7%	2.9%	3.0%	3.0%

Source: Fieldworks

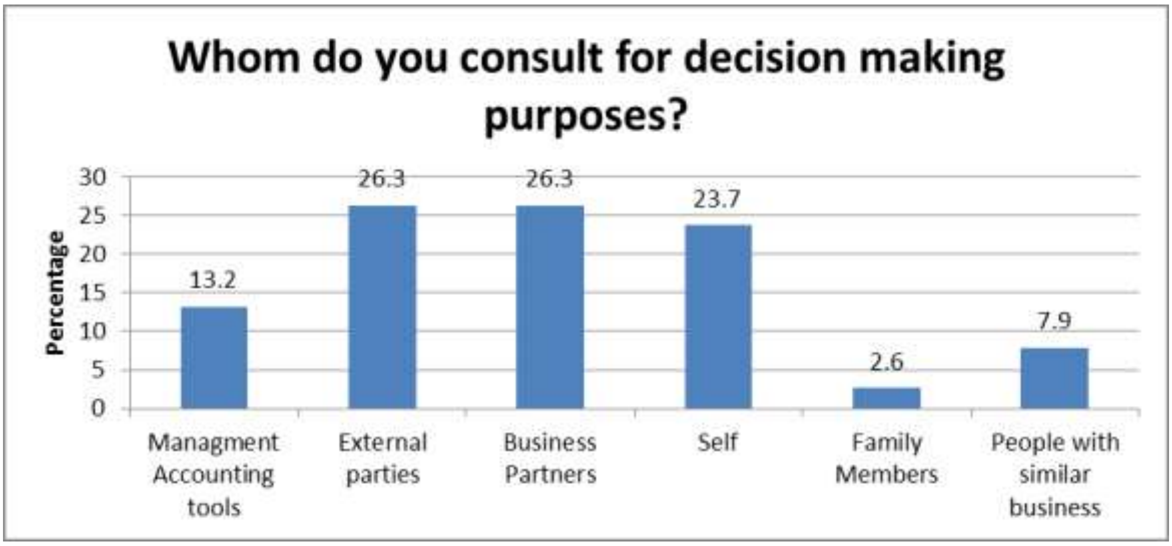
Figure 7: Effectiveness of respondents' management accounting skills



	Operational Budget	Cash Budget	Capital Budgets	Product Costing and Pricing	Cost behaviour and Cost allocation	Activity Based Costing	Calculation of Profits and Loss	Cost Volume Profit Analysis	Product Life Cycle	Standard Costing	Job order costing	Just in Time	Variance analysis
Most effective	37.1%	44.4%	36.1%	36.1%	28.6%	17.1%	40.0%	12.5%	15.6%	27.8%	25.7%	24.2%	23.5%
More effective	25.7%	22.2%	27.8%	25.0%	20.0%	28.6%	34.3%	56.3%	37.5%	27.8%	28.6%	21.2%	20.6%
Effective	37.1%	27.8%	36.1%	36.1%	45.7%	42.9%	22.9%	25.0%	25.0%	25.0%	31.4%	33.3%	35.3%
Less effective	0.0%	2.8%	0.0%	2.8%	5.7%	11.4%	0.0%	3.1%	18.8%	16.7%	11.4%	15.2%	14.7%
Not effective at all	0.0%	2.8%	0.0%	0.0%	0.0%	0.0%	2.9%	3.1%	3.1%	2.8%	2.9%	6.1%	5.9%

Source: Fieldworks

Figure 8



Source: Fieldworks

Table 1 Cronbach reliability test

	Initial	Extraction
Indicate your proficiency in the skills below by using the rating scale		
Q3.1 Operational Budget	1.000	.906
Q3.2 Cash Budget	1.000	.910
Q3.3 Capital Budgets	1.000	.906
Q3.4 Product Costing and Pricing	1.000	.904
Q3.5 Cost behaviour and Cost allocation	1.000	.905
Q3.6 Activity Based Costing	1.000	.909
Q3.7 Calculation of Profits and Loss	1.000	.908
Q3.8 Cost Volume Profit Analysis	1.000	.906
Q3.9 Product Life Cycle	1.000	.906
Q3.10 Standard Costing	1.000	.904
Q3.11 Job order costing	1.000	.904
Q3.12 Just in Time	1.000	.906
Q3.13 Variance analysis	1.000	.905

How do you perceive the importance following management accounting tools?		
Q4.1 Operational Budget	1.000	.907
Q4.2 Cash Budget	1.000	.912
Q4.3 Capital Budgets	1.000	.906
Q4.4 Product Costing and Pricing	1.000	.905
Q4.5 Cost behaviour and Cost allocation	1.000	.908
Q4.6 Activity Based Costing	1.000	.905
Q4.7 Calculation of Profits and Loss	1.000	.912
Q4.8 Cost Volume Profit Analysis	1.000	.905
Q4.9 Product Life Cycle	1.000	.905
Q4.10 Standard Costing	1.000	.905
Q4.11 Job order costing	1.000	.905
Q4.12 Just in Time	1.000	.904
Q4.13 Variance analysis	1.000	.905

MAF006 Has risk based capital regulation negatively affected aggregate credit supply by South African banks?

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Abstract

Risk based capital regulation seeks to create stability within the global banking system by imposing minimum capital requirements on banks. These requirements have been increased several times since first implemented. It is important to understand the impact that these requirements may have on the lending supply by banks, since a contraction in supply could have unintended consequences for the economy, particularly in economic downturns. This paper reviews the empirical evidence of how South African banks have changed credit supply since the introduction of risk based capital regulation through the Basel Accords between 1994 and 2013 in order to establish the extent to which changes in industry level credit supply can be attributed to the increased regulatory requirements of target capital adequacy ratios or to other demand and supply side variables. The extent to which compliance with regulated capital reforms has been satisfied by contracting credit supply, increasing qualifying capital or changing the composition of on-balance sheet lending portfolios through substitution between risk weighted assets is analysed. Furthermore, the risk weighted assets component of capital adequacy is reviewed to more critically understand risk taking and arbitrage in both retail and commercial lending portfolios over the full observation period. A vector auto regression (VAR) model is used to test the dependency of bank lending on both bank specific and macroeconomic variables and to quantify their individual effects at the aggregate industry level. This paper finds that there is no significant link between changes in risk based capital regulation and aggregate lending by banks.

Keywords: Bank lending, Basel Accords, capital regulation, credit extension, credit supply, risk based capital regulation

Section I: Introduction

The implementation of risk based capital regulation through the Basel Accords affects the capacity of banks to supply credit to the real economy. Banks with capital shortfalls may either issue new equity, diversify their lending portfolios away from assets with higher risk weighting or reduce the supply of bank loans (Barajas, 2005). It is generally accepted that raising additional equity comes at a higher cost, and banks are more likely to meet increased capital adequacy requirements by reducing credit supply (Hyun and Rhee, 2010).

Higher capital adequacy requirements also incentivise banks to substitute away from supplying credit to higher risk assets like commercial loans. Berger and Udell (1994) state that increased risk based capital requirements would result in poorly capitalised banks restricting credit to higher RWA in favour of lower risk government securities. The requirement to hold additional capital for certain assets perceived to be higher risk would increase the cost of lending and banks could be less inclined to allocate capital towards those assets.

According to Jackson et al. (1999) banks are more likely to contract credit supply during economic recessions given the higher probability that these periods will be characterised by increased bad debts and impairments. It can therefore be inferred that banks would choose to protect capital levels by reducing exposure to higher RWA, behaving in a pro-cyclical manner by restricting credit extension when increased liquidity in the real economy is most required.

It is therefore conceivable that capital adequacy reforms could result in a regulatory induced credit crunch where banks ration credit to higher risk lending and thereby reduce liquidity in the real economy.

The purpose of this paper was to examine the empirical evidence of the South African banking industry to determine the extent to which there is evidence that the introduction of and changes to the risk based capital adequacy requirements of the Basel Accord influenced aggregate lending.

The paper is structured as follows: Section II provides an overview of the Basel Accord and the various amendments since its initial implementation. Section III reviews the existing literature on risk based capital regulation. Section IV details the scope of the research, overviews the research methodology, examines the data and identifies important limitations. Section V analyses bank capital adequacy and addresses the manner in which banks have complied with increased Basel solvency requirements by either adjusting or changing the composition of RWA. Section VI examines the empirical trends in credit supply by South African banks between 1994 and 2013 and provides a qualitative analysis of the underlying fundamentals influencing those trends. Section VII introduces and explains the vector autoregression (VAR) model. Section VIII presents the VAR results and aims to quantify specific effects of both demand and supply side factors affecting the capacity and propensity for banks to lend. Section IX summarises important findings and concludes.

Section II: The Basel Committee on Banking Supervision (BCBS)

Basel I

Basel I established a common set of capital adequacy standards for banks of participating countries. The 1988 Basel Accord focused exclusively on credit risk. Risk weightings were determined by both the type of credit and the nature of the issuer. Five primary risk categories were established for weighting bank assets, ranging from a ‘risk-free’ 0% for Organisation for Economic Co-operation and Development (OECD) government or sovereign debt to 100% for corporate debt. The sum of all assets multiplied by their respective risk weightings determined that bank’s risk weighted assets (RWA). Basel I required banks to manage their capital adequacy, where a minimum of 8% of a bank’s RWA must be covered by Tier 1 and Tier 2 capital reserves[15]. An additional requirement was that Tier 1 capital comprise a minimum of 4% of a bank's RWA. (BIS, 1988; Balin, 2008).

Basel I has largely been credited for the international convergence of bank capital standards and providing an objective framework for risk based capital ratios (Santos, 2000), and for assisting in stabilising the international banking system (Burhouse et al., 2003). However it was criticised for being too narrowly focused on credit risk, largely ignoring market and operational risk. In addition, the calibration of specific credit risk weightings implemented in Basel I were considered too subjective and simplistic. This effectively incentivised to pursue increased risk taking under Basel I (Hogan & Sharpe, 1997).

Basel II

The criticism of the 1988 Basel Accord resulted in the Basel Committee proposing a new framework in 1999 which was to be phased by the end of 2006. (Heffernan, 2005; Balin, 2008). The most significant changes for the purposes of this paper were the introduction of a more variable risk weighting to calibrate for actual or expected asset risk, and the broadening of the scope of the framework to include credit, market and operational risk (Lybeck, 2011). Banks were encouraged to use more modern Value at Risk (VaR) models, including internally developed models, to measure risk levels (BIS, 2004). Basel II therefore created a more risk sensitive framework for the calculation of a bank's capital charges while attempting to close the arbitrage loopholes in the original Basel I framework (Balin, 2008).

Basel II has been criticised for being procyclical, since in a downturn or recession borrowers will be perceived as more risky, and therefore require more capital to be set aside. This disincentive to lend could potentially exacerbate an economic downturn by constraining access to credit when it is most needed. The reliance of Basel II on credit rating agencies also continued to encourage the transfer of credit risk off balance sheet (Heffernan, 2005), where the underlying credit risk was much harder to determine.

Basel III

In the aftermath of the 2008 financial crisis Basel III introduced both capital and liquidity reforms to strengthen the resilience of the banking industry, implementing improved risk management tools to mitigate the system risk and negative spillover effects into the real economy. There is also a strong emphasis on better governance and increased transparency (BIS, 2010a).

Enhanced risk controls through a leveraged ratio aim to contain excessive risk taking, while additional capital buffers are introduced to minimise the systemic risks of procyclical lending

[15] Tier 1 or core capital is defined as common equity shares, disclosed reserves, non-cumulative preference shares, other hybrid equity instruments, retained earnings and minority interests in consolidated subsidiaries (excluding goodwill and other deductions).
Tier 2 capital consisted of cumulative perpetual preferred stock, loan loss allowances, undisclosed reserves, revaluation reserves, general loan loss reserves, hybrid debt instruments, and cumulative preference shares, as well as subordinated debt which included instruments like convertible bonds and cumulative preference shares.

and mitigate against the negative effects which arose from the contraction in credit supply that followed the 2008 financial crisis.

Section III: Literature Review

Background

Banks are incentivised to increase expected returns by utilising increasing (Carnell, Macey & Miller 2009). Regulated capital adequacy ratios are therefore important to contain excessive leverage and mitigate against aggressive risk-taking. In the event of shocks to the banking system, excess capital provides a buffer against both actual and expected losses.

Banks can be expected to meet increased capital adequacy requirements by issuing new equity, reducing the supply of bank loans, or by diversifying their lending portfolio away from higher RWA like commercial loans towards risk free assets like government bonds (Barajas, 2005). The implementation of risk based capital regulation would not be expected to significantly impact on the supply of banks credit if raising additional capital were not costly (Aiyar, et al., 2012). However evidence shows banks are more inclined to respond to regulatory shocks by contracting credit supply in the short term due to the constricting nature of capital constraints and frictions in equity markets (Jackson et al., 1999).

Banks experience increased loan loss provisioning and write-offs during economic downturns which lower capital through a depletion of equity. Banks would need to reduce lending in recessions to not breach minimum capital adequacy regulations. It has been suggested that this may have exacerbated 2008 financial crisis (Hyun & Rhee, 2010). Poorly capitalised banks are in a relatively worse position to withstand periods of financial stress associated with economic downturns since the absence of a capital buffer provides little protection against breaching regulated capital adequacy requirements without reducing lending.

a International evidence of the impact of risk based capital regulation on bank lending

Empirical evidence of the impact of risk based capital regulation is mixed. Seminal research by Bernanke and Lown (1991) examined the causes of the slowdown in bank lending in the US in the early 1990’s. Their results indicate that credit contraction was more attributable to the deterioration of the balance sheets of highly leveraged borrowers as asset and property prices fell. They find only modest effects for undercapitalised banks and no clear evidence of regulation significantly reducing lending.

Hancock and Wilcox (1994) show that risk based capital requirements had no effect in reducing lending in undercapitalised US banks and observe that banks with risk weighted capital shortfalls actually increased lending towards higher risk weighted assets like commercial real estate and business loans.

Furfine (2001) used US banking data to demonstrate that although capital regulation does influence the composition of loan portfolios, the introduction of rigid regulatory supervision exhibits a more significant effect on the structure of banks' balance sheets.

Wagster (1999) argues that the introduction of capital ratios resulted in banks changing the mix of assets in their portfolios by substituting away from higher risk assets like commercial loans to risk free assets like US treasury bonds. His research provides evidence that between 1990 and 1992 banks in the US, Canada and the UK were significantly lowering their loan exposure while increasing their holdings of government securities. He also attributes his findings to the increased supervision of banks in these three countries and therefore finds support for the higher regulatory scrutiny hypothesis.

A notable exception is illustrated by Thakor (1996) in analysing the relationship between regulated bank capital-to-asset ratios on aggregate bank lending. The basis for his research is to consider US banks' substitution of commercial loans in favour of government bonds in the early 1990's. He examines the impact of risk based capital requirements on credit supply across multiple banks and focuses on the impact of the bank screening process. Based on the scope of the study he finds evidence that borrowers are rationed for credit at both the individual bank level as well as through the banking system as a whole. More stringent capital regulation therefore results in more credit rationing by banks and could actually serve to lower the willingness of banks to screen risky borrowers.

Berger and Udell (1994) utilise time series analysis on US banks between 1979 and 1992 to assess whether the introduction of more stringent risk based capital regulations under Basel I contributed to the slowdown in commercial bank loans during the 1990 to 1991 recession. They fail to find conclusive evidence that US banks constrained credit supply through loans after the introduction of the 1988 Basel Accord and argue that if US banks did not increase portfolio reallocation from high risk loans to low risk securities after the introduction of Basel I, then risk based capital regulation cannot be responsible for the credit crunch in the US in the early 1990's.

Francis and Osborne (2009) examined a sample of around 200 UK banks between 1996 and 2007 and found that over the observation period, banks with excess capital relative to their target ratios experience higher growth in credit extension and lower growth in regulatory and tier 1 capital. Their empirical research shows only moderate effects of capital shortfalls on bank lending, with a 1% increase in capital requirements in 2002 resulting in a 1.2% reduction in lending over a 4 year period.

Gambacorta and Mistrulli (2003) study quarterly data on Italian banks between 1992 and 2001 and find more significant effects with the implementation of capital regulation and solvency ratios in excess of 8% reducing bank lending by 20% over a period of two years. Further research on Italian banks by Albertazzi and Marchetti (2010) finds larger less capitalised banks substituting away from riskier borrowers while smaller less capitalised banks did not reallocate portfolio assets away from riskier loans.

Hyun and Rhee's (2010) analysis of Asian banks shows that capital constrained banks have a preference for reducing credit supply over issuing new equity, and that Asian banks are more inclined to limit credit exposure to high risk weighted assets when their balance sheets are undercapitalised.

These results are consistent with earlier research by Montgomery (2005) where the implementation of the Basel capital reforms in international Japanese banks was also shown to cause banks to reduce higher RWA. Peek and Rosengren (2000) also analyse Japanese data to establish that US subsidiaries of Japanese banks responded to losses in their holding companies by reducing credit supply in the US lending market.

Hassan and Hussain (2006) use data from 11 developing countries to find that capital adequacy regulation did not result in undercapitalised banks increasing their capital ratios. Barajas, et al. (2005) also researched a cross-section of emerging market bank data. They find evidence that emerging market banks increased both average capital levels and credit extension since the implementation of the Basel I. These findings were generally inconsistent with those of Chiuri, Ferri and Majnoni (2002) who assert that the implementation of risk based capital regulations under the Basel Accord significantly constrained credit supply in less capitalised emerging economy banks, especially for those banks operating under only a domestic banking licence.

b South African evidence of the impact of risk based capital regulation on bank lending

The literature examining the impact of capital adequacy regulation on bank credit supply in South Africa is not particularly extensive. Cumming and Nel (2005) assert that banks only respond to capital regulation if they have capital shortfalls relative to required minimum ratios. Their paper finds that the implementation of the original Basel Accord increased capital adequacy ratios in South African banks and that this increase was met through the raising of additional capital instead of reducing credit supply. They do however indicate that outside of the four dominant banks, smaller emerging banks may have to reduce lending as capital markets are less accessible for these banks. The authors find evidence of a slowdown in lending towards certain asset classes like private loans and mortgages and into lower risk assets.

c Identifying supply and demand side factors

Disentangling supply and demand side factors has proven to be a constraint in most models analysing the causality between risk based capital regulation and a contraction in aggregate bank lending, but some studies have qualified their findings in terms of underlying macroeconomic variables. Berrospide and Edge (2010) use panel data regression techniques to identify that bank holding company (BHC) capital-to-asset ratios only have a small effect on the lending behaviour of US BHC's over the period from 1990 to 2008. Using a vector autoregression (VAR) model they find a more significant but still relatively modest effect on loan growth when employing macroeconomic time series and aggregate commercial bank data. They further demonstrate that the slowdown in credit growth during the financial crisis of 2008 is more attributable to macroeconomic shocks to GDP than to shocks to the banking system through capital adequacy regulation[16].

Section IV: Scope of Research

a Research objective

The primary objective of this study is to understand how South African banks have altered aggregate credit supply over the 1994 to 2013 observation period and to establish whether;

1. the introduction of risk based capital regulation through the Basel Accords affected the propensity of banks to supply credit to the real economy, or if
2. the changes in aggregate bank lending are more attributable to other demand and supply factors.

A secondary objective of the study is also to analyse the extent to which South African banks have increased risk taking in both retail and commercial lending portfolios over the observation period.

b Data description

Aggregate industry bank data was obtained from the South African Reserve Bank (SARB) website. The relevant data series used are:

1. Monthly balance sheet data for the aggregate South African banking industry – DI900 and BA900 series.
   - DI 900 data is available from January 1993 to December 2007 and reporting standards are compliant with Basel I requirements.
   - BA900 data is available from January 2008 to June 2013.

   Monthly data was consolidated to allow comparison of balance sheets under the two reporting formats.
2. Quarterly capital adequacy data for the aggregate South African banking industry – DI400 and BA700 series. Monthly data for DI400 is only available from January 2001. To facilitate more reliable comparisons and be consistent between different periods, quarterly data has been used for the full 1994 to 2013 observation period for all capital adequacy calculations.
   - DI400 data is available from January 1994 to December 2007 and reporting standards are compliant with Basel I requirements.
   - BA700 data is available from January 2008 to June 2013.

The following additional data was also utilised in the study:

3. Inflation and interest rate data, sourced from the Statistics South Africa website.
4. Banking liabilities to the public and GDP data, sourced from Thompson Reuters Datastream.

[16] Berrospide and Edge (2010) use GDP as a proxy for credit demand in regressing macroeconomic time series data for their vector autoregression (VAR) model.

c Research methodology

The study is split into two periods. The first period is from 1994 to 2007, and findings are qualified under the Basel I capital framework, where banks were required to maintain minimum capital adequacy ratios of 8%. South African banks were required to meet this standard by 1995, with the South African Reserve Bank (SARB) raising the target capital adequacy requirement to 10% in 2001. The second period runs from 2008 to 2013, with all findings being contextualised under the Basel II framework. An important qualification for all findings relating to RWA and credit supply over this period is that credit risk is measured under the Standardised Approach, with all commercial lending being risk weighted at 100%.

The specific outcomes associated with the primary research objective are to focus on:

1. Bank capital adequacy
    - Analyse trends in capital adequacy ratios and examine whether these are attributable to an increase in qualifying capital or a reduction in RWA.
2. Credit supply
    - Assess the extent to which banks have been substituting between higher on-balance sheet RWA for lower on-balance sheet RWA.
    - Understand how banks have altered credit supply at the aggregate industry level and examine any differentiation between credit supply to the retail and commercial segments of the market.
    - Review both the composition and annual growth rates of bank lending in the retail and commercial segments and identify trends in credit supply across the primary lending categories in the portfolio.
3. Develop a VAR model using time series data to test the relationship between bank lending and capital adequacy over the observation period.

d Limitations of the study

1. Exclusion of off-balance sheet (OBS) lending.

This paper only considers on-balance sheet lending and credit risk in the banking book. The analysis is undertaken at the aggregate industry level and does not include an analysis of bank holding company (BHC) data. The primary reason for isolating 'vanilla' on-balance sheet lending is because this encompasses the primary form of credit extension to the real economy in South Africa.

e Data Consistency

A constraint in analysing historical trends over the full observation period is that SARB reporting requirements are not consistent across Basel I, II and III. Basel I disclosures only required reporting of risk weighted credit exposure across the different weighting buckets, with this amount used for capital adequacy calculations. Basel II distinguished between credit, operational, market, equity and other risk in terms of the SARB reporting requirements, and risk weighted exposure is reported in aggregate across these categories for capital adequacy calculations. Basel III disclosure is also based on total risk weighted exposure, but because only two periods of quarterly data to June 2013 are included in the analysis, this is not expected to materially impact the findings of this paper.

Section V: Bank capital analysis

a Banking industry liabilities

The main challenge affecting credit supply in the South African banking industry is its overreliance on institutional funding. The 2008 financial crisis led to the Basel III amendments that complement capital regulation with a liquidity framework which mitigates the risk of both retail and institutional funders withdrawing from the market.

Graph 1 demonstrates the reliance of the South African banking industry on private sector funding, with corporate and institutional funders making up 49% of average liabilities over the last 5 years and household deposits only averaging 16%. On the evidence of the existing liability mix, the structure of the South African money market will make it difficult for banks to meet more rigid Basel III liquidity ratios without intervention or support by the SARB.

b Bank Capital Adequacy

South African banks were expected to be compliant with the minimum 8% capital adequacy ratio proposed by Basel I by 1995, with this minimum being increased to 10% in 2001 (Cumming and Nel, 2005). Basel II was introduced in January 2008 with the SARB imposing an additional 1.5% capital buffer to the regulated 8% prescribed by the BCBS for systemic risk. The SARB is also able to utilise its national discretion to impose additional idiosyncratic buffers on domestic banks depending on the risk profile of the individual bank (IMF, 2010). Basel III was introduced in January 2013 on a phased-in approach to 2019, with national discretion for additional requirements including a 2% buffer with scope for revision when appropriate. The SARB has advised that the maximum capital ratio (excluding any bank specific or countercyclical buffers) that a domestic systemically important bank (D-SIB) will be required to maintain will amount to 14% (South African Reserve Bank, 2012b).

South African banks were fully compliant with the minimum 8% capital adequacy requirement under Basel I implementation by 1995, with this ratio increasing relatively consistently until the end of 2000, despite the absence of any additional capital adequacy regulation. With capital ratios in excess of 12% in 2000, the increase in required capital to 10% in 2001 would not have required South African banks to take remedial action. The capital adequacy ratio experienced a gradual decline between 2005 and the beginning of 2008, coinciding with the finalisation of the framework for the Basel II accord. South African banks were however still well capitalised leading up to the global financial crisis with a capital adequacy ratio (CAR) of around 12% when Basel II was implemented in 2008.

An interesting observation is the significant increase in capital ratios between 2008 and 2011. Banks were already fully compliant with Basel II capital adequacy requirements, which would suggest that other factors influenced the 3% increase in the capital ratio to 15% in 2011. In the year prior to Basel III implementation in January 2013, the CAR again increased, peaking at 15.9% in December 2012.

A possible reason for this could be due to the lack of a deposit insurance scheme in the country, which has been highlighted as a significant shortcoming in the domestic banking industry (IMF, 2010). Consistent with the view of Kashyap and Stein (1995), higher capital levels are used as a signalling mechanism to mitigate investor concerns over the riskiness of uninsured non-reserve liabilities. A simpler explanation is that South African banks hold excess capital for increased loss absorbency, which shields credit supply from regulatory changes (Francis and Osborne, 2009). The structure of domestic banks' balance sheets will also be significantly influenced by more stringent regulation by the national regulator, as was evidenced by Furfine (2001) in the US banking sector.

As illustrated in Graph 2, South African banks have historically been well capitalised, with an average capital adequacy ratio of 12% since 1994. However, an important consideration is how South African banks have achieved higher capital adequacy ratios. The following section will assess whether banks have simply increased qualifying capital or changed the composition of their portfolios by adjusting risk weighted assets (RWA).

c Qualifying Capital versus RWA

An analysis of the components of the capital adequacy ratio has shown that banks have grown qualifying capital by an average of 16% and RWA by 13% a year over the full observation period. In short, South African banks have on average increased capital adequacy ratios by raising additional capital as opposed to reducing on-balance sheet lending. The evidence over the full period would suggest that the increase in bank capital adequacy ratio from 8% in 1994 to almost 16% in 2013 was driven by increases in qualifying capital as opposed to significantly adjusting RWA. This finding would support the conclusions by Cumming and Nel (2005) that South Africa has well developed capital markets for the raising of equity.

Graph 3 shows that the only period during which South African banks were growing RWA faster than capital on a sustained basis was between 2005 and 2007. The decline in the CAR between 2005 and 2007 was driven by this trend. The period between 2008 and 2010 represents a sustained period of qualifying capital falling by a slower rate than RWA and was a fundamental driver in the CAR increasing by around 3%. It is important to mention that banks struggled to raise additional capital over this period, and the increasing CAR is more attributable to a significant slowdown in the annual growth rate of RWA. This period also corresponds to a considerable slowdown in credit supply which will be further assessed later in this paper.

d Analysis of RWA

Graph 4 is an illustration of the risk weighted composition of bank loans expressed as a percentage of total on-balance sheet RWA. The 5%, 10% and 20% risk weighting categories have historically made up less than 10% of on-balance sheet RWA and have therefore been excluded from the analysis. Subsequent to Basel I implementation banks were substituting away from 50% RWA, with this trend largely continuing to 2001. Banks were already holding excess capital buffers by 1995, so the reduction in 50% RWA cannot be attributed to the requirement to comply with the minimum 8% capital adequacy requirement.

The 2% increase in the capital adequacy ratio between 1998 and 2000 was driven by banks substituting away from 100% RWA towards 0% RWA. Although this trend cannot be attributed to specific regulatory intervention, this is the only period in this study where evidence of loan contraction in favour of holding lower RWA can be found. This is consistent with Wagster's (1999) observation of similar actions by US, UK and Canadian banks between 1990 and 1992, which were ascribed to increased supervision by regulators rather than capital adequacy requirements. It is also possible that the higher 10% minimum capital ratio imposed by the SARB in 2001 could have induced banks to hold excess capital in order to maintain consistent excess buffers.

The increasing trend in 0% RWA was reversed in 2002, with Graph 4 showing a clear inflection point where banks continued to lower exposure to these assets leading up to the implementation of Basel II. The trend in 50% RWA shows the opposite trend, with banks actively increasing exposure to residential mortgages in the lead-up to Basel II. This trend will be examined further through an analysis of the aggregate retail lending portfolio.

Based on the evidence it can be concluded that banks were increasing risk taking between 2002 and 2006 by substituting away from 0% RWA in favour of 50% RWA. This trend would support the argument as presented by Rochet (1992) and Kim and Santamero (1988) that well capitalised banks are less risk averse, as South African banks were holding capital well in excess of regulated minima which provided the scope to increase exposure to both 50% RWA as well as aggregate RWA as evidenced in Graph 3. The trend in 100% RWA which comprises predominantly commercial lending has remained relatively static between 2002 and 2007. This trend will be more comprehensively assessed through an analysis of the aggregate commercial lending portfolio.

The RWA analysis presented above does not provide an insight into which specific assets were being substituted in lending portfolios. The analysis is also constrained by different reporting methods under Basel I and II preventing a consistent comparison of RWA after 2007. The following section on credit supply will attempt to overcome this challenge by identifying the primary products in banking lending portfolios and analysing trends over the full observation period.

Section VI: Empirical analysis of credit supply by South African banks

a Aggregate Credit Supply

The evidence presented below will explore significant trends in bank lending in the context of bank capital adequacy and will also assess the appetite of banks to increase risk taking by either altering credit supply or substituting between different lending products. An important question is whether there is any evidence that credit reduction has been induced by risk based capital regulation or whether the propensity for banks to extend credit is more attributable to other demand and supply factors. Total gross lending includes retail and commercial advances. At the aggregate industry level banks actually increased lending during the early stages of Basel I (see Graph 5). The evidence would therefore suggest that compliance with the Basel I required 8% capital ratio in 1995 did therefore not result in a contraction in aggregate credit supply. The general trend of declining growth in bank lending between 1995 and 2000 occurred in the absence of any risk based capital regulation impacting on-balance sheet lending.

A significant slowdown in bank lending is evident between 2006 and 2010. The magnitude of the change amounted to a four standard deviation decline. This is consistent with the declining growth rates of RWA between mid-2007 and 2010 previously identified. Aggregate bank lending growth exhibits an accelerated decline from 2008 when Basel II reforms were introduced. The evidence would suggest that the credit crunch was not however induced by the implementation of risk based capital regulation. Although bank capital adequacy also increased substantially between 2006 and 2010, banks were already holding excess capital buffers above the minimum 10% requirement. This suggests that lending trends could be more attributable to a combination of both demand and supply side factors such as GDP growth, inflation and interest rates, which materially impacted on lending growth over the observation period. This will be explored further under the VAR model in Section VIII of this paper. The accelerated decline in bank capital in 2008 also warrants a more quantitative analysis under the VAR model before any causality between capital regulation and a slowdown in bank lending is dismissed.

b Retail versus Commercial credit supply

An analysis of retail and commercial lending portfolios seeks to establish the extent to which banks were substituting between products during the observation period. The period between 2008 and 2013 is of particular interest, not only due to Basel II capital reforms being introduced, but also because the analysis of RWA presented earlier does not extend to this period due to changes in reporting standards under Basel II. Observing how banks have altered the composition of lending portfolios will provide a good approximation of risk taking by banks over this period. Analysis of trends in retail versus commercial lending will also provide context to the changes in capital adequacy ratios around the time of Basel II implementation, specifically the decline between 2004 and 2007 and increase between 2007 and 2012.

At the industry level, the split between retail and commercial lending has remained relatively unchanged over the last 20 years, with higher risk-weighted commercial advances around 55% of total bank lending.

Graph 6 suggests that commercial lending has been more volatile than retail lending, with greater cyclical fluctuations evident over the full observation period. Under both Basel I and the Standardised Approach of Basel II commercial lending was assigned a 100% risk weighting, whereas retail mortgage lending, which has historically comprised 70% of total retail lending, was assigned a 50% risk weighting under Basel I and a 35% to 50% risk weighting under Basel II depending on the Loan to Value (LTV) of the credit facility. Based on these rating methodologies, it would be fair to conclude that an increasing propensity to extend credit to the commercial segment would represent increased risk taking by South African banks.

The general trend of retail lending for the first five years after the introduction of Basel I was a relatively significant slowdown in credit extension. The slowdown corresponds to a decline in 50% RWA in Graph 4 which is comprised of residential mortgages under the Basel I framework. This would suggest that banks were decreasing mortgage lending between 1995 and 2000. Significant slowdowns also occurred between the end of 2001 and 2002, as well as from 2006 to 2010. The latter period corresponds with the SARB phase-in of Basel II in the domestic banking industry, with final implementation taking place in January 2008.

Between 1996 and 2000 banks were growing commercial lending faster than retail. The accelerated commercial lending growth evidenced between 1997 and 1999 is consistent with the increase in 100% RWA shown in Graph 4. The evidence of commercial lending provides a similar outcome to retail lending with regards to the apparently limited effect of capital reforms on credit extension and points to other demand and supply factors being more influential on the ability and willingness of banks to lend. The slowdown in commercial credit extension lagged the retail segment by around 6 months in 2006 but an interesting observation is the significantly more pronounced slowdown between 2008 and 2009. The accelerated slowdown observed in aggregate lending appears to be more attributable to a slowdown in commercial bank lending. Commercial lending has however increased more rapidly than retail lending since 2011 and has effectively led the recovery at the aggregate industry level, but compared to the historical average shown in Graph 5, this remains relatively weak.

To fully understand the drivers underlying these trends it is important to examine the banks' product mix across lending portfolios in both retail and commercial segments.

Analysis of the retail credit supply

a Retail portfolio composition

Graph 7 shows that banks have significantly decreased exposure to home loans, which have historically accounted for around 70% of banks retail assets and have decreased from 72% to 63% following the introduction of Basel II in January 2008. Banks have substituted away from longer dated mortgage lending towards personal loans, which includes unsecured lending to individuals and households. The contribution of other products to the total retail lending portfolio has remained relatively unchanged since the introduction of risk based capital reforms.

The evidence would suggest that, since the implementation of Basel II in 2008, banks were increasing risk taking by substituting away from lower 50% RWA, in the form of residential mortgages, towards higher RWA in the form of personal retail loans which are weighted between 75% and 100% under the Standardised Approach of Basel II. Personal lending increased from 5% of bank retail portfolios in 2008 to 13% in 2013, but the increase occurred over a period when banks increased capital adequacy levels to almost 16%. This finding would further support the conclusion that well capitalised banks are more risk seeking.

i Retail credit growth

Since the introduction of Basel II in 2008, the composition of banks' retail lending portfolios has shifted towards shorter dated funding. With home loans accounting for 70% of retail lending since 1994, this shift accounts for the declining trend in total retail lending growth since 2006 (Graph 6). Similarly, the increase in mortgage lending between 2003 and 2006 corresponds to a reduction in the capital adequacy ratio, while the subsequent slowdown in mortgage lending between 2006 and 2012 ties into a significant increase in the ratio (Graph 2).

Banks were shifting the composition of retail lending portfolios more towards higher risk personal loans between 2009 and 2012. An analysis of retail credit extension shows that banks have significantly increased supply towards both personal lending and overdrafts over this period (see Graph 8). Because of the 70% concentration of mortgage lending in the retail lending portfolio, the increased lending growth in these two assets did not have a material impact on the general decline in retail lending since 2006.

Personal loans include unsecured lending, which has increased significantly in South Africa with annual growth rates peaking slightly above 40% in 2011, while home loan growth has failed to recover since declining from annual growth rates of 36% in 2006. The evidence points to the excessive growth in retail personal loans between 2009 and 2012 that subsequently resulted in the collapse of African Bank in 2014.

b Analysis of the commercial credit supply

i Commercial portfolio composition

Given that commercial lending makes up 55% of aggregate industry lending, the increase in private sector loans over the observation period (see Graph 9) would suggest that banks have focused on this asset to lead the recovery exhibited in industry credit supply between 2010 and 2013 (Graph 5).

Commercial mortgage lending has largely been maintained in line with historical averages since 1994. Commercial mortgages are usually extended against the term of the underlying property lease and typically provided at lower LTV's than home loan credit. They are however viewed as riskier assets under the Basel framework.

It is surprising to note that overdrafts have reduced as a percentage of commercial lending portfolios, especially leading up to Basel III where there is an increased emphasis of matching asset and liability duration. Overdraft facilities should be easier to match against the shorter-maturity funding that is more readily available in the domestic money market. The lower overdraft contribution can potentially be ascribed to Basel III liquidity requirements only being phased in from 2013 and more stringent liquidity requirements not yet impacting on bank lending portfolios.

ii Commercial credit growth

Falling capital adequacy ratios between 2003 and 2006 were driven in part by increases in 50% RWA as demonstrated earlier. The significant increase in commercial mortgages and private sector loans between 2004 and 2007 were also important contributors to the falling capital adequacy ratio and increasing of 100% RWA.

It can be observed that banks significantly increased credit supply through private sector loans from 2010 (see Graph 10). Given that household balance sheets were significantly leveraged in 2008 with household debt to disposable income peaking at around 83% this suggests that private sector loans were at the time considered less risky, notwithstanding that such lending attracted a default risk weighting of 100%. In contrast to the relatively small percentage of total within the retail lending portfolio, private sector loans make up 30% of commercial lending and are therefore able to directly influence the growth in industry lending at the aggregate level.

It is worth noting that despite increased risk taking in commercial lending since 2010, banks were also improving their balance sheets by holding capital buffers ahead of both Basel II and Basel III requirements.

Section VII: Vector autoregression (VAR) model

a Background

The empirical trend analysis of credit supply presented in the previous section has been unable to establish any impact of risk based capital regulation on lending by South African banks. To further explore the underlying determinants of bank lending over the observation period a VAR model is used. The model considers both demand and supply side variables and quantifies the individual effects of these variables on bank lending growth in South Africa.

Previous studies have attempted to measure the causal effect of bank capital on loan growth using panel data analysis. However, panel data estimation potentially suffers from survivorship bias which results in downward biased estimates (Berrospide and Edge, 2010). To overcome this problem many papers have employed a VAR model to study the effects of bank capital on loan growth.

b Empirical Methodology

For the estimation of the effect of bank capital on loan growth a slightly modified version of the VAR model considered by Lown and Morgan (2006) and Berrospide and Edge (2010) is used. The model aims to analyse the effect of five key variables as determinants of bank lending. Bank supply side variables used are the aggregate capital adequacy ratio and the growth rate of bank liabilities to the public. Macroeconomic variables included are quarterly real GDP growth, consumer price inflation and the prime lending rate. The last three variables are standard monetary policy VAR components which allow the interaction between the real economy and bank lending to be examined. Furthermore, the variables interact in an endogenous manner, which means that each variable may be a determinant of another variable.

The sample is split into two periods: 1994:Q1 to 2007:Q4 with Basel I as the regulatory framework, and 2008:Q1 to 2013:Q2 with Basel II as the dominant framework (Basel III data is only included for two quarters). Three regressions are run to test the dependency of the growth rate of loans on the five key independent variables mentioned above. The first regression covers the entire sample period from 1994:Q1 to 2013:Q2, the second from 1994:Q1 – 2007:Q4, and the third from 2008:Q1 to 2013:Q2.

The VAR model is largely viewed as '*atheoretic*' as it assumes less prior information (Sims, 1980).
Consider a simple bivariate system given by

$$y_t = b_{10} - b_{12}z_t + \gamma_{11}y_{t-1} + \gamma_{12}y_{t-1} + \varepsilon_{yt} \quad (1)$$

$$z_t = b_{20} - b_{21}y_t + \gamma_{21}y_{t-1} + \gamma_{22}z_{t-1} + \varepsilon_{zt} \quad (2)$$

where the two variables y and z are assumed endogenous and stationary; ε_{yt} and ε_{zt} are uncorrelated white noise disturbances with standard deviations σ_y and σ_z respectively. Equations (1) and (2) therefore constitute a first-order VAR as the longest lag length is one. The structure of the system is such that current values of *z* are allowed to affect *y*, and vice versa. So using equation (2) as an example, the coefficient $-b_{21}$ is the contemporaneous effect of a unit change of y_t on z_t and y_{21} is the effect of a unit change in y_{t-1} on z_t. Shocks of ε_{yt} affect *y* directly but *z* indirectly. In the first-order autoregressive model given above by (1), the stability condition implies that the sum of y_{11} and y_{12} be less than one in absolute value. The right hand side of equations (1) and (2) are comprised of predetermined variables. The error terms are assumed to be serially uncorrelated and have constant covariance. Because each equation in the system has identical right-hand side variables, the equations can be estimated using ordinary least squares (OLS).

Sims (1980) argues that it is very difficult to accurately describe the regression output of the estimated systems as the addition of successive lags leads to varying coefficients over time. VAR coefficients are not usually quantified but the results are presented for the sake of completeness. Due to the endogenous relationships between the variables under consideration, the regression coefficients are not entirely reliable predictors of the effects of the independent variables on the dependent variable.

Impulse response functions (IRFs) are calculated to evaluate the effect of shocks on the variables of interest. The IRFs may be interpreted as the instantaneous effect of a one-standard deviation change in the independent variable on the dependent variable (for example, a one-standard deviation change in bank capital adequacy on loan growth). IRFs may be plotted to visually represent the behaviour of the variables of interest to the various shocks.

VAR models impose key assumptions on the time-series being analysed. All variables are assumed stationary. A time series is considered to be stationary if its mean and variance do not vary systematically over time (Gujarati, 2002). Where variables are not stationary, the resulting IRF will be invalid, and convergence (and stability) conditions will not be met. Where a time series is not stationary, one can difference the series to render it stationary. Differencing is the technique of subtracting current values of the time series from previous values ($y_t - y_{t-1}$). This technique was applied on the data.

Section VIII: VAR Results - Estimation of the effect of bank capital ratios on loan growth

The VAR model is based on bank capital in the current period less bank capital in the previous period and tests the dependency of bank capital on loan growth.

$$\Delta\%Loans_t = \alpha\Delta\%Loans_{t-1} + \beta\Delta\%realgdp_{t-1} + \delta inflation_{t-1} + \theta Liabilitiespublic_{t-1} + \gamma prime_{t-1} + \tau CAR_{t-1} + \varepsilon_t$$

In this estimation, differencing is represented by capital adequacy values in the current period less capital adequacy values in the previous period (i.e. a one period change in capital adequacy)[17].

The estimation results for the effect of the above variables on loan growth are reported in Table 1.

i OLS regression results

- Over the full observation period 1994 to 2013 the most significant variable affecting the growth rate of loans is the quarterly GDP growth rate, followed by the growth rate of liabilities to the public. All other macroeconomic variables were insignificant. The insignificance of bank capital is contrary to Berrospide and Edge (2010) who find more significant but still modest effects of bank capital on loan growth using macroeconomic time series and aggregate commercial banking data.
- Between 1994 and 2007 the only significant variable affecting loan growth was growth rate of liabilities to the public which provided a relatively similar result for the full observation period.
- 2008 to 2013 was characterised by relatively lower volatility in both inflation and interest rates and these two variables are identified as the most significant determinants of bank lending.

The conflicting results obtained over the three periods highlight the constraints identified by previous researchers in isolating the relative importance of specific variables on bank lending

[17] A second model, using the difference between actual and target capital ratios as the input variable, was also employed. The results of this model were consistent with those of the first model, and are therefore not analysed in this paper.

growth (e.g. Albertazzi and Marchetti (2010) and Jackson et al. (1999)). Capital adequacy is shown to be insignificant across all three periods used in the regression analysis. This finding is especially relevant for the interpretation of lending behaviour around the time of Basel II in South Africa, where a significant slowdown in credit supply was evidenced and the domestic economy experienced a recession in 2009. Bank capital levels however still remained above the regulated minima. This study therefore supports the conclusions of Gambacorta and Mistrulli (2003) that well capitalised banks are in a relatively better position to withstand periods of financial stress associated with economic downturns, and that the existence of a capital buffer provides more scope for these banks to meet regulated capital adequacy requirements.

An important finding is the significance of bank liabilities to the public on bank lending, not only because it emphasises the need to maintain adequate liquidity, but also because Basel III places greater reliance on retail deposits. The impact of bank liabilities is modelled as a supply side variable to the extent that banks' propensity to lend is determined by the amount of funding available at different points in the credit cycle. Retail deposits are not easily available in the South African financial system and, depending on how stringent regulators are in imposing enhanced liquidity reforms, this could constrain credit supply if banks struggle to attract retail funds going forward.

The importance of GDP on bank lending over the full observation period is expected. Consistent with Berrospide and Edge (2010), this is modelled as a demand side variable in the regression.

As stated earlier, this paper makes no attempt to disentangle bank specific supply side from demand side economic variables, as the endogeneity of the model is premised on all variables interacting with each other. However, the result under the IRFs will allow the effects of these variables on bank loan growth to be quantified to a certain extent.

i IRF results

The principal focus of IRF analysis is to identify those variables which are most influential in affecting bank lending and to attempt to confirm the insignificance of capital ratios on credit supply.

1. The relationship between bank lending and GDP (Graphs 11 & 12)

A macroeconomic shock as represented by a one standard deviation increase in real GDP growth increases bank lending over both the first and second quarters following the increase. Bank lending increases by almost 0.4% over the first two quarters but retreats to its longer term trend thereafter.

These results are consistent with findings by Jimenez et al. (2010) where the probability of loans being granted increases with higher GDP. Because the model has not specifically tested for procyclicality the results do not allow this study to conclude that South African banks significantly altered bank lending in economic downturns, but the IRF analysis does support the earlier findings of this study. The empirical evidence of negative lending growth in both the aggregate and retail portfolio as presented in Graphs 5 and 6 during the 2009 recession would however indicate that banks actively reduced risk taking and are less inclined to lend when economic prospects are poor. The propensity for banks to increase lending during periods of strong economic growth are premised on borrowers being perceived as less risky during these times.

Shocking the real economy with a one standard deviation change in bank lending produces the most pronounced short term effect of all the IRF functions examined. The impact of an increase in bank lending is immediate, with a 0.3% spike in real GDP growth. However this is not sustained, and the effect appears to fall to zero by the end of one year. This suggests that the reinforcing relationship between economic growth and bank lending may be fairly strong in the South African economy. Excess liquidity of bank funding provided to the real economy results in borrowers immediately increasing short term consumption. The evidence would suggest that households and corporates are more disposed to spending additional funds as opposed to allocating to discretional savings.

2. The relationship between bank capital and bank lending (Graph 13)

A regulatory shock in bank capital adequacy requirements has an insigificantly negative impact on bank lending, as banks contract lending by up 0.3% in the first quarter after the shock, and the effect moves through the system and normalises by the end of two years. This serves to confirm the findings of the empirical trend analysis, which failed to establish any impact of risk based capital regulation on lending by South African banks.

3. The relationship of liabilities to the public and bank lending (Graph 14)

The importance of liabilities to the public in the context of the South African banking system has already been discussed. According to the IRFs, a one standard deviation increase in banking liabilities will cause banks to increase lending in the quarter of the liquidity shock, but interestingly, mean reversion occurs rapidly in the next quarter. This could be indicative of existing balance sheet management norms at the aggregate level by South African banks, where the inability to attract and retain 'stickier' retail deposits has resulted in banks taking advantage of short term excess liquidity by allocating capital to acquiring new lending assets.

4. The relationship of other variables and bank lending (Graph 15)

Over the long term an increase in the prime lending rate causes bank lending to fall albeit at a rather small rate. This is consistent with Gambacorta and Mistrulli's (2003) findings that a tightening in monetary policy impacts on credit extension by banks, because the resultant decrease in reserve deposits cannot be completely offset by banks raising other types of funding like commercial paper or bonds through wholesale markets. Jimenez et al. (2010) also found that loan growth is positively related to lower interest rates.

Section IX: Conclusion

The principal objective of this paper is to analyse empirical trends in on-balance sheet lending in South African banks, and to establish whether the propensity for banks to extend credit at the aggregate industry level can be partly attributed to the increased regulatory requirements of target capital adequacy ratios or is more dependent on other demand and supply side variables. The results of this study find that risk based capital regulation through the Basel Accords has been insignificant in impacting on credit supply by South African banks. This can be ascribed to banks holding capital in excess of regulated target ratios.

It can furthermore be asserted that on average South African banks have complied with target capital adequacy ratios by raising additional capital as opposed to substituting higher RWA for lower RWA or by contracting aggregate credit supply. The only sustained period in the study which corresponded to a reversal of this trend, and where evidence of increased risk taking can be observed, was between 2005 and 2007 when domestic banks were significantly increasing exposure to 50% RWA through aggressive growth in residential mortgage lending.

The four standard deviation decline in bank lending which originated prior to the implementation of Basel II in 2008 was neither induced nor exaggerated by capital reforms, and is more attributable to both demand and supply side factors influencing bank lending at that time. Credit supply is significantly affected by liabilities to the public, which is heavily concentrated towards institutional funding in South Africa as retail deposits have historically been more difficult to attract as discretional savings levels are relatively low.

Credit demand is influenced more by the business cycle, with the evidence presented in the VAR analysis reinforcing that the relationship between economic growth and bank lending may be fairly strong in the South African economy.

Reference list

Aiyar, S., Calomiris, C & Wieladek, T. 2012. *Does Macro-Pru leak? Evidence from a U.K. Policy Experiment.* National Bureau of Economic Research (NBER) Working Paper No 17822. Cambridge, Massachusetts.

Albertazzi, U. & Marchetti, D. 2010. Credit Supply, Flight to Quality and Evergreening: An Analysis of Bank-Firm Relationships after Lehman. Bank of Italy Working Paper No.756. Rome, Italy.

Balin, B. 2008. *Basel I, Basel II, and Emerging Markets: A Nontechnical Analysis.* The Johns Hopkins University School of Advanced International Studies (SAIS). Washington D.C.

Barajas, A., Chami, R. & Cosimano, T. 2005. *Did the Basel Accord Cause a Credit Slowdown in Latin America?* International Monetary Fund (IMF) Working Paper No 38. Washington D.C.

Bank for International Settlements (BIS). 1988. *International convergence of capital measurement and capital standards.* Basel Committee on Banking Supervision Working Papers. Basel, Switzerland.

Bank for International Settlements (BIS). 2004. *International convergence of capital measurement and capital standards: A revised framework.* Basel Committee on Banking Supervision Working Papers. Basel, Switzerland.

Bank for International Settlements (BIS). 2010. *Basel III: A global regulatory framework for more resilient banks and banking systems*. Basel Committee on Banking Supervision Working Papers. Basel, Switzerland.

Berger, A. & Udell, G. 1994. Did Risk-based Capital Allocate Bank Credit and Cause a "Credit Crunch" in the United States? *Journal of Money, Credit, and Banking.* 26(3): 585-628.

Bernanke, B. & Lown, C. 1991. The Credit Crunch. *Brookings Papers on Economic Activity*. 2: 204-39.

Berrospide, J. & Edge, R. 2010. The Effects of Bank Capital on Lending: What Do We Know, and What Does it Mean? FEDS Working Paper No. 44. Washington, D.C.

Burhouse, S., Feid, J., French, G. and Ligon, K. 2003. *Basel and the Evolution of Capital Regulation: Moving Forward, Looking Back.* Federal Deposit Insurance Corporation. Washington, DC.

Carnell, R., Macey, J. & Miller, G. 2009. *The law of banking and financial institutions*. 4th edition, Aspen Publishers. New York.

Chiuri, M., Ferri, G., & Majnoni, G. 2002. The Macro-Economic Impact of Bank Capital Requirements in Emerging Economies: Past Evidence to Assess the Future. *Journal of Banking and Finance.* 26: 881-904.

Cumming, S. & Nel, H. 2005. Capital controls and the lending behaviour of South African banks: Preliminary findings on the expected impact of Basel II. *South African Journal of Economics*. 73(4): 641-656.

Francis, W. & Osborne, M. 2009. *Bank Regulation, Capital and Credit Supply: Measuring the Impact of Prudential Standards.* UK Financial Services Authority Occasional Paper No. 36. London, UK.

Furfine, C. 2001. Bank Portfolio Allocation: The Impact of Capital Requirements, Regulatory Monitoring and Economic Conditions. *Journal of Financial Services Research. 20: 33-56.*

Gambacorta, L. & Mistrulli, P. 2003. *Bank Capital and Lending Behavior: Empirical Evidence for Italy*. Bank of Italy Working Paper 486. Rome, Italy.

Gujarati, D. 2002. *Basic Econometrics*. 4th Edition. McGraw-Hill. New York, USA.

Hancock, D. & Wilcox, J. 1994. Bank Capital and Credit Crunch: The Roles of Risk-Weighted and Unweighted Capital Regulations. *Journal of the American Real Estate and Urban Economics Association*. 22: 59-94.

Hassan, K. & Hussain, M. 2006. *Basel II and Bank Credit Risk: Evidence from Emerging Markets*. Networks Financial Institute Working Paper. No 10/2006. Indiana, USA.

Heffernan, S. 2005. *Modern Banking*. The Wiley Finance Series. West Sussex, England.

Hogan, W. & Sharpe, I. 1997. Prudential Regulation of the Financial System: A Functional Approach.
Agenda. 4: 15–28.

Hyun, J-S. & Rhee, B-K. 2011. Bank capital regulation and credit supply. *Journal of Banking and Finance*. 35(2): 323-30.

International Monetary Fund (IMF). 2010. South Africa: Detailed Assessment of Compliance on Basel Core Principles for Effective Banking Supervision. IMF Country Report No 10/353.

Jackson, P., Furfine, C., Groeneveld, H., Hancock, D., Jones, D., Perraudin, W., Radecki, L. & Yoneyama, M. 1999. *Capital Requirements and Bank Behaviour: The Impact of the Basle Accord.* Basel Committee on Banking Supervision Working Papers No 1. Basel, Switzerland.

Jimenez, G., Ongena S., Peydro J., & Saurina, J. 2010. *Credit Supply: Identifying Balance-Sheet Channels with Loan Applications and Granted Loans.* Centre for Economic Policy Research Discussion Paper No. 7655. London, UK.

Kashyap, A. & Stein, J. 1995. *The Impact of Monetary Policy on Bank Balance Sheets*. Federal Reserve Bank of Chicago (FRB) Chicago Economic Note. Chicago, USA.

Kim, D. & Santomero, A. 1988. Risk in Banking and Capital Regulation. *Journal of Finance*. 43: 1219-1233.

Lall, R. 2009. *Why Basel II failed and why any Basel III is doomed*. Global Economic Governance Programme Working Paper 2009/52. Oxford, UK.

Lown, C. & Morgan, D. 2006. The Credit Cycle and the Business Cycle: New Findings Using the Loan Officer Opinion Survey. *Journal of Money, Credit and Banking* 38: 1575-1597.

Lybeck, J. 2011. *A Global History of the Financial Crash of 2007-2010*. Cambridge University Press. Cambridge.

Montgomery, H. 2005. The effect of the Basel Accord on bank portfolios in Japan. *Journal of the Japanese and International Economies.* 19: 24–36.

Peek, J. & Rosengren, E. 2000. Collateral Damage: Effects of the Japanese Bank Crisis on Real Activity in the United States. *American Economic Review.* 90(1): 30-45.

Rochet, J. 1992. Capital Requirements and the Behaviour of Commercial Banks. *European Economic Review.* 36: 733-62.

Santos, J. 2000. *Bank Capital Regulation in Contemporary Banking Theory: A Review of the Literature.* Bank for International Settlements Working Papers No 90. Basel, Switzerland.

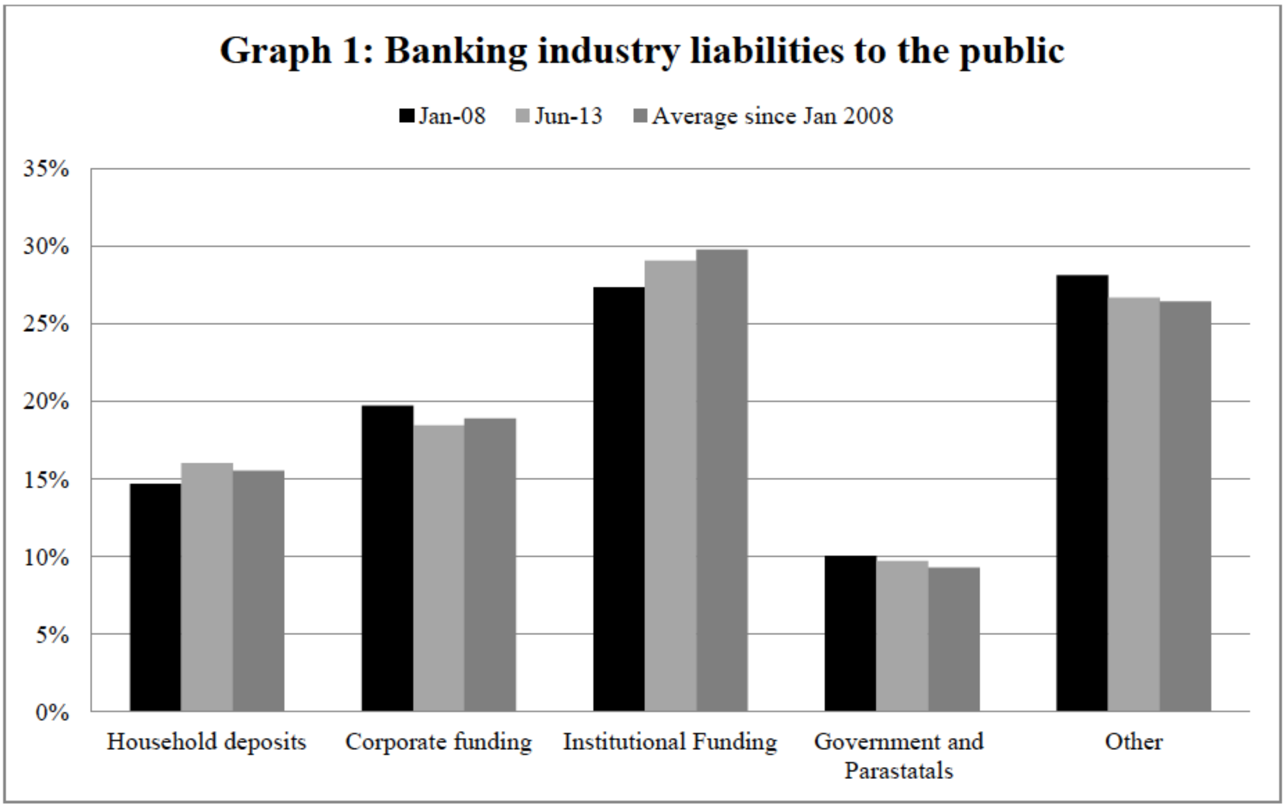
Sims, C. 1980. Macroeconomics and Reality. *Econometrica.* 48: 1-48.

South African Reserve Bank. 2012. Guidance Note 9/2012: Capital framework for South Africa based on the Basel III framework. Pretoria: South Africa.

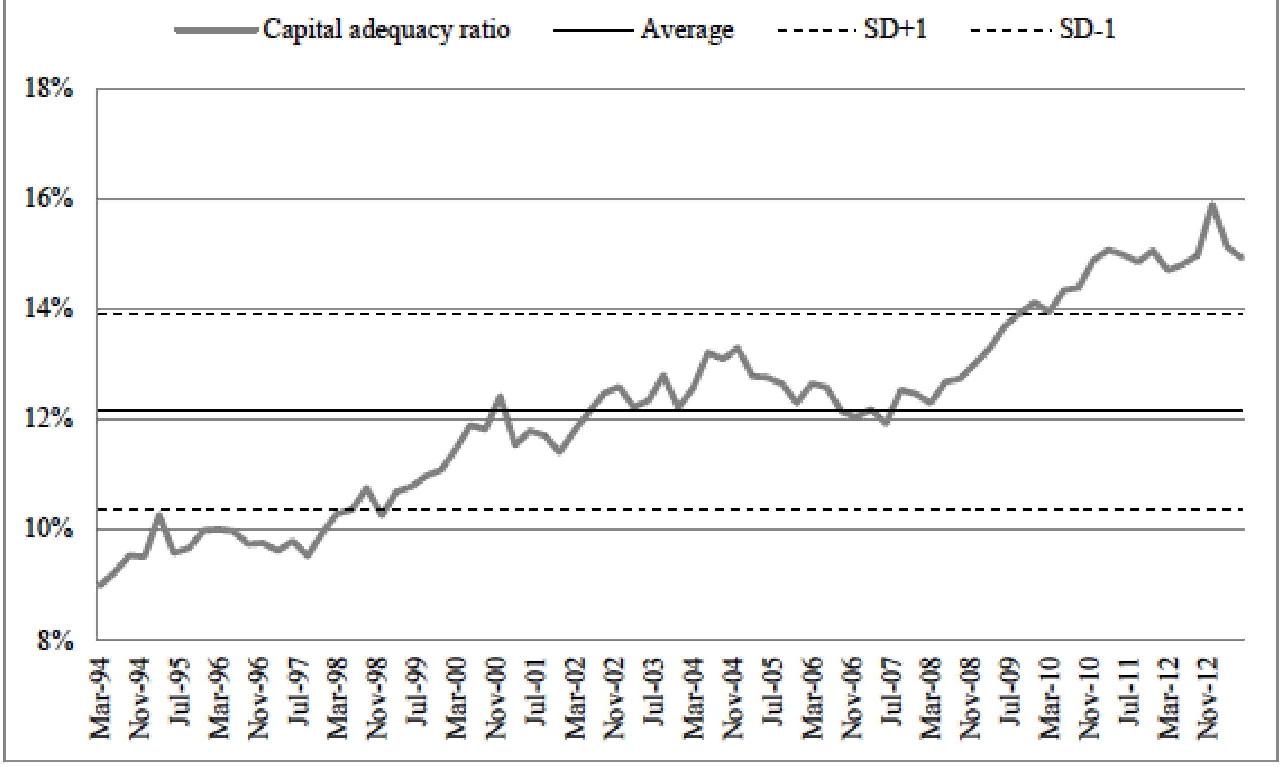
Thakor, A. 1996. Capital Requirements, Monetary Policy, and Aggregate Bank Lending: Theory and Empirical Evidence. *Journal of Finance*. 51: 279-324.

Wagster, J. 1999. The Basle Accord of 1988 and the International Credit Crunch of 1989-1992. Journal of Financial Services Research. 15(2): 123-143.

Appendix I: Graphs and Tables

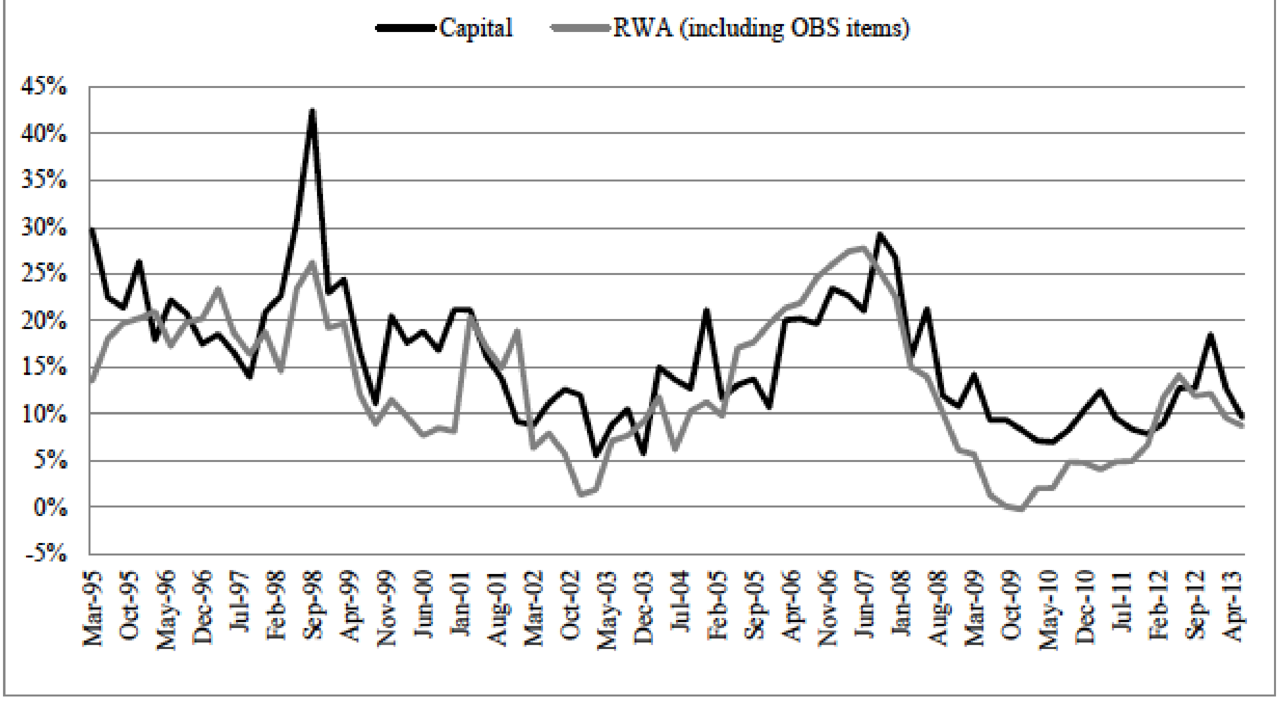


Graph 2: Bank Capital Adequacy



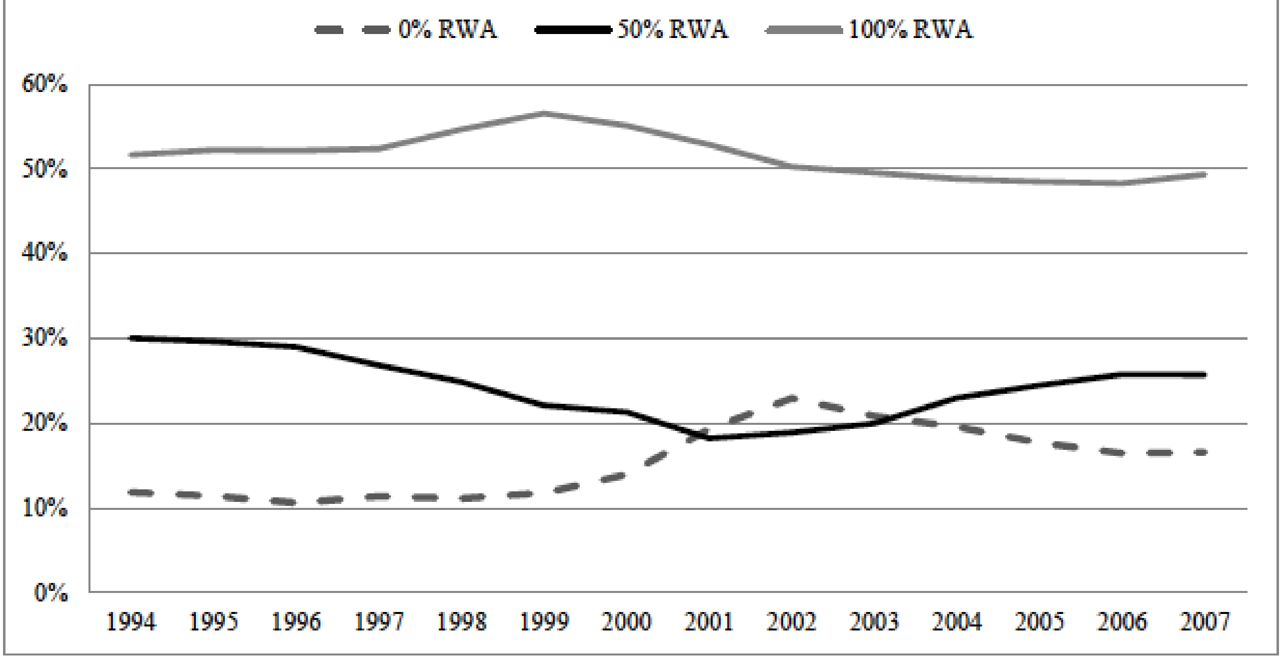
Source: SARB, Author's own calculations.

Graph 3: Qualifying Capital versus RWA (annual growth)



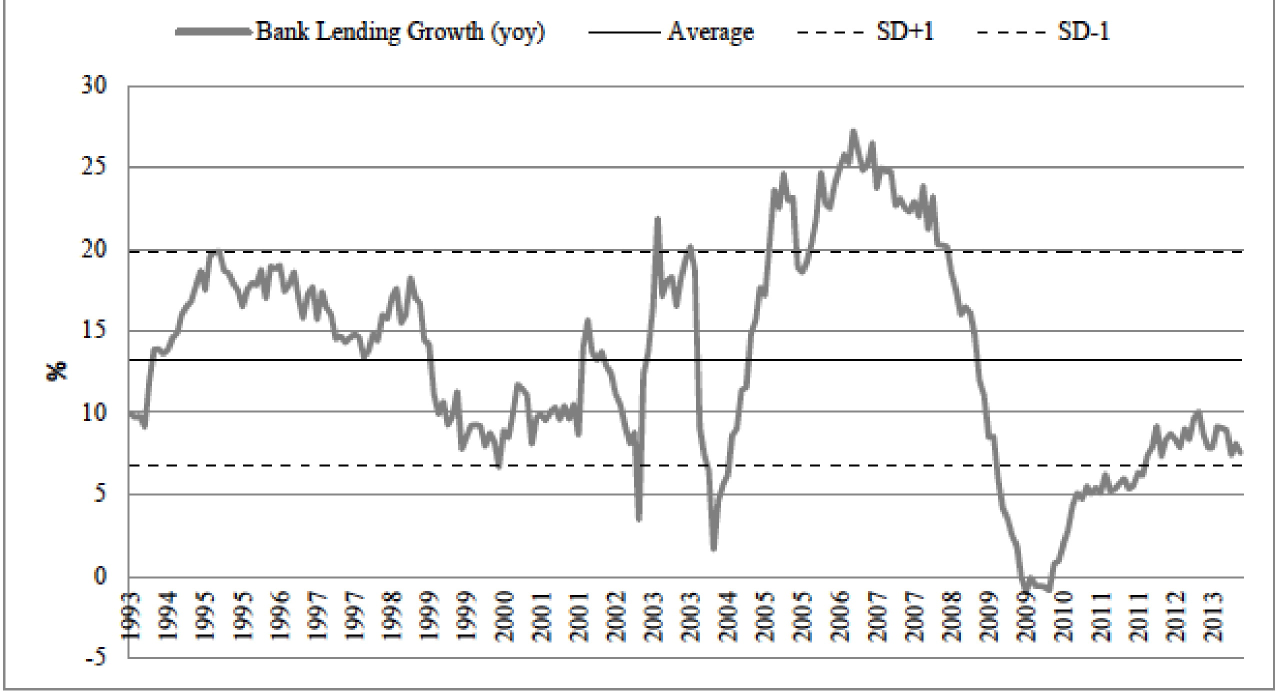
Source: SARB, Author's own calculations.
Total RWA includes off-balance sheet (OBS) items

Graph 4: On-Balance sheet RWA

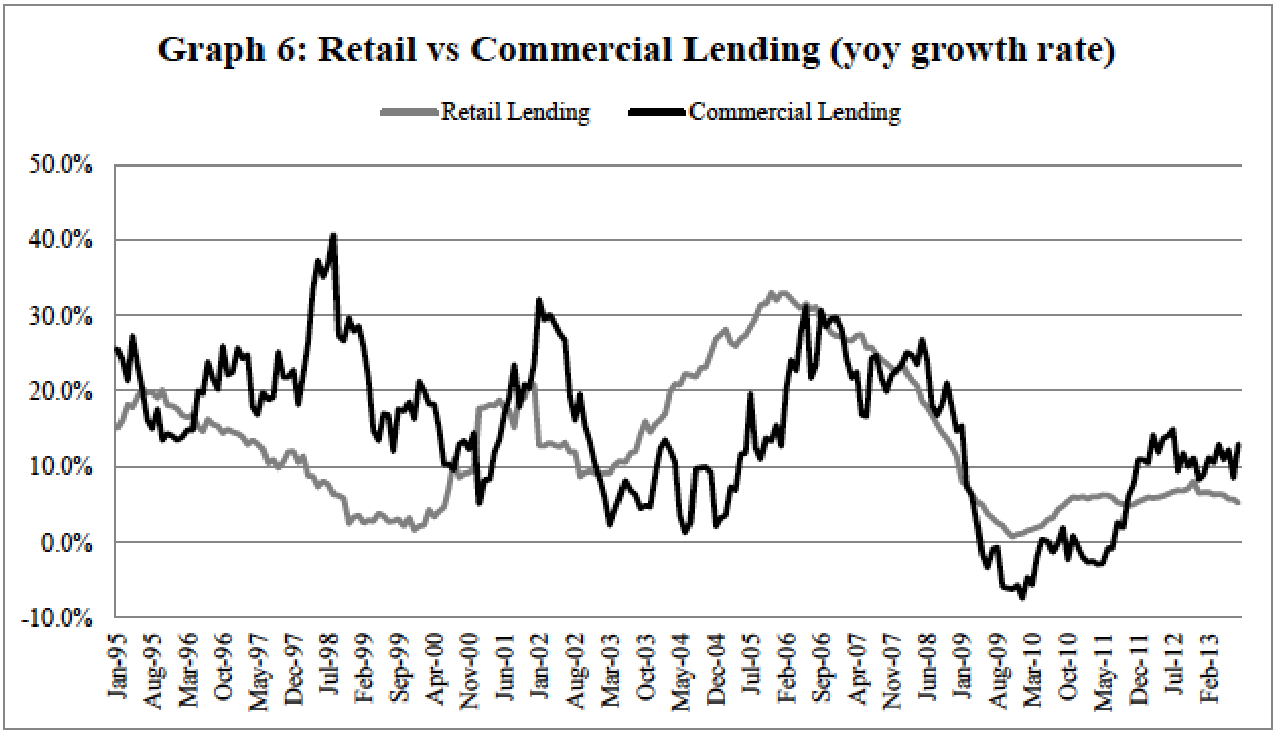


Source: SARB, Author's own calculations.

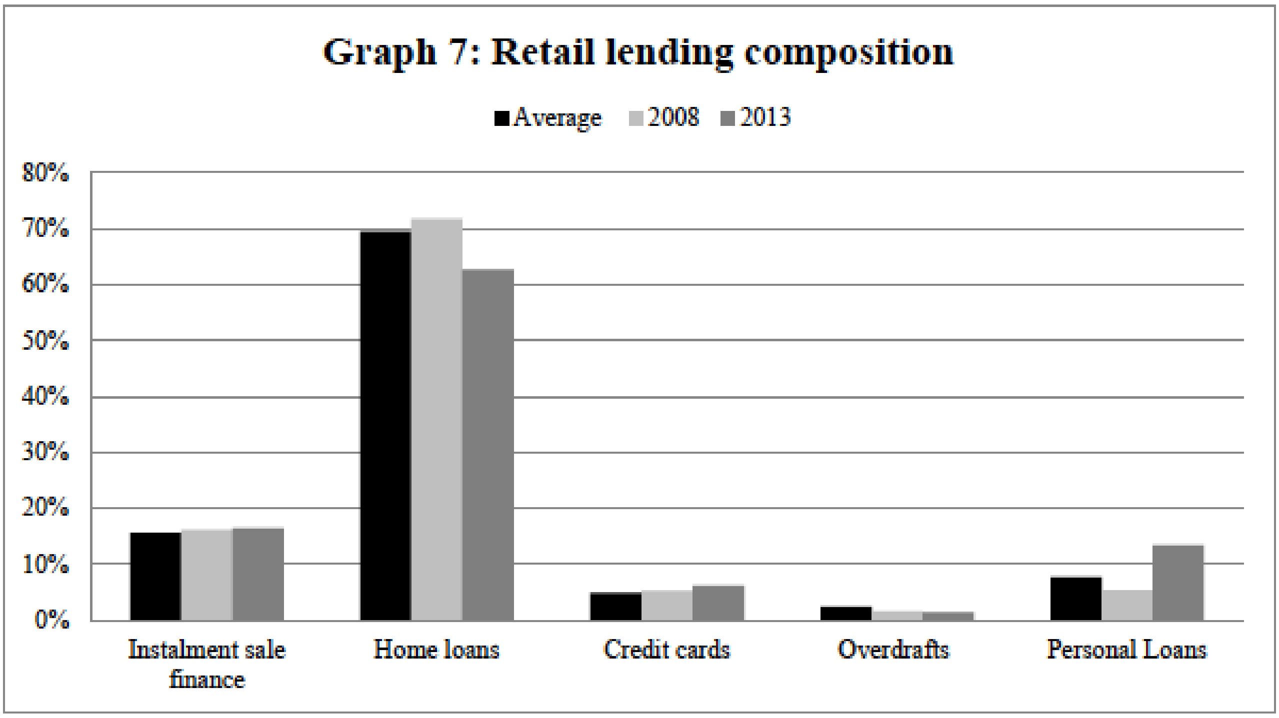
Graph 5: SA aggregate bank lending growth (yoy)



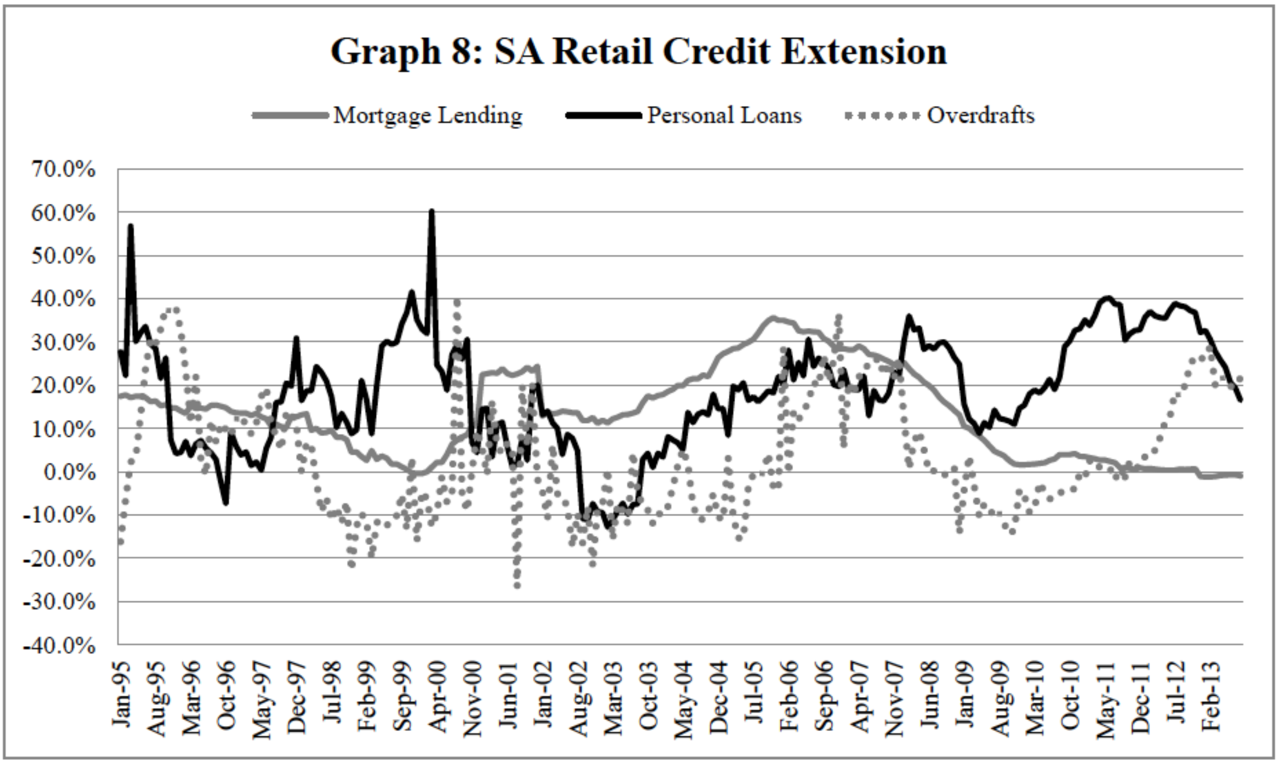
Source: SARB, Thompson Reuters Datastream, Author's own calculations.
Definitions: yoy = year-on-year growth, SD+1 = One standard deviation above the average, SD-1 = One standard deviation below the average.

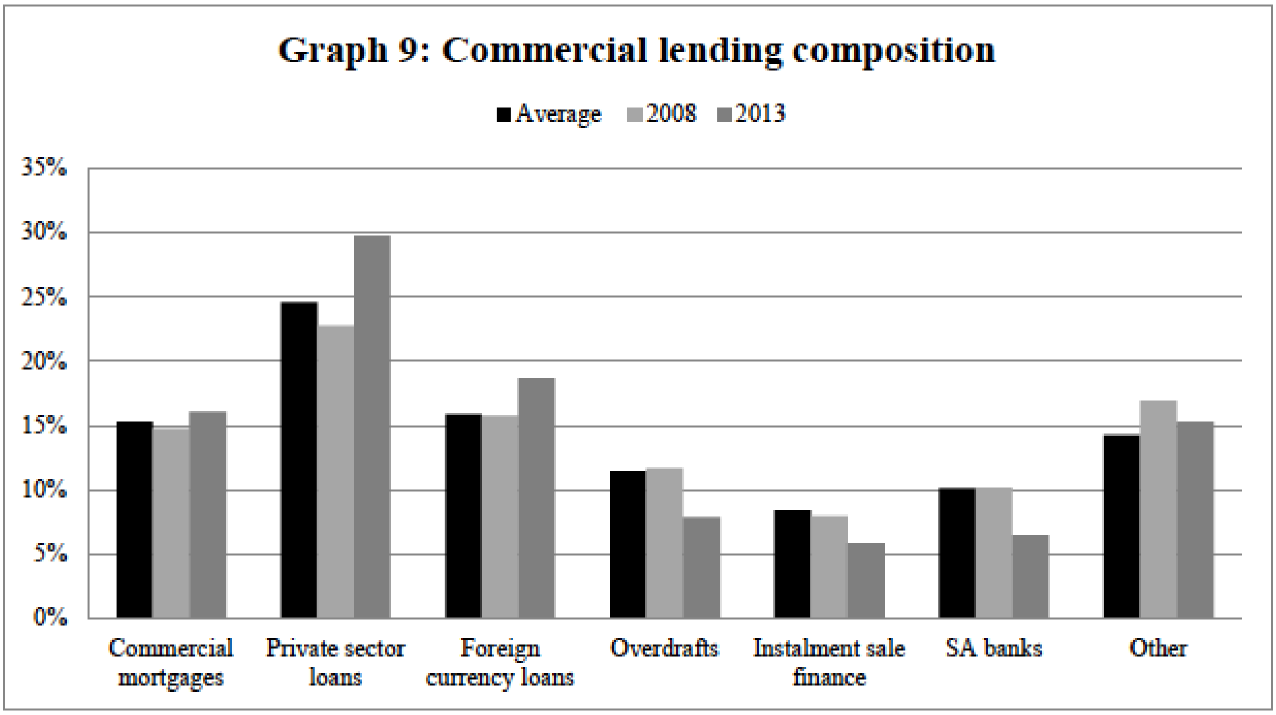


Source: SARB, Author's own calculations.



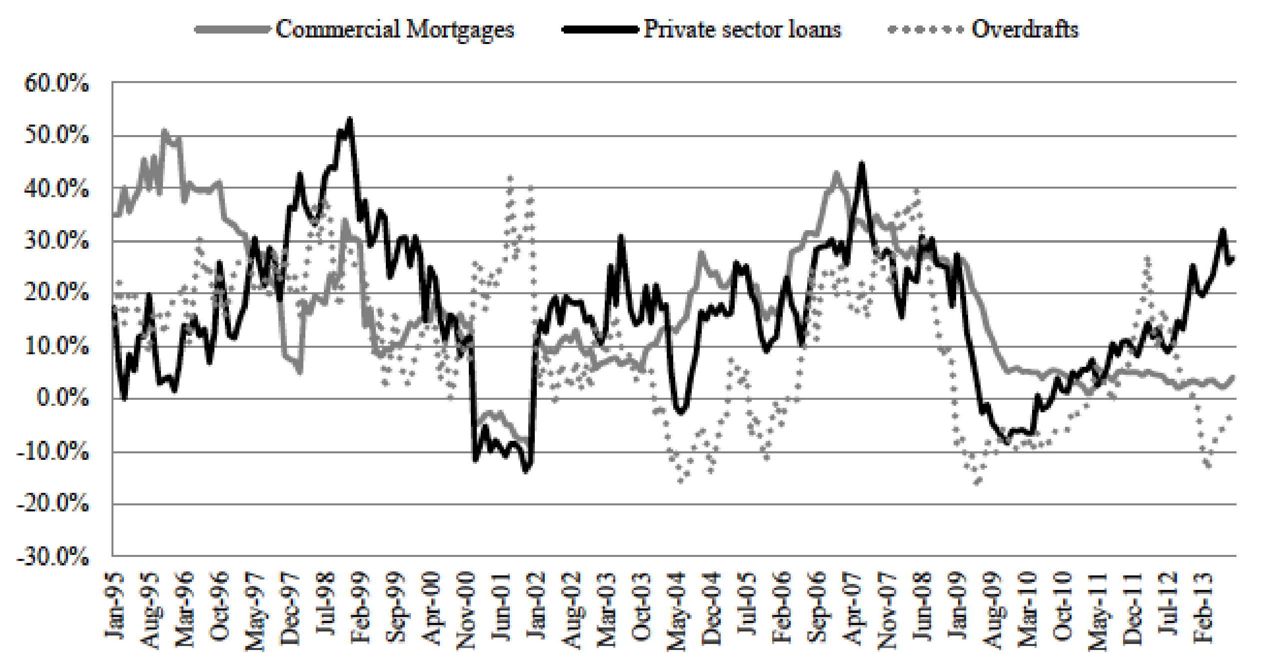
Source: SARB, Author's own calculations.





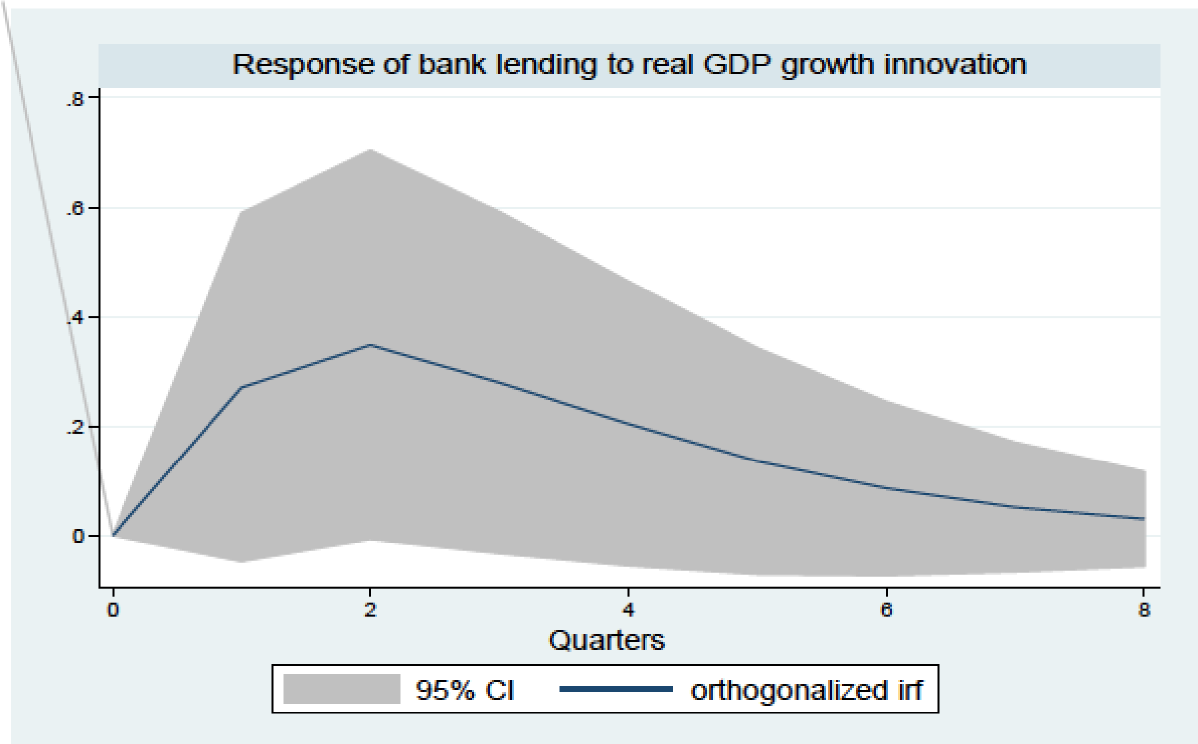
Source: SARB, Author's own calculations.

Graph 10: SA Commercial Credit Extension



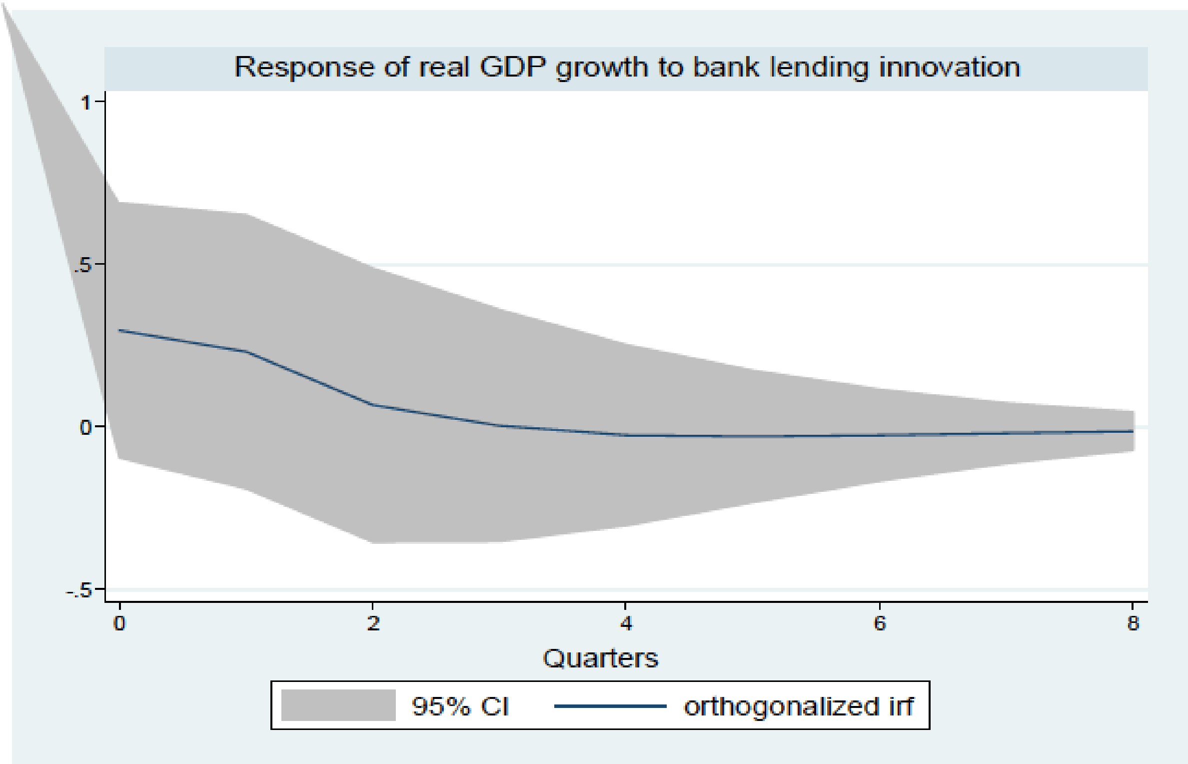
Source: SARB, Author's own calculations.

Graph 11: Response of banking lending to real GDP growth innovation



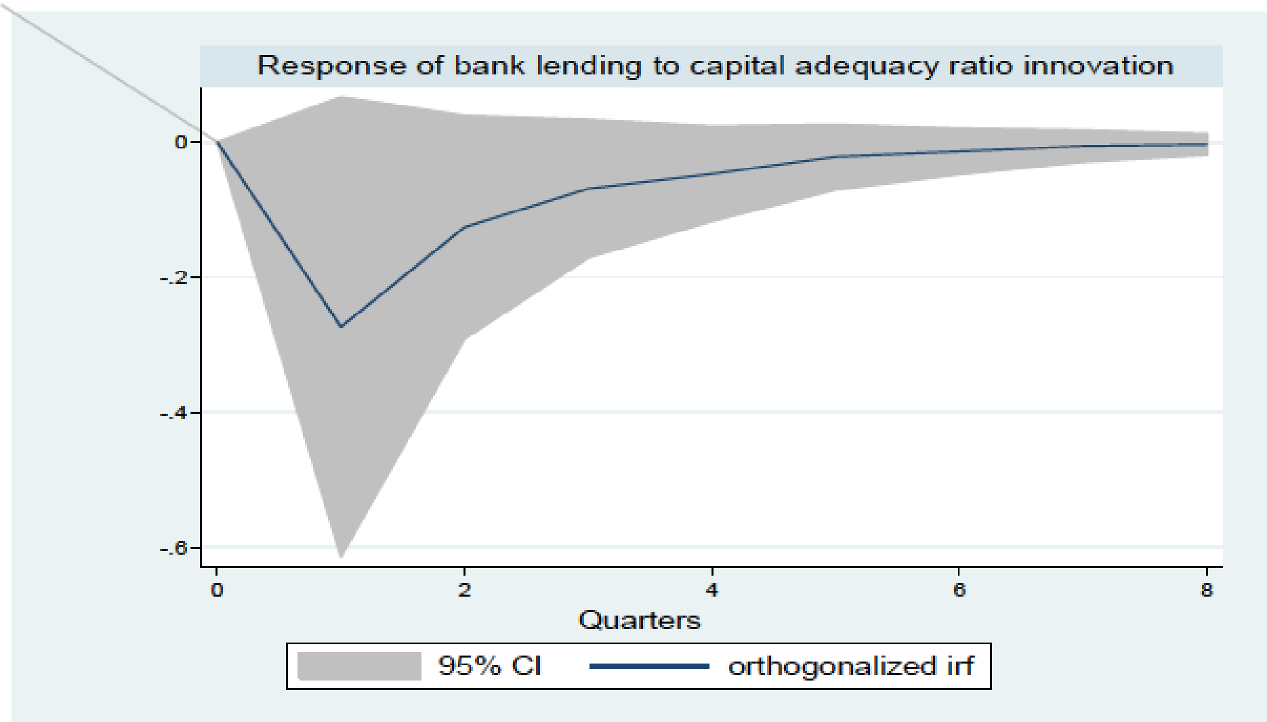
Source: SARB, Thompson Reuters Datastream, Author's own calculations.

Graph 12: Response of real GDP growth to bank lending innovation



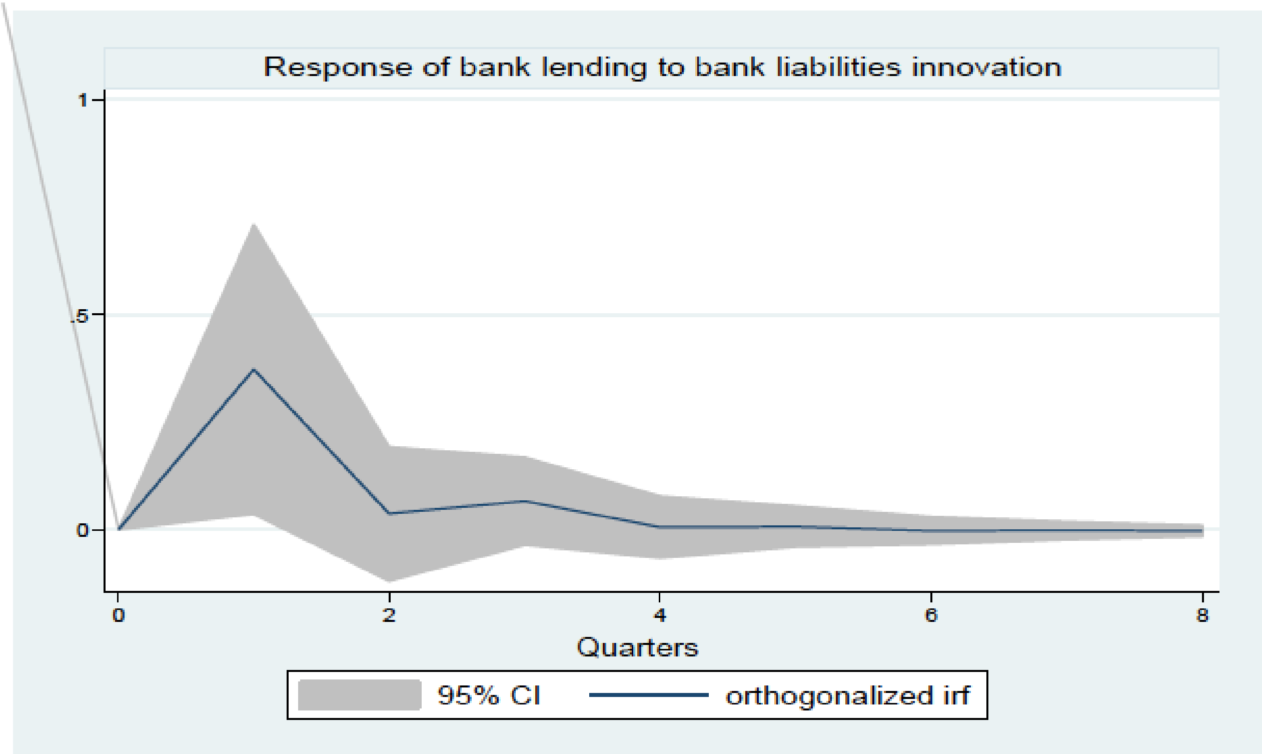
Source: SARB, Thompson Reuters Datastream, Author's own calculations.

Graph 13: Response of bank lending to capital adequacy ratio innovation



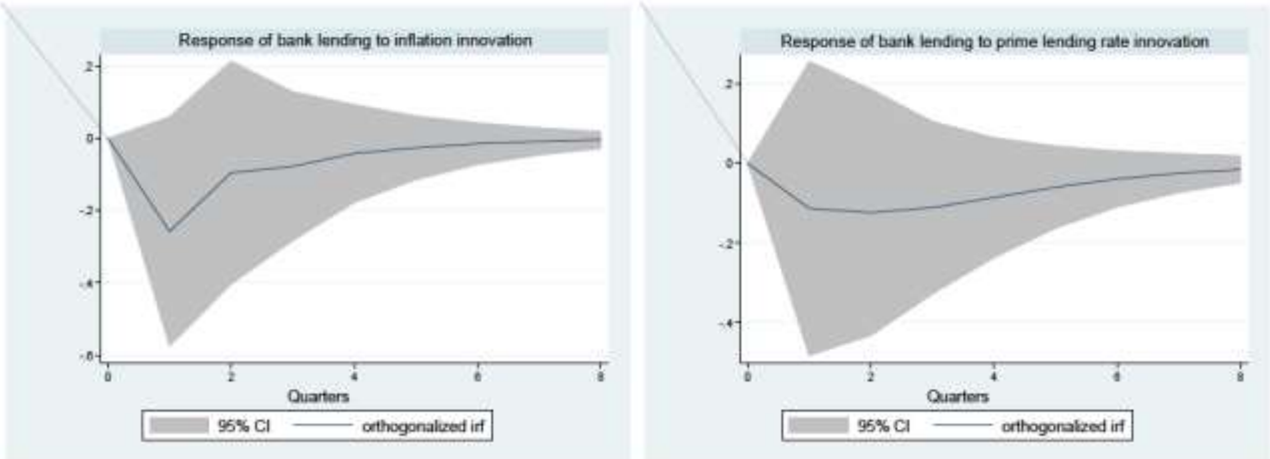
Source: SARB, Thompson Reuters Datastream, Author's own calculations.

Graph 14: Response of bank lending to bank liabilities innovation



Source: SARB, Thompson Reuters Datastream, Author's own calculations.

Graph 15: Response of bank lending to inflation and prime lending innovation



Source: SARB, Thompson Reuters Datastream, Author's own calculations.

Table 1: OLS regression estimations – Model 1

	Full period	1994-2007	2008-2013
Loan growth	0.1809236	-0.559629	0.2030339
	(0.1831344)	(0.2122695)	(0.3004556)
Capital Adequacy Ratio	-0.9027399	-0.7398156	-0.5238533
	(0.5674087)	(0.6443281)	(0.6474809)
Growth of bank liabilities to the public	0.3264536	0.3703205	-0.192854
	(0.1767728)*	(0.1870926)**	(0.2920279)
Quarterly Real GDP growth	0.2009551	0.0994002	-0.1188396
	(0.0882196)**	(0.1139446)	(0.1353782)
Inflation rate	-0.1368367	-0.20503	1.001061
	(0.1529456)	(0.1581699)	(0.3268275)***
Prime Interest rate	-0.0688773	-0.0307678	1.494866
	(0.2080876)	(0.2177342)	(0.6202055)**

Source: SARB, Thompson Reuters Datastream, Author's own calculations.
***, ** and * denotes significance at the 2%, 5% and 10% level.

MAF007 How effective was diversification during the 2008 global financial crisis?

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Abstract

Portfolio diversification refers to an investment strategy of investing in a variety of assets in an attempt to reduce or eliminate overall investment risk within that portfolio. This research paper extends prior research on the effect of portfolio concentration on diversification on the Johannesburg Stock Exchange.

This preliminary study, expanding on the work of Neu-Ner and Firer (1997), investigates the relationship between portfolio concentration and diversification prior to, during and after the 2008 global financial crisis. This research also applies alternative risk measures, and introduces the concept of Principal Component Analysis using the methodology of Meucci (2010) in order to generate a measure of the effectiveness of portfolio diversification during these three periods.

The research conducted shows that during the financial crisis, the level of downside risk in a portfolio was substantially higher than in the pre-crisis and post-crisis periods. It also finds that diversification was most effective prior to the crisis, while during the crisis, increased diversification was required to maintain consistent risk exposure levels within the market.

In the pre-crisis period the standard deviation of value and growth shares is almost identical, suggesting that the level of risk evident in the two types of shares was similar. Over the crisis and post-crisis periods value shares are associated with lower levels of risk than growth shares.

Keywords: 2008 global financial crisis, concentration, diversification, equally-weighted portfolio, financial crisis, portfolio risk, weighted portfolio, diversification, portfolio risk, principal component analysis, systematic risk

INTRODUCTION

The principle of diversification is an essential component to creating any well-constructed portfolio. This principle is that the unsystematic risk unique to each particular asset can be mitigated through diversification. In well-diversified portfolios unsystematic risk is eliminated and therefore a portfolio consisting of different types of assets that are differently correlated with one another will have insignificant unsystematic risk.

The main principles of the modern portfolio theory are based on analysing and evaluating sensible portfolio choices based on risk-return trade-offs and efficient diversification (Gartner, Rödder & Rudolph, 2009). Post-modern portfolio theory takes into account portfolio managers' specific goals and attempts to avoid negative risks (deviations from the mean return) and seek positive risks instead (Gartner, Rödder & Rudolph, 2009). Investors are often more concerned with negative deviations from the mean because they represent the financial risk associated with losses.

In addition to risk management, many investors choose to allocate their funds across various *styles* rather than among individual securities in the portfolio construction process. The Johannesburg Stock Exchange (JSE) defines a *style* as "an investment strategy that groups companies by their apparent different rates of return" (JSE, 2014). The popularity of style investing has led to the creation of style indices by the JSE. Two of the more popular investment styles used by investors are *value* and *growth*.

A concentrated portfolio represents increased risk to a portfolio manager because the large weighting of the shares within the portfolio limits the amount of attainable diversification (Kruger, 2008). There is no broadly accepted measure to determine how diversified a portfolio is, as well as where diversification arises in a given portfolio. One of the most widely used measure of concentration is the Herfindahl-Hirschman Index (Bikker & Haaf, 2000), calculated as the sum of the squares of the market share (expressed as a fraction) of each asset in the market. Meucci (2010) uses the technique of Principal Component Analysis (PCA) as a means to determine the commonalities, or principle components, that contribute to defining a portfolio as being diversified.

Concentration risk has been a major role player in the recent instability of many financial systems (Raubenheimer, 2010). However there is limited research on portfolio concentration and its effect on the level of attainable diversification in a South African context. Neu-Ner and Firer (1997) stated that as the size of a portfolio increases, the risk of the portfolio is reduced because of the elimination of unsystematic risk. They found that in order to achieve create a well-diversified portfolio on the Johannesburg Stock Exchange (JSE) it was necessary to hold at least 30 randomly selected shares.

The 2008 global financial crisis provides a unique period in our recent market history that is rich with research possibility. To date, no comprehensive studies exist that have attempted to explore the findings of earlier research into portfolio diversification and concentration on the JSE within this period of extreme volatility and uncertainty.

RESEARCH OBJECTIVE

The primary aim of this research paper is to better investigate the relationship between diversification and portfolio concentration in order to better understand how portfolio concentration affects portfolio managers. A minor aim of this paper is to extend Hawinkels *et al.* (2014). As a result, we follow Hawinkels *et al.* (2014) in constructing this research.

The paper will expand on the findings of Neu-Ner and Firer on the effects of portfolio diversification within the JSE context, by establishing the level of attainable diversification in a portfolio when taking into account only the negative deviations from the mean return. It will also explore alternative risk measures, as well as introduce the concept of concentration and its effect on portfolio diversification.

The focus will be specifically on the period of the 2008 global financial crisis, and the study will be divided into pre-crisis, crisis and post-crisis time periods. During each period the performance of the value and growth styles over these time periods will be analysed and compared.

The paper will employ the research methods of Meucci (2010) in conjunction with the Herfindahl-Hirschman Index as a means of quantifying diversity.

This paper is organised as follows: In Section 3, prior research relevant to the study as well as the theory behind concentration, its presence in a South African context and the measurement of concentration is reviewed. Section 4 breaks down the research methods used in this research paper. Section 5 presents the results that were determined. Finally, Section 6 concludes.

LITERATURE REVIEW

Concentration: definition and measures

According to Kruger (2007), single-share concentration occurs when the market capitalisation of an exchange is disproportionately attributable to the value of one share. When this single-share concentration is present, the combined weighting of the other shares on the exchange is overshadowed (Raubenheimer, 2010). The large weighting of shares within a portfolio, which characterises a concentrated portfolio, restricts the amount of unsystematic risk that can be diversified away. Concentration may therefore be defined as the degree to which a portfolio deviates from an equal weighting (Bradfield & Kgomari, 2004).

Concentration risk can be further broken down into name and sector concentration. The former refers to the level of risk resulting from the distribution of exposures to its borrowers, while the latter to the distribution of exposure to particular sectors. (Figini & Uberti, 2013).

Concentration is a concern in the banking sector, where it refers to the number of loans in a portfolio. Increasing the number of loans in a portfolio achieves minimum concentration (or maximum diversification), whereas diversifying the number of sectors represented in the portfolio achieves minimum sectoral concentration. (Figini & Uberti, 2013).

Sector concentration can be misleading because two companies in the same sector may be less correlated than two companies in different sectors. It is therefore considered more appropriate to focus on portfolio concentration instead of sector concentration.

There are several ways to measure concentration. The Herfindahl-Hirschman Index (HHI) is the most popular (Bikker & Haaf, 2000), and is calculated as the sum of the squares of the market share of each firm in the market. A high HHI index means a high degree of market concentration, approaching a maximum as the number of firms in the industry approaches one. Rhoades (1995) identified a limitation in the use of the HHI index as a concentration measure, since it does not take into account the effects of correlation between shares of the firms.

A common measure of benchmark concentration is the Effective Number of Shares, which is measured by determining the number of equally-weighted shares required to achieve a level of share-specific risk equal to that of the original portfolio (Kruger & Van Rensburg, 2008), with the degree of concentration increasing as fewer equally-weighted shares are required to replicate the risk in the portfolio.

The Figini and Uberti Index (as it shall be referred to here) was developed in response to the absence of a complete measure of credit concentration (Figini & Uberti, 2013). This index is measured between one and zero, and incorporates sub-indices measuring both the risks of single name positions and sectoral credit risk. It also takes into account share correlation, which is one of the deficiencies of the HHI Index.

Concentration in South Africa

There is a significant level of concentration present in the JSE, which results in many of the inefficiencies in the existing equity benchmarks (Kruger & Van Rensburg, 2008). The five largest shares account for 40% of the All Share Index (ALSI) (Raubenheimer, 2010), and 50 shares account for 90% of the index weight. Both the high degree of concentration and the correlation between JSE-listed shares limit the ability of investors to diversify risk (Neu-Ner & Firer, 1997; Bradfield & Kgomari, 2004).

The lack of liquidity in the JSE also means that portfolio managers have to favour higher-capitalisation shares, limiting their exposure to those at the lower end (Bradfield & Kgomari, 2004). This in turn results in a bias toward resource shares, since these form the bulk of large-cap shares on the JSE (Kruger & van Rensburg, 2008). Thus portfolio managers must accept greater sector concentration in order to protect their liquidity. (Bradfield & Kgomari, 2004).

The effect of concentration on portfolio risk

Markowitz (1952) identified that diversification was not always successful in reducing risk, due to the correlation of shares in the same industry. He noted that in order to reduce risk the “right kind” of diversification is necessary.

In a three-year study on the JSE, Bradfield and Kgomari (2004) identified the inverse relationship between portfolio risk and concentration. This same inverse relationship was observed by Kruger and Van Rensburg (2008) whilst investigating equity benchmarks in a South African context. These studies emphasize the significant impact of concentration on portfolio risk.

The effect of concentration on diversification

Bradfield (1993) sought to uncover the effect of portfolio concentration on the level of attainable diversification in a portfolio on the Johannesburg Stock Exchange. In examining how portfolio concentration affected the level of diversification attainable in a JSE portfolio, Bradfield (1993) observed that, in comparison to the New York Stock Exchange, a JSE portfolio requires approximately five times as many shares to be "completely" diversified, and that, consistent with the characteristics of an emerging market, South African shares were associated with higher levels of systematic risk when compared to those on the NYSE.

In investigating the benefits of diversification on the JSE, Neu-Ner and Firer (1997) observed that the risk of a one-share portfolio can be reduced by a quarter through the addition of a second share, and halved by adding five shares, continuing to a maximum reduction of 80.5%, for which more than 200 shares are required.

In their three-year study of concentration on the JSE, Bradfield and Kgomari (2004) found that the high correlations between South African shares limited the benefits of diversification. Their findings also indicate that the positive correlation between larger weighted assets increased the overall risk in a JSE portfolio.

Concentration and risk: previous approaches and empirical findings

In a three-year study using data closing price data of all JSE-listed shares from June 1993 to June 1996, Neu-Ner and Firer (1997) determined the point at which the addition of further shares to a JSE portfolio ceases to further reduce risk.

After removing debentures and convertible debentures together with all shares listed and delisted during this period, as well as, a research population of 532 shares was identified. Portfolios were constructed assuming equal investment in each share. N shares then were randomly selected with the mean return and standard deviation of the portfolio calculated. This was repeated 1 000 times and the average of the mean and standard deviation for each instance was then averaged across the 1 000 instances.

This study found that the full benefits of diversification require a portfolio of at least 30 randomly chosen shares. The study also found that as the number of shares in a portfolio increases the dispersion of risk in the portfolio reduces, making risk more predictable. Elton and Gruber (1977) illustrated that as the number of shares held in a portfolio approaches the total number of shares, the risk of a portfolio (standard deviation) approaches the risk of the equally weighed portfolio of that population. Based on this, Neu-Ner and Firer (1997) concluded that for randomly selected shares, the equally weighted portfolio of all shares in the population should be used as a benchmark to compare other, less diversified portfolios.

Bradfield and Kgomari (2004) studied the impact of market concentration on diversification on the JSE. They chose to test four portfolio construction scenarios with varying weighting characteristics (see Table 1 below). Portfolio risk was calculated using the variance and covariances between shares in the prior three-year period.

Table 1: Four scenarios under evaluation

Scenario	Stock weighting	Correlation between stocks
1	Equally weighted	Zero correlation assumed
2	Equally weighted	Correlated
3	Market capitalisation weighted	Correlated
4	General equity stocks	Correlated

Bradfield and Kgomari (2004) then tested the relationship between concentration and standard deviation (i.e. how much risk can be diversified away). The ALSI was used as a proxy for the market index (the ALSI consisted of 165 shares at the time the study was conducted in 2004). See Bradfield and Kgomari (2004) for the methodology followed in that study.

The main result of the Bradfield and Kgomari's study is that for equally weighted portfolios, average covariance is the major determinant in portfolio risk. Additionally, they found that the portfolio variance for the weighted stock portfolio is 16%, while the average covariance is 15.5%. This indicates that the average risk for the equally weighted portfolio tends to converge to the average covariance (see Elton, Gruber, Brown and Goetzmann (2003) for proof).

Additionally, they found that 45 stocks are required on the JSE before the marginal reduction in risk becomes of little further diversification advantage.

Kruger and van Rensburg (2008), followed Bradfield and Kgomari (2004) in isolating the risk associated with concentration. Using data from 30 June 1999 to 30 June 2002, they compared the risk of the benchmark portfolio to risk of an equally weighted portfolio in an attempt to isolate the portion of risk attributable to concentration.

Kruger and van Rensburg's paper determined that the effective number of shares required to achieve the same level of diversification as the ALSI is 16.52 shares. The remaining 149 shares on average provided little benefit to diversification. When comparing the benchmark and an equally weight portfolio, they estimated that market concentration added 2.33% in additional risk.

Previous work emphasises the importance of concentration and its consequences for risk management; however this research was mainly conducted prior to the 2007-2008 financial crisis. This research paper differs from previous research as it aims to determine the effect of portfolio concentration on the level of attainable diversification in a portfolio, across three distinct periods on the JSE. Several different risk measures have been used in prior research; however the level of attainable diversification within a portfolio, when taking into account only negative deviations from the mean returns, has not been explored. This is particularly useful to portfolio managers because this is the downside risk associated specifically with losses.

Style investing has become a popular method of investing for portfolio managers, where the two most common methods are value and growth investing. Prior research has not explored the performance of these two methods and therefore this research paper aims to compare the performances of the two methods across multiple periods.

RESEARCH METHODS

Data set and time periods

This research focuses on three broad time periods namely; Pre-crisis period, Crisis period and Post-crisis period. We define the Pre-Crisis period as being from January 2005 to September 2007, the Crisis period from October 2007 to March 2009, and the Post-crisis period from April 2009 to December 2013.

In order to ensure the consistency of the data set, only the shares that were present in the All Share Index (ALSI) across all three time periods were included in our analysis. This is consistent with the method followed by Neu-Ner and Firer (1997) who excluded shares that were listed and delisted during their sample period. This has the effect of reducing systematic risk present in our results. Taking the above into consideration, there were 113 shares that were present in the ALSI over all three periods, and these shares formed the base of the data set. Total returns index daily closing price data on these 113 shares from January 2005 to December 2013 were used to generate our results.

Mean returns and standard deviation

Unsystematic risk is unique to each asset and therefore has the ability to be eliminated through portfolio diversification (Neu-Ner & Firer, 1997). Diversification may be more or less effective during different economic time periods.

The aim of this study is therefore to determine the minimum number of stocks required in randomly selected portfolios to achieve a level of diversification using equally-weighted shares, during the pre-crisis, crisis and post-crisis periods. In order to determine this we use the share price data from each of the periods to determine the mean returns for each of the 113 shares present on the ALSI. For example, we randomly created a three-share portfolio and calculated its mean return and standard deviation; this was simulated 10 000 times and for each three stock portfolio created the mean return and standard deviation was recorded. This process as a whole was then repeated for a four-share portfolio, and then a five-share portfolio and so on until a portfolio of 113 randomly selected shares was created. For each randomly selected portfolio the mean return and standard deviation is determined, and then the average return per unit of risk is calculated.

Downside deviation

The risk or standard deviation associated with any investment can be separated into both upside and downside risk. Standard deviation, which is the most widely used measure of risk, has some limitations because it treats all deviations from the mean, both positive and negative, equally. Investors are more concerned with negative deviations from the mean as this represents the financial risk associated with losses. Downside deviation is a measure of the downside risk inherent in the investment. This raises an interesting question about how the downside deviation of a portfolio is affected by concentration.

In order to compute downside deviation, the approach above needs to be altered in order to calculate downside deviation values rather than standard deviation values. Standard deviation is the measure of dispersion in share returns from the mean, whereas downside deviation is a measure that focuses on the returns that fall below a minimum threshold (T). It is calculated using the formula below, where R is the return of the share and T is the mean return of the share over a period of time.

$$Downside\ deviation = \sqrt{\frac{\sum_{i=1}^{n}(R_i - T)^2}{n}}, where\ R_i < T$$

Value vs growth

In the portfolio construction process, many investors choose to allocate their funds across various styles rather than among individual securities. An additional aim of this paper is to analyse and compare the performance of the value and growth styles over the identified time periods.

Value shares are defined as shares which tend to show high book-to-market ratios in relation to other firms (Piotroski, J, 2001). In order for a share to be classified as a value share by the JSE, and hence be part of the Value Index, a share must have a high enough Value Ranking (VR) (JSE, 2014).

Shares are assigned a VR based on the following measures:

- Book-to-price ratio
- Dividend yield
- Sales to price ratio
- Cash flow-to-price ratio

Growth shares are defined as those shares which are expected to exceed the average return of the market. Such shares are characterised by steadily increasing revenue and earnings growth. As with the Value Index, growth stocks are assigned a Growth Ranking (GR). This ranking is based on the following growth measures:

- Three-year historic earnings per share growth
- Three-year historic sales growth
- Two-year forward earnings per share growth
- Two-year forward sales growth
- Return on equity x (1 - payout ratio)

Using the composition of the Value and Growth indices at the beginning of each period as a proxy, the 113 shares making up the data set were identified as either *value*, *growth* or *neither* (for the purpose of this particular analysis, the *neither* shares were then discarded). Due to the high frequency at which the JSE indices are re-evaluated, the simplifying assumption was made that if a stock was classified as either *value* or *growth* at the start of the period, it would remain as a value or growth share for the entire time period under consideration. The assumption is also that no new shares are added to the respective indices after the first day of each time period.

Having split the shares into value and growth, the process of portfolio construction as described in section 4.2 was repeated, this time building portfolios consisting exclusively of either value or growth shares.

Concentration

This paper applies the Figini and Uberti Index in a portfolio management context. The Figini and Uberti Index is defined as follows:

$$I = \frac{x'Mx}{b\max[r_i]}, \quad i = 1, \ldots\ldots, n,$$

Where:

n = number of shares

b = the normalization factor defined as $b = \frac{1}{min[r_i]}, \; i = 1, \ldots, n.$

$x' = [x_1, \ldots, x_n]$ The vector of the share of a single stock in the portfolio

r_i = Risk (standard deviation) associated with each share

$M = M_1 + C$ (correlation matrix); where

$$M_1 = \begin{bmatrix} b_{r_1} - 1 & 0 & \cdots & 0 \\ 0 & b_{r_2} - 1 & \ddots & \vdots \\ \vdots & \ddots & \ddots & 0 \\ 0 & \cdots & 0 & b_{r_n} - 1 \end{bmatrix}$$

$$C = \begin{bmatrix} 1 & \rho_{12} & \cdots & \rho_{1n} \\ \rho_{12} & 1 & \ddots & \vdots \\ \vdots & \ddots & \ddots & \rho_{n-1,n} \\ \rho_{1n} & \cdots & \rho_{n-1,n} & 1 \end{bmatrix}$$

Once established, the new portfolio concentration measure is applied to each time period under consideration, enabling us to evaluate the variation in concentration of the ALSI across the periods. By adding an extra step into the portfolio construction process described in section 4.2, we investigate the relationship between concentration and the number of shares in a portfolio. This was done by measuring the average concentration of a portfolio of n shares ($1 \leq n \leq 113$). We make the simplifying assumption that there is no thin trading on the JSE.

Based on the definition of the Figini and Uberti Index, we hypothesize that the concentration levels will increase in the crisis and post-crisis periods. This belief is based on the increased correlations between shares over a crisis period (all shares are affected by the crisis). This increase in correlation corresponds to an increase in concentration.

A Principal Components Approach

In portfolio management, a well-diversified portfolio is one that is not exposed to individual shocks. As for portfolio concentration, there is no broadly accepted measure of how diversified a portfolio is. Existing measures include the Herfindahl-Hirschman Index (HHI) (mentioned previously) and the percentage of risk explained by the systematic factors in a systematic-plus-idiosyncratic factor model. While these methods are useful to portfolio managers, neither measure highlights where diversification, or the lack thereof, arises in a given portfolio. With this is in mind, this paper uses the HHI index in conjunction with the methodology set out by Meucci in his 2010 paper “Managing Diversification” to generate a measure of how diversified a portfolio is. For the purpose of this paper, this measure will be called the M Measure.

The HHI Index is calculated by squaring the market share (expressed as weightings) of each firm competing in a market and then adding the resulting numbers together. The M Measure makes use of the following formula in establishing the weightings used in the HHI index calculation:

$$p_n = \frac{\widehat{w}_n^2 \, \lambda_n}{Var\{R_w\}}$$

Having established the weightings, p_n, of shares in the portfolio, the M measure applies these weightings to the HHI index (for a detailed description of the M methodology, see Appendix 1).

Results

Mean returns and standard deviation

To eliminate unsystematic risk evident in a portfolio, portfolio managers increase the number of shares in their portfolios. As expected, we found that as the number of shares in the randomly selected portfolios increased, risk was reduced. The returns of the portfolios tend to flatten out after a certain point. This can be seen on Figure 1 below when the number of shares in the portfolio reach about 55 shares. We infer that this is the point where the portfolio is well-diversified and portfolio managers will start to get the same level of return even if they continue to add shares to their portfolio beyond this point.

Comparison of the mean returns and standard deviations of the randomly selected portfolios across the three defined periods shows that for different market conditions, portfolio managers need to hold different amounts of shares for certain levels of standard deviation. The vertical line on Figure 1 below shows that for any given number of shares in a randomly selected portfolio, during the pre and post-crisis periods there is less risk than during the crisis period. This is because during the crisis period the market is extremely volatile and there is a lot of uncertainty around share price movements. The horizontal line on Figure 1 below indicates that for any given level of standard deviation, portfolio managers will need to hold fewer stocks in his portfolio during the pre and post-crisis periods. This indicates that it is much more difficult for portfolio managers to diversify their portfolios during the crisis period because there is lot more risk present during this period.

Figure 1 below provides important information because it shows that if a portfolio manager was only allowed to take on a certain level of risk (the horizontal line), in the pre and post-crisis periods the portfolio manager could hold about 5 stocks but in the crisis period he would have to diversify more and hold about 17 stocks.

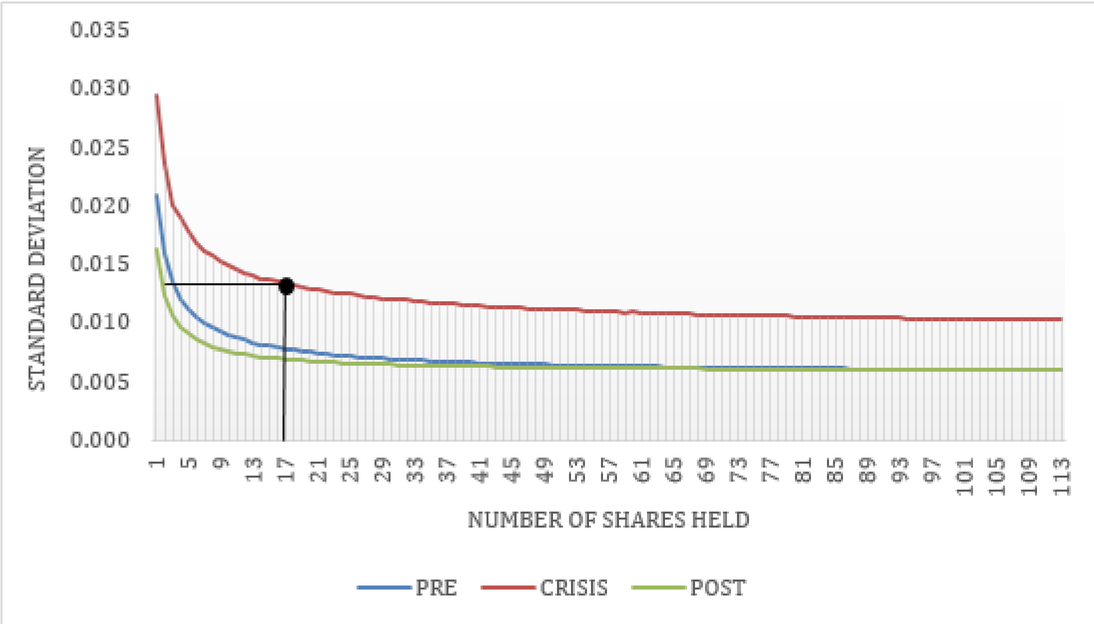

Figure 1: The relationship between standard deviation and the number of shares in a portfolio across the three periods.

Figure 2 below indicates that risk decreases as the number of shares in the randomly selected portfolios increases. After a certain point the returns flatten out.

Figure 3 below shows the average return per unit of risk and indicates that as the number of shares in a portfolio increases, the average return per unit of risk increases, but at a decreasing rate. This is because as more shares are added to the portfolio it reduces the standard deviation. However once again returns seem to flatten out at a certain point, and therefore return per unit of risk increases. It increases at a decreasing rate because less and less risk is diversified away each time another share is added to the portfolio.

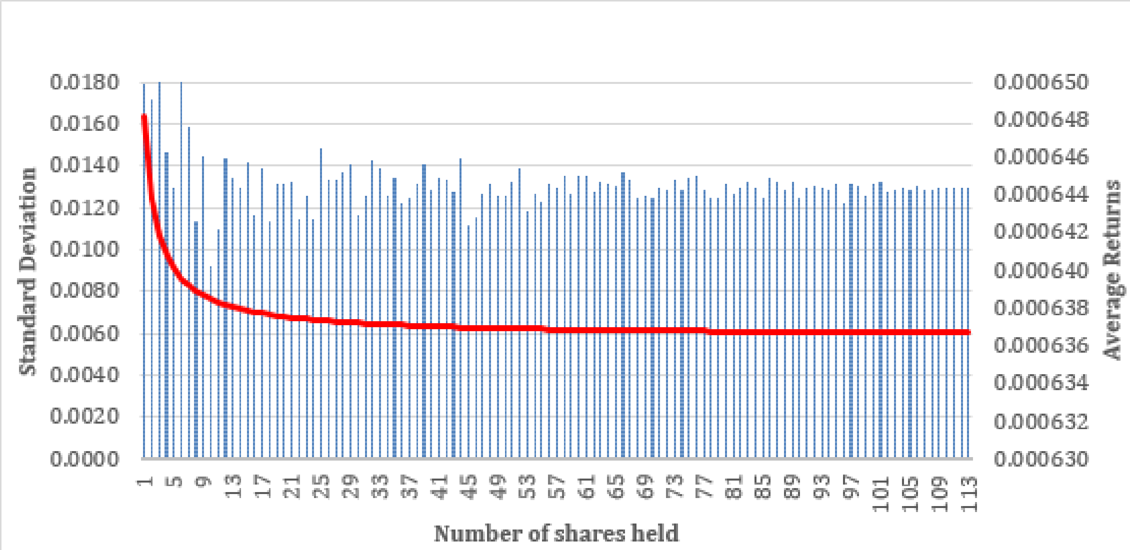

Figure 2: The relationship between post-crisis standard deviation and average return with the number of shares in a portfolio.

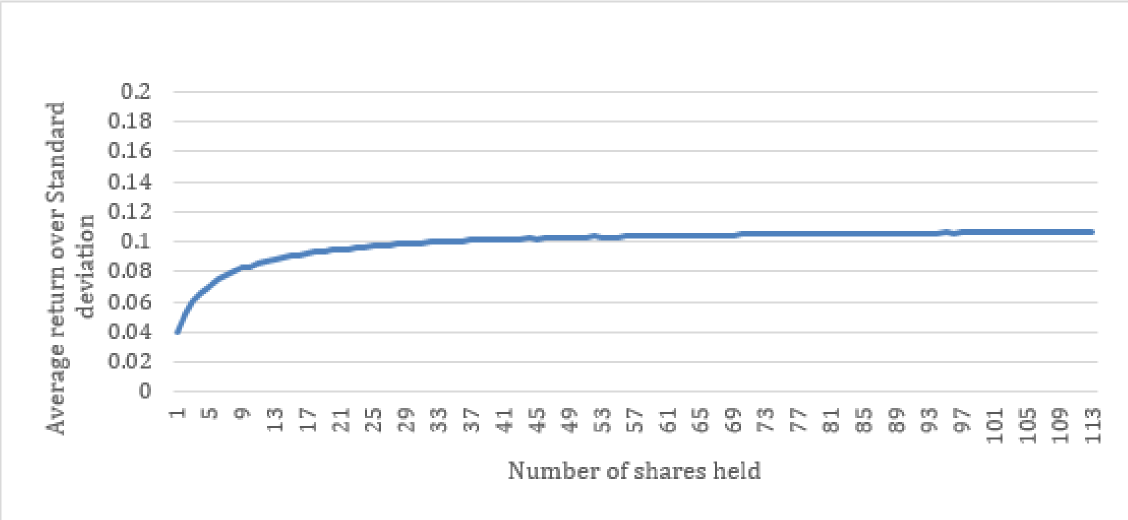

Figure 3: The relationship between post-crisis average return per unit of risk and the number of shares in a portfolio.

Downside Deviation

According to the market conditions faced by investors during the pre-crisis period, which was characterized by a boom in the economy and inflated asset prices (Claessens & Ayhan Kose, 2013), the fact that there is more downside deviation within a portfolio during the pre-crisis period when compared to the post-crisis period is in line with the risk-return tradeoff inherent in all investments. Risk-return theory states that in order to make higher returns, more risk needs to be taken on (Markowitz, 1952). This relationship is explained in the graph below, which demonstrates that for the same number of shares, during the pre-crisis period there is more downside deviation present in the portfolio when compared to the post-crisis period.

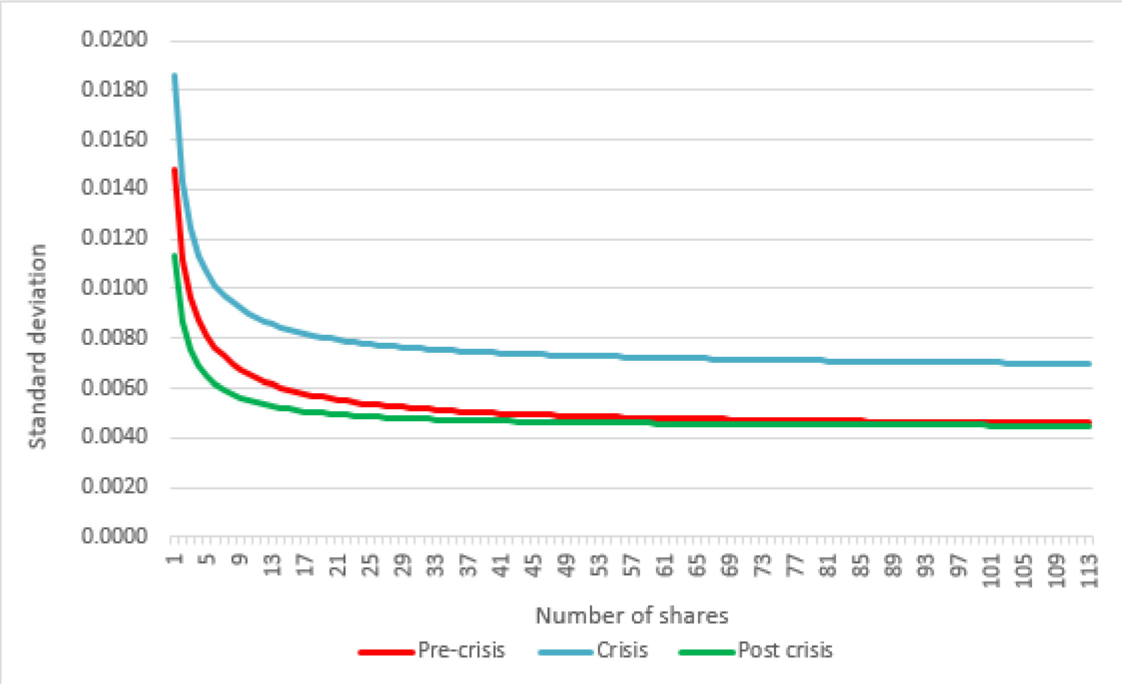

Figure 4: The relationship between downside deviation and number of shares in a portfolio across the three periods.

During the crisis period, market conditions are in recession and asset prices are falling. Most, if not all, assets experienced downward trends and therefore made negative returns. This is illustrated in Figure 4 where there is a higher level of risk across all investments.

The post-crisis period is characterized by a recovering economy and financial markets are on an upward growth pattern. Asset prices are starting to experience small upward trends and positive growth once again. As can be seen from the graph above, during the post-crisis period the benefits of diversification in terms of reducing downside deviation are maximized, and the risk inherent in all portfolios is much lower than in the pre-crisis and crisis periods.

For the pre-crisis period, if a portfolio of one randomly selected share is held, the amount of downside deviation in the portfolio is around 0.01477. If a portfolio of 113 shares is held, the level of downside deviation in the portfolio is approximately 0.00459. If we compare this to a portfolio comprising of one randomly selected share, adding an additional 112 shares to the portfolio reduces downside deviation by 68.88%.

During the crisis period there is more volatility present in the market and therefore less risk can be eliminated through diversification. During the crisis period, a one share portfolio has a downside deviation of 0.01863 which is significantly higher than the pre-crisis and post-crisis periods. This is consistent with retracting financial markets at the time. If a portfolio of 113 shares was held then downside deviation would be roughly 0.00683. This shows that the addition of 112 shares to the portfolio has the effect of reducing downside deviation by 62.52%

The benefits of diversification are exaggerated during the post-crisis period, because more risk can be diversified away. A randomly selected share, on average, during the post-crisis period has a downside deviation of 0.0113. By holding a portfolio of 113 randomly selected shares, downside deviation can be reduced to 0.00449. The additional 112 shares therefore reduce downside deviation by 60.19%.

Value vs growth portfolios: pre-crisis period

Figure 5 compares the relationship between the standard deviation of value shares and the number of shares to the relationship between the standard deviation of growth shares and the number of shares. As of 3 January 2005 (beginning of the pre-crisis period), there were 80 shares on the ALSI classified as *value* and 52 shares classified as *growth*. (Note that it is possible for a share to be included in both categories). As shown below, the standard deviations of value and growth are almost identical throughout the pre-crisis period indicating that the risk inherent in choosing value and growth shares was very similar. This could be a result of some shares being defined as both value and growth.

As illustrated below, standard deviation decreases as the number of shares increases which is consistent with portfolio theory and results discussed above. The risk appears to level out after using 31 shares in a portfolio. The corresponding standard deviation associated with this number of shares is 0.0077.

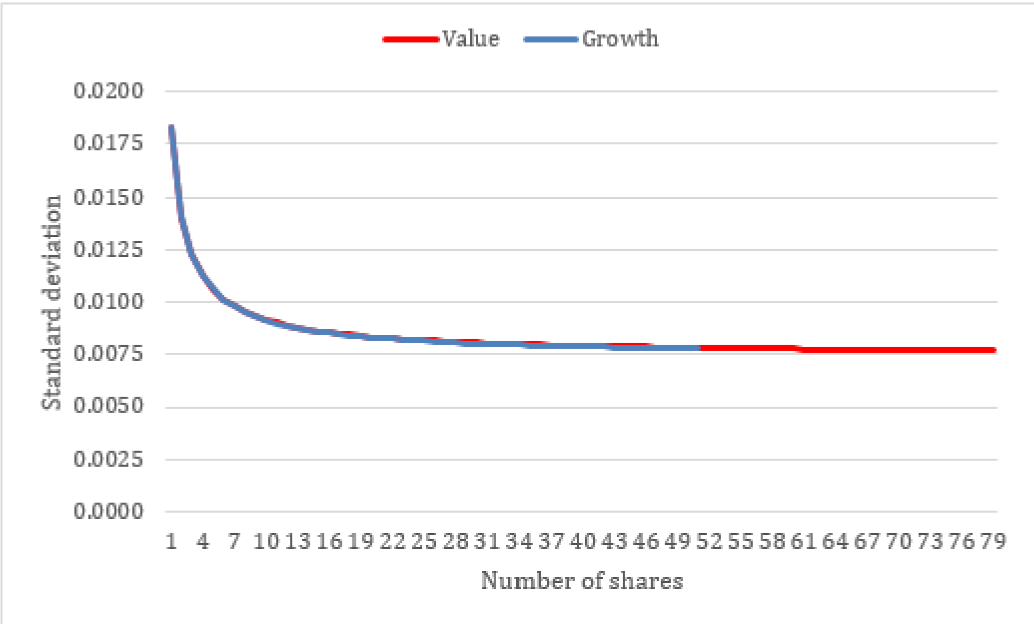

Figure 5: A comparison of pre-crisis value and growth shares.

Value vs growth portfolios: crisis period

Over the crisis period, 86 shares on the ALSI were classified by the JSE as *value* shares and 43 as *growth*. Figure 6 illustrates the performance of value and growth shares from a risk management perspective. Adding one more share to a portfolio of value shares reduces the risk of that portfolio by a greater amount than if the portfolio were constructed with growth shares. This is evident from the steeper slope of the value curve. Despite value shares being more effective in diversifying away risk in portfolios consisting of a small number of shares, the two graphs appear to converge as the number of shares increases. The risk associated with value and growth seem to level out at 31 shares, which is in line with the pre-crisis analysis. The level at which standard deviation levels out is, however significantly higher with a portfolio of 31 shares being associated with a standard deviation of 0.0125. This finding is consistent with the conditions inherent in a crisis period (more risk).

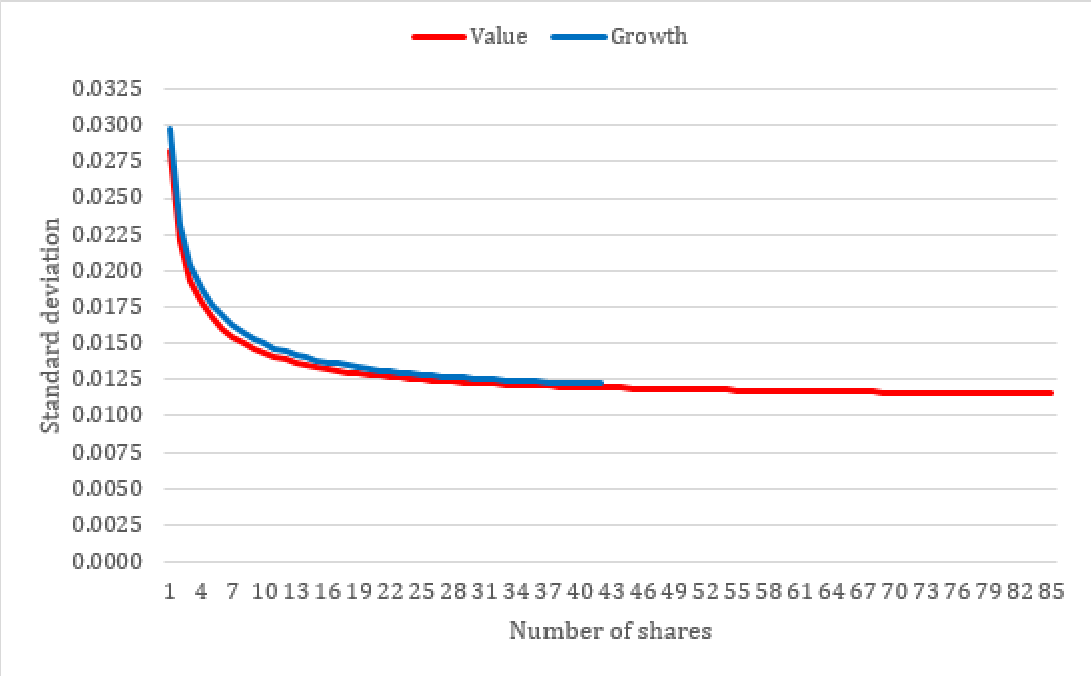

Figure 6: A comparison of crisis value and growth shares.

Value vs growth portfolios: post-crisis period

Using the JSE Value and Growth indices as a proxy, the ALSI consisted of 81 *value* shares and 63 *growth* shares at the start of our post-crisis period. Unlike the previous periods, the post-crisis period sees the persistent separation of the value and growth graphs, illustrated in Figure 7 below. As with over the crisis period, the marginal benefit of an additional share being held in a portfolio is greater for value shares than for growth shares. This benefit appears to exist across all number of shares, not just for portfolios consisting of a small number of shares, which was the case over the crisis period. Consistent with both other periods, standard deviation appears to level out for both value and growth at 31 shares. This number of shares is associated with an average standard deviation of 0.007 and 0.00725 for value and growth respectively.

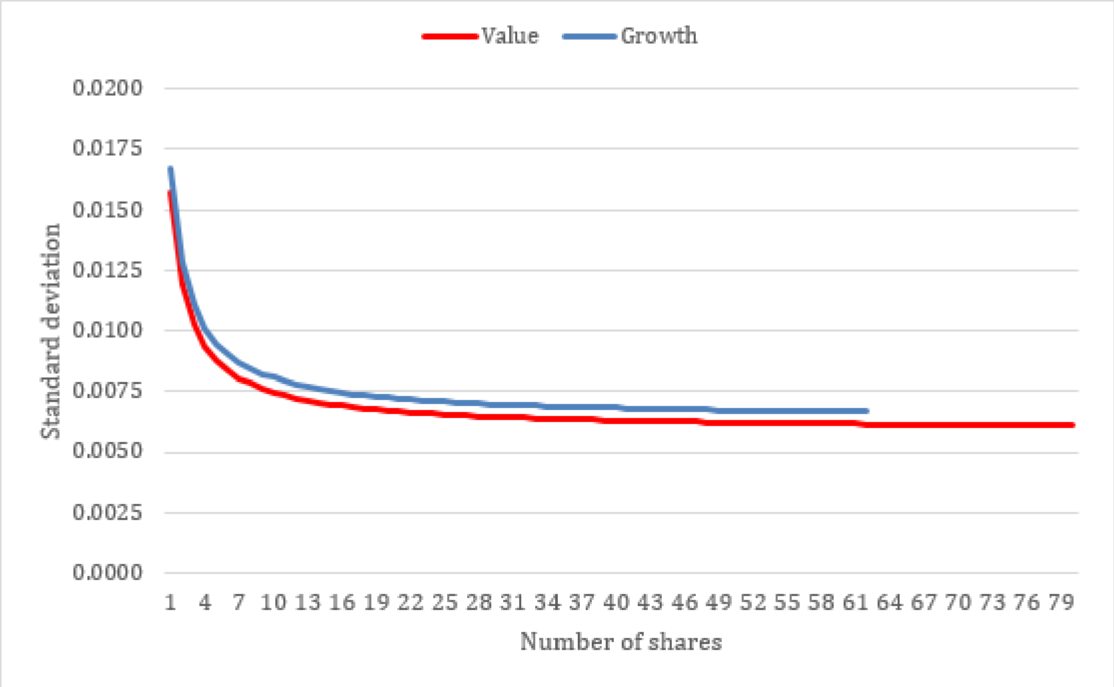

Figure 7: A comparison of post-crisis value and growth shares.

Concentration

Figure 8 graphs the relationship between the number of shares in a portfolio and its concentration across the time periods under consideration. Concentration in this instance is measured using the Figini and Uberti Index discussed in Section 4.5. All three graphs exhibit the general trend that as the number of shares increase, concentration decreases. This is consistent with previous literature as well as portfolio theory discussed earlier.

As illustrated by Figure 8 below, concentration remains relatively consistent across all three periods. Concentration appears to level out when holding a portfolio of 20 shares. After this point, holding an extra share does not have a significant impact on the level of concentration present in the portfolio. This holds true across all three time periods under consideration. The post-crisis period appears to be the one in which concentration is the highest across all numbers of shares.

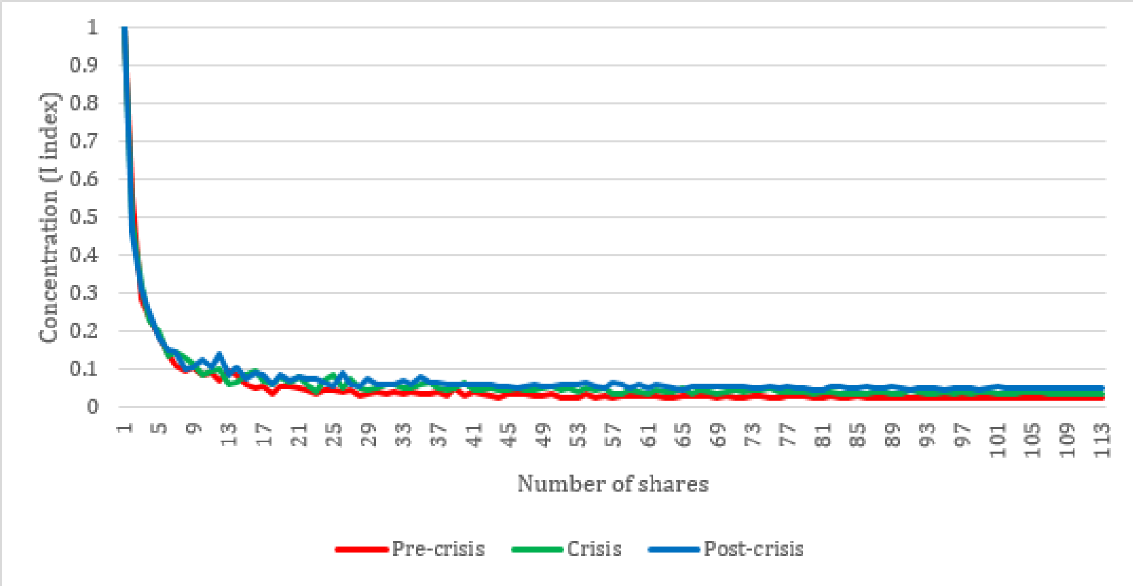

Figure 8: The relationship between concentration and the number of shares in a portfolio.

M Measure

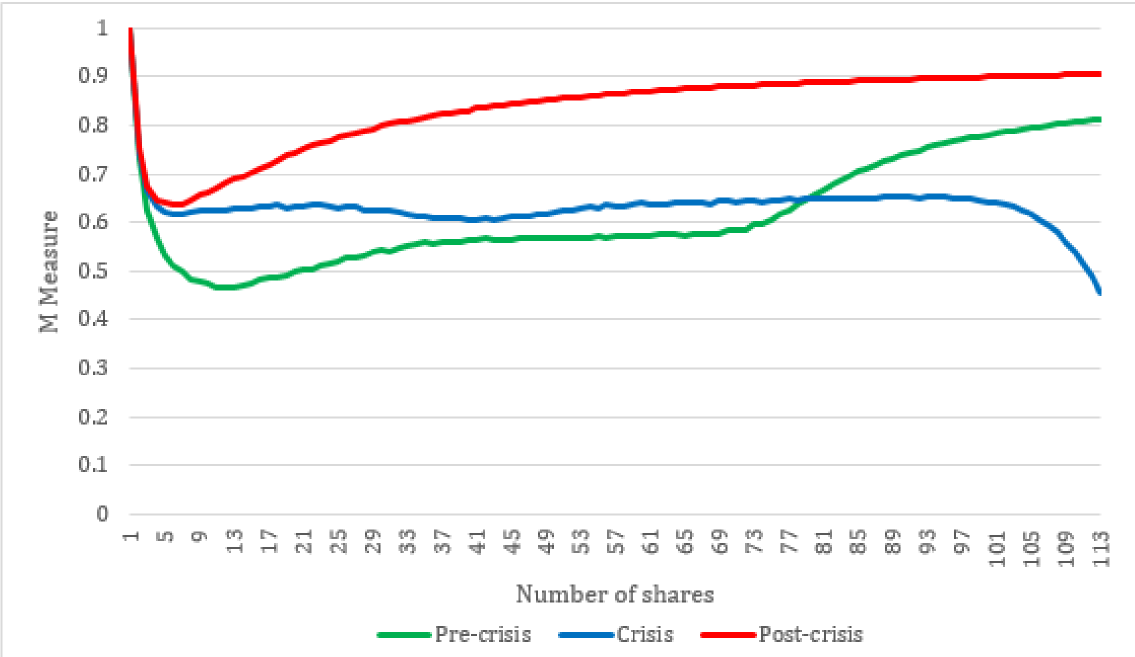

Figure 9: The M Measure across multiple time periods.

The M Measure considers the degree of portfolio diversification. Figure 9 indicates that the pre-crisis and post-crisis periods have similar characteristics, while the crisis period is clearly significantly different. In the pre-crisis and post-crisis periods the percentage of risk explained by the systematic factors (shares) increases as more factors are added to a portfolio. This is reflected by the increase in the M Measure as we move along the x-axis. In the crisis period the M Measure remains relatively flat as more factors are added, indicating that a lower percentage of risk is explained and therefore that portfolios in the crisis period are less diversified than in the pre-crisis and post-crisis periods. This corresponds to results shown in

Section 5.1, indicating that it is more difficult to diversify a portfolio during the crisis period, because less risk can be explained and therefore diversified away.

CONCLUSION

Market concentration is present, to some degree, in most of the major stock markets around the world, and impacts the way in which portfolio managers construct their portfolios as well as restrain their investment decisions. Concentration risk has been a relatively hot topic of discussion due to the recent credit crisis, specifically with regards to credit portfolios (Figini & Uberti, 2013). Portfolio diversification works to partly alleviate this exposure while at the same time eliminating unsystematic risk. Due to the risk reduction benefits associated with diversification, it is important for portfolio managers to be aware of how many shares are required to be fully diversified and additionally, which strategies are available that will maximize risk reduction in times of distress.

Having determined the mean returns and standard deviations of randomly selected portfolios over the three periods, we can conclude that during the pre- and post-crisis periods there is less risk and it is therefore easier for a portfolio manager to diversify a portfolio.

In contrast, increased volatility of the market and uncertainty of share prices are characteristics of the crisis period that make it necessary for a portfolio manager to hold more shares in a portfolio to achieve the same level of risk as in the pre- and post-crisis periods. This finding should be used by portfolio managers in future crisis periods to manipulate the number of shares they hold in their portfolios in order to maintain a constant level of diversification.

As one would expect, during a financial crisis the level of downside risk in a portfolio is substantially higher than in the pre-crisis and post-crisis periods. The period associated with the lowest levels of downside risk is the post-crisis period. An interesting finding is that the greatest benefits from diversification could have been achieved in the pre-crisis period.

In the pre-crisis period the standard deviation of value and growth shares is almost identical, suggesting that the level of risk evident in the two types of shares was similar. Over the crisis and post-crisis periods value shares are associated with lower levels of risk than growth shares. This can once again be used by portfolio managers seeking to diversify risk in a crisis.

There is scope to extend this work on concentration and diversification to other markets, and to explore the potential benefits of international diversification.

REFERENCES

Bikker, J. and Haaf, K. 2002. Measures of competition and concentration in the banking industry: a review of the literature. *Economic and Financial Modelling*. 11 (2), p67-78.

Bradfield, D.J. 1993. Beta estimation on the JSE: A simulation study. *South African Journal of Business Management*, 24, p118-123.

Bradfield, D. and Kgomari, W. 2004. Concentration –should we be mindful of it? Research Report, Cape Town, Cadiz Quantitative Research.
Claessens, S. and Ayhan Kose, M. 2013. Financial Crises: Explanations, types and implications. *Financial Crises: Causes, consequences, and policy responses*. IMF WP/13/28.
Elton, J. and Gruber, M. 1977. Risk reduction and portfolio size: an analytical solution. *The Journal of Business*, 50, October: p415-437
Elton, E. Gruber, M. Brown, S. and Goetzmann, W. 2003. Modern Portfolio Theory and Investment Analysis, John Wiley and Sons Inc., Sixth Edition.
Figini, S and Uberti, P. 2013. Concentration measures in risk management. *Journal of the Operational Research Society*. 64 (3), p718-723.
Hawinkels, J., Morley-Jepson, S., Wood, L. & Rajaratnam, K. (2014). What is the role of post-crisis market concentration on portfolio diversification in a South African context? The 2014 Western Cape Regional Conference of the South African Accounting Association, Bellville, Western Cape, South Africa.
Johannesburg Stock Exchange (JSE). 2014. A solution for identifying and measuring value and growth markets. *FTSE-JSE Style Indices Brochure*. 1 (1), p2-5.
Kruger, R and van Rensburg, P. 2008. Evaluating and constructing equity benchmarks in the South African portfolio management context. *Investment Analysts Journal*. 67 (1), p5-18.
Markowitz, H.M. 1952. Portfolio Selection. *The Journal of Finance* **7** (1), p77–91.
Neu-Ner, M and Firer, C. 1997. The benefits of diversification on the JSE. *Investment Analysts Journal*. 46 (1), p47-59.
Piotroski, J. 2001. Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers. *Journal of Accounting Research*. 38 (1), p1-24.
Raubenheimer, H. 2010. Size, Liquidity and Concentration in the South African Equity Market and its effect on the Business of Investment Management.
Rhoades, S. 1995. Market Share Inequality, the HHI, and other Measures of Firm Composition of a Market. *Review of Industrial Organization*. (10), p657-674.

Appendix 1: M Measure methodology

In uncorrelated markets, the individual shares within a portfolio constitute additive sources of risk. This relationship is shown below:

$$Var\{R_w\} = \sum_{n=1}^{N} Var\{w_n R_n\}$$

Where:

w_n= the weighting of share n in the portfolio

R_n= the return of share n

This relationship, however, does not hold in correlated markets. Although correlated, it is possible to determine the sources of risk that are uncorrelated and hence additive.

A principal component decomposition of the returns correlation matrix, $\sum$, uncovers the uncorrelated sources of risk. This differs from the methodology followed by Meucci (2010) where the returns covariance matrix was used.

$$E' \sum E \equiv \Lambda$$

In the above expression, Λ is the diagonal matrix that contains the eigenvectors of $\sum$ and the columns of matrix E, are the respective eigenvectors. The eigenvectors in matrix E define a set of N uncorrelated portfolios whose returns are decreasingly responsible for randomness within the market. The eigenvalues contained in matrix φ correspond to the variances of the uncorrelated portfolios. Note that the above decomposition holds for any market with a well-defined covariance.

In the portfolio construction process, portfolios can either be made up of the original securities with weights w, or as a combination of the uncorrelated principal portfolios i.e. with weights $\widetilde{w} = E^{-1}w$.

The diversification distribution is generated through the following equation:

$$p_n = \frac{\widehat{w}_n^2 \, \lambda_n}{Var\{R_w\}}$$

In the equation above, p_n can be thought of as the R^2 from a regression analysis of the total portfolio returns on the n^{th} principal portfolio. R^2 represents the portion of variance explained by the variables in a model.

MAF008 Individual human needs satisfied by long-term liabilities

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Abstract

South African households are increasingly under pressure to meet their monthly obligations mainly due to over-indebtedness. This paper investigates if this position is not due to individuals using long-term liabilities to satisfy short-term needs. In determining if liabilities are used correctly the paper firstly classifies South African liability products available to individuals in terms of the credit product classification framework. Using Alderfer's ERG theory the human needs that should be addressed when using different types of liabilities are evaluated. Using empirical data obtained from individuals using long-term liability products, it is determined which needs are satisfied by these products. The analysis found that although the majority of South Africans are using long-term debt correctly, there are a considerable number of individuals that use these long-term debts to satisfy short-term needs.

Key words: Alderfer's ERG theory, credit product classification framework, long-term liability usage, liability use process

INTRODUCTION

According to the South African Reserve Bank (2014) household debt increased consistently during the last decade to R1 696 billion in December 2014. Considering the growth in the number of credit active consumers coupled with an increase in the gross debtors' book of consumer credit, it is clear that individuals are increasingly making use of credit products to satisfy their financial needs (National Credit Regulator, 2014a; 2014b). Several commentators have expressed concern that individuals are making use of incorrect credit, for example making use of long-term debt to finance short-term needs (National Credit Regulator, 2014a).

To understand the implication of this the principles governing household financial management needs to be analysed. Household financial management is based on the principles contained in the basic accounting equation (Goodall, Rossini, Botha & Geach, 2014; Swart, 2012; Momentum & Unisa, 2014; South African Reserve Bank, 2014). The accounting equation was developed in the seminal work of Luca Pacioli (a Franciscan friar) in 1494, and can be used to explain the financial relationship between equity, assets and liabilities.

The accounting equation can be expressed as follows:

$$E = A - L$$

where

E	=	equity (retained or unused income)
A	=	assets
L	=	liabilities

When acquiring assets a person can use his saved income (E) or make use of liabilities (L). The incorrect use of long and short-term liabilities can result in a person becoming over-indebted, that is if the value of his or her liabilities exceeds the sum of his or her assets and equity ($L > A + E$). This situation is exacerbated when a person's expenses for a period (consisting of living expenses and debt repayments) exceed his or her income for the period which then results in the person having to take up additional liabilities to pay for his or her expenses. Household financial management theory suggests that long-term liabilities should only be used to acquire long-term assets (used to satisfy long-term needs) (Goodall et al., 2014).

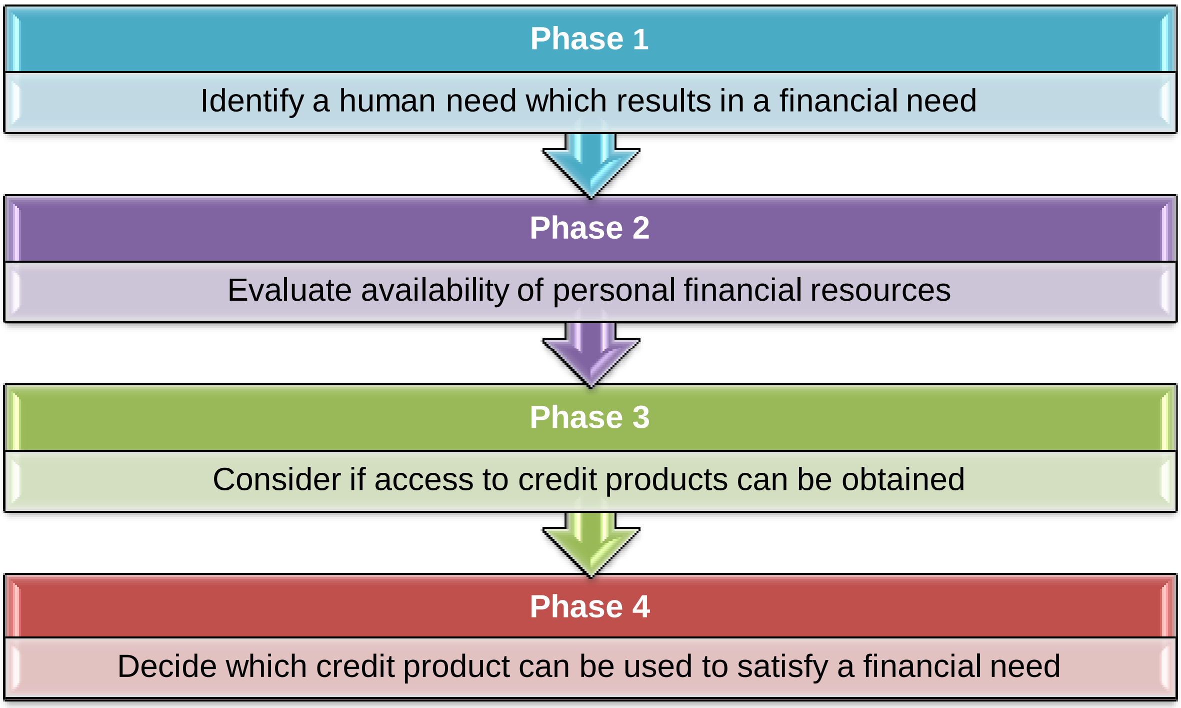
The objective of this study is to examine if South Africans use long-term liabilities to acquire long-term assets rather than satisfying short-term needs. The study will use the credit product classification framework to identify long-term credit products used by individuals in South Africa. Using empirical data obtained from individuals the needs satisfied when using these liabilities will be examined, in order to determine if appropriate needs are satisfied when using long-term liabilities. In order to meet the objectives of the paper the following research question will be investigated: "What needs are South Africans satisfying when using long-term liabilities?"

The research method applied in the paper consists of two phases. During the first phase a critical literature review is conducted to describe and identify long-term liabilities available to households and financial needs that can be satisfied when using liabilities. In the second phase of the research a quantitative research approach was adopted. The findings obtained from data collected from individual credit users were coded and analysed to establish which financial needs individuals satisfy when long-term credit products (liabilities) are used.

THE DECISION PROCESS WHEN SELECTING CREDIT PRODUCTS

The motivation for using liabilities (either short-term or long-term), also known as credit products, can be related back to the need to satisfy human needs (Goodall et al., 2014; Watkins, 2009). When a human need develops that a person wants to satisfy, they must either use existing assets or take up a liability. The decision to take up liabilities can be described in the following four phase process (refer to figure 1).

Figure 1: Decision process when selecting credit products (liabilities)



(Source: Venter & Botha, 2014 - *adapted*)

The first phase in the decision process is driven by the human needs individuals have (Goodall et al., 2014; Maslow, 1943). Maslow (1943) developed the theory of human motivation in which he considered both emotional and physical needs to develop five different human need levels (physiological, safety and security, love and belonging, esteem and self-actualisation needs). Although Maslow's theory provided the theoretical framework for various studies considering human needs, for example Seeley (1992), Oleson (2004), and Venter and Botha (2012), it does present some application problems. In order to address some of these application problems Alderfer (1969) proposed some changes to Maslow's grounded theory and developed his ERG theory (existence relatedness growth theory). Some of the changes included combining Maslow's five levels of needs into three levels namely existence (e.g. need for housing), relatedness and growth needs. In order to fulfil these human needs individuals usually have to make use of services or buy goods, therefore the human needs result in a financial need (the need to acquire something).

In the second phase of the decision process, the individual has to decide how to pay for an identified financial need. The individual firstly determines if he has sufficient assets (cash or savings) to fulfil his financial need (Barba & Pivetti, 2009). Alternatively, if the individual does not have sufficient cash resources, he must consider whether the need must be left unfulfilled or must liabilities be used to satisfy the need now and then pay for it later (Barba & Pivetti, 2009; Mashigo, 2006; Botha, du Preez, Geach, Goodall & Rossini, 2009). In order to assist individuals in meeting their needs financial institutions have developed specific credit products (liabilities) to satisfy different financial needs.

If the individual decides to use credit products (liabilities), the third phase in the process entails considering whether the individual can obtain access to the credit required. Previous studies identified certain factors both physical and regulatory that influence access to credit, for example life stages, income, race, gender, and employment status (Finscope, 2010; Tippett, 2010; Schooley & Worden, 2010; Brown, Garino & Taylor, 2008; Thums, Newman & Xiao, 2008; Lee, Lown & Sharpe, 2007; Venter & Stedall, 2010; Yilmazer & DeVaney, 2005).

In the final phase the individual selects a credit product (liability) to satisfy the identified financial need. In order to assist individuals financial institutions develop specific credit products to satisfy specific needs, for example mortgages to buy a house. This study considers if an individual decides to use a long-term liability, whether they are using it to satisfy long-term or short-term needs. In order to achieve this objective, credit products that can be classified as long-term liabilities will be identified using the credit product classification framework discussed below.

CREDIT PRODUCT CLASSIFICATION FRAMEWORK

The credit environment in South Africa is a large and complex industry (National Credit Regulator & Devnomics, 2012). Currently organisations such as Finscope, the National Credit Regulator, South African Reserve Bank and International Accounting Standards Board have classification guidelines that are used to report on liabilities (also referred to as credit or debt) usage by individuals. After analysing the different classification methods used in South Africa the following three groups that can be used to analyse liabilities were identified:

- ***Informal or formal liabilities***
  Finscope classifies credit products as informal or formal. Informal credit products refer to financial products and/or services that are not regulated by financial institutions (Finscope, 2014; Bankseta, 2013). Examples of informal credit products include borrowing from friends, family or colleagues, stokvels, burial societies, savings clubs, private money lenders such as mashonisas or loan sharks and spaza shops (Finscope, 2010; 2012; Bankseta, 2013). Formal credit products refer to financial products and/or services that are regulated by financial institutions (Finscope, 2014; Bankseta, 2013). Examples of formal credit products include personal loans, mortgages, vehicle loans, garage or credit cards, overdraft facilities, store cards and student loans (Finscope, 2010; 2012; Bankseta, 2013).

- ***Secured or unsecured liabilities***
  The National Credit Regulator of South Africa classifies credit products as unsecured or secured credit. Unsecured credit includes credit transactions which are not secured by pledge or other personal security (South Africa 2006: Section 39(3)). The terms and conditions of credit products can indicate whether a credit product should be classified as unsecured or secured debt. Examples of unsecured credit products include credit cards,

garage cards, bank overdrafts and store cards. Examples of secured credit products include mortgages, motor vehicle finance, retail furniture finance, pension-backed loans and insurance-backed loans (National Credit Regulator, 2008).

- ***Long-term and short-term liabilities***
  The South African Reserve Bank prepares household balance sheets using the System of National Accounts (SNA). The SNA classifies credit products as short-term or long-term credit. According to the SNA credit products which are repayable within a period of one year or less are classified as short-term whereas credit products which are repayable in a period of more than one year is classified as long-term (European Commission, International Monetary Funds, Organisation for Economic Cooperation and Development, United Nations & World Bank, 2009).

  Similarly, the International Accounting Standards Board classifies credit products as non-current or current credit in terms of the International Financial Reporting Standard. Non-current credit is classified as credit that is settled in a period of more than twelve months, for example mortgages. Current credit is classified as credit that is settled within a twelve month period, for example bank overdraft facilities (International Accounting Standards Board, 2010). Due to the similar definitions used by the South African Reserve Bank and International Accounting Standards Board, non-current credit can therefore also be referred to as long-term credit while current credit can be referred to as short-term credit.

These classification groups can be used to develop a credit product classification framework for a list of credit products available in South Africa. Due to the variety of individual credit products available in South Africa, it was not possible to classify each product, therefore products were grouped into groups that have similar characteristics. The initial credit product list was derived from the Finscope survey which focusses on financial products used by South Africans.

The characteristics of each credit product group were analysed in order to classify it as informal or formal, secured or unsecured and long or short-term credit products (refer to table 1).

Table 1: Credit product classification framework

Type of credit product	Informal or formal liabilities	Secured or unsecured liabilities	Long-term or short-term liabilities
Friends, family or colleagues	Informal	Unsecured	Short-term
Payday loans[1]	Informal	Secured	Short-term
Loans from mashonisas	Informal	Unsecured	Short or long-term
Loans from societies	Informal	Unsecured	Short or long-term
Loans from pawnbrokers	Informal	Secured	Short-term
Loans from spaza shops	Informal	Unsecured	Short-term
Micro-loans	Formal	Unsecured	Short-term
Store cards	Formal	Unsecured	Short-term
Store loans	Formal	Unsecured	Long-term
Credit cards	Formal	Unsecured	Short-term
Overdraft facilities	Formal	Unsecured	Short-term
Personal loans	Formal	Unsecured	Short or long-term
Loans against policies	Formal	Secured	Long-term
Instalment or lease agreements	Formal	Secured	Long-term
Property mortgage loans	Formal	Secured	Long-term
Garage cards	Formal	Unsecured	Short-term
Educational loans	Formal	Unsecured	Long-term
Emergency loans	Formal	Unsecured	Short-term
Loans from other banks	Formal	Secured or unsecured	Short or long-term

[1]Traditionally payday loans are classified as informal; however, some registered financial institutions may offer this product which will then classify it as a formal credit product.

As the aim of this study is to consider if South Africans use long-term liabilities to satisfy the correct needs, only long-term products identified in the framework will be analysed in the remainder of the paper.

In order to determine how each credit product in the framework should be utilized, the selected products' classifications were expanded by classifying each credit product according to Alderfer's ERG theory to establish which needs should be fulfilled when using each credit product.

INTENDED USE OF LIABILITIES ACCORDING TO ALDERFER'S ERG THEORY

Alderfer's ERG theory identifies different groups of needs that individuals must satisfy which consist of existence, relatedness and growth needs. In order to determine what needs should be satisfied by a specific long-term liability a comprehensive analysis of each of the levels was done. The following sections provide a brief overview of each of the levels included in the theory.

Existence needs are classified as basic needs which include, for example, the need for food, water, clothes, shelter (house), transportation (including buying a motor vehicle), utilities (electricity), medical insurance, life and disability insurance, personal care (beauty or barbershop, cosmetics) and household furnishings (Alderfer, 1969; Ball, 2012; Venter & Botha, 2014).

Relatedness needs are classified as needs which relate to external esteem; involve socializing, being part of relationships and being socially recognized (Alderfer, 1969; Ball, 2012). Relatedness needs, for example, include entertainment (such as movies, hobbies, sports club memberships), communication (telephone, television, internet), accessories (designer jewellery, shoes, handbags) and needs related to family and friends (such as gifts).

Growth needs are classified as needs related to an individual's internal esteem and self-development (Alderfer, 1969; Ball, 2012), for example having an education, going on vacation or owning a business. Table 2 presents a summary of examples of needs in each of Alderfer's three need levels.

Each credit product in the credit product classification framework can be classified according to the three levels of needs in Alderfer's ERG theory by referring to the credit product's characteristics, intended use and examples of needs in each need level. In table 2 the credit product classification framework is expanded by including examples of intended use for each type of credit product and thereby classifying it according to Alderfer's need levels.

Table 2: Credit product classification framework according to Alderfer's needs

Type of credit product	Credit product classifications: Informal or formal credit	Secured or unsecured credit	Long-term or short-term credit	Intended use when using the credit product	Alderfer's needs fulfilled
Loans from mashonisas	Informal	Unsecured	Short or long-term	For emergencies, luxuries, home improvement, family rituals (labola), education, business opportunities, debt clearance or top-up of income (Micro Finance South Africa, 2012)	Existence Relatedness Growth
Loans from societies	Informal	Unsecured	Short or long-term	For any type of need, including for example food, burial expenses, personal needs, entertainment or education.	Existence Relatedness Growth
Store loans	Formal	Unsecured	Long-term	Depending on the type of store, usually used for unexpected or once-off expenses of any kind, differs from store cards intended for monthly purchases.	Existence Relatedness Growth

Type of credit product	Credit product classifications: Informal or formal credit	Secured or unsecured credit	Long-term or short-term credit	Intended use when using the credit product	Alderfer's needs fulfilled
Personal loans	Formal	Unsecured	Long-term	For daily living expenses, expensive items, or consolidating debt (Goodall et al., 2014).	Existence Relatedness Growth
Loans against policies	Formal	Secured	Long-term	Used as a last resort in a financial crisis (Goodall et al., 2014).	Existence Relatedness Growth
Instalment or lease agreements	Formal	Secured	Long-term	Usually used to buy motor vehicles (Standard Bank, 2012).	Existence
Property mortgage loans	Formal	Secured	Long-term	To buy a residential home, or pay for renovations, (Goodall et al., 2014).	Existence
Educational loans	Formal	Unsecured	Long-term	To pay for tuition fees, accommodation, books or study related equipment (Nedbank, 2012).	Growth

Type of credit product	Credit product classifications			Intended use when using the credit product	Alderfer's needs fulfilled
	Informal or formal credit	**Secured or unsecured credit**	**Long-term or short-term credit**		
Loans from other banks	Formal	Secured or unsecured	Short or long-term	Depending on the type of loan, can satisfy any type of need.	Existence Relatedness Growth

Table 2 indicates the type of needs that should be satisfied when using different types of long-term liabilities. Some credit products can be used to satisfy more than one type of Alderfer's needs while others are intended to satisfy a specific need.

Table 3 summarises the different long-term credit products into groups with similar characteristics which are used for further analysis in this paper.

Table 3: Main long-term credit product groups

Main credit product groups	**Credit products in each main group**	**Classification according to Alderfer's ERG theory**
Informal, unsecured, short or long-term loans	• Loans from mashonisas • Loans from societies	Existence needs Relatedness needs Growth needs
Formal, unsecured long-term loans	• Store loans • Personal loans • Educational loans	Existence needs Relatedness needs Growth needs
Formal, secured, long-term loans	• Loans against policies • Instalments or lease agreements • Property mortgage loans	Existence needs

(Source: Venter & Botha, 2014 - *adapted*)

The credit products in the credit product classification framework with similar characteristics can be grouped together and are used for credit usage analysis to answer the research question of this paper. The products included in the first group in table 3 can be used as both long and short-term liabilities, as it was not possible to identify for which time period respondents used these products. These products were therefore excluded from the remainder of analysis in the paper.

METHODOLOGY

To complete the quantitative phase of the research survey data which identify the reasons why individuals use credit products was required. Due to the cost of collecting primary data, secondary data sources that contained data that could be used for the intended purposes was considered. The analysis of available sources found that some of the information contained in the Finscope data basis could provide the insights required. The latest data available for academic purposes containing this information was the Finscope 2010 survey data. Permission was obtained to use the data and all ethical clearance processes were satisfied. In order to transform the data into a format that could be used in this study, the raw data was firstly coded into answers with similar themes (e.g. fuel for car). These themes were hereafter converted into major expense groups (for example transportation). Finally each of these expense groups was allocated to one or more of Alderfer's ERG theory levels.

The survey from which the data was obtained was performed nationwide by means of face-to-face interviews using a semi-structured questionnaire. The data in the survey was collected by interviewing 3 900 randomly selected respondents (16 years of age and older). A number of 278 trained interviewers conducted the interviews. Quality checks were performed by regional supervisors before data were captured and coded. Applicable ethical standards were followed during the collection and analysis of data. The profiles of respondents that participated in the survey as well as those that make use of liabilities are provided in table 4.

Table 4: Demographics profile of respondents of sample

Demographic variable*	Total sample N	Liability users (N)	Liability users distribution **
Sample	3 900	1 729	
Marital status			
Married civil/religious	1 026	578	33.45%
Married traditional/ customary	308	158	9.14%
Living together	262	125	7.23%
Single/never married	1 727	614	35.53%
Widower/widow	380	158	9.15%
Separated	92	42	2.43%
Divorced	104	53	3.07%
Age ***			
16 – 17	135	20	1.16%
18 – 29	1 195	444	25.81%
30 – 44	1 270	632	36.75%
45 – 59	776	402	23.37%
60+	511	222	12.91%
Province			
Eastern Cape	499	217	12.55%
Free State	372	132	7.63%
Gauteng	636	354	20.48%
KwaZulu-Natal	624	295	17.06%
Limpopo	292	92	5.32%
Mpumalanga	336	95	5.50%
Northern Cape	259	123	7.11%
North West	327	114	6.59%
Western Cape	555	307	17.76%
Monthly personal income			
No income	561	155	11.19%
Irregular monthly income	426	148	10.69%
R1 – R999	531	204	14.73%

Demographic variable*	Total sample N	Liability users (N)	Liability users distribution **
R1 000 – R1 999	684	269	19.42%
R2 000 – R3 999	314	161	11.62%
R4 000 – R6 999	283	157	11.34%
R7 000 – R9 999	187	117	8.45%
R10 000 – R14 499	123	88	6.35%
R14 500 – R19 499	57	32	2.31%
R19 500+	67	54	3.90%

** Excluding refusals/uncertainties*

*** % calculated based on the number of liability users*

**** Continuous variable categorized for reporting purposes*

Although the data set obtained has been statistically verified to provide reliable information it does have some limitations. For example, respondents participating in the survey were required to do self-reporting on their financial behaviour which could lead to inaccurate information and analysis. Another limitation is that not all credit products identified in the literature were included in the omnibus survey instrument and data set; where there were very few respondents that made used of a specific product (for example an educational loan) it was classified as other, resulting in it not being possible to extract exact data for some products identified in the literature. Although the effect of these limitations was minimal it is important to take note of it. As the objective of the study was to determine if long-term liabilities were used to satisfy needs other than those for which the product was intended, only products that were designed to be used as long-term credit products were extracted from the data. The analysis provided in the paper focuses on two groups of products, namely formal secured long-term liabilities and informal secured long-term liabilities.

Of the 3 900 respondents, 1 729 respondents indicated that they had used credit products in the past or were currently using credit products. Table 5 presents the number of respondents using the selected long-term liability products.

Table 5: Credit products used when fulfilling needs

Credit products used to fulfil needs	Number of times the credit product was used
Formal, secured, long-term liabilities	**745**
Instalment or lease agreements	376
Property mortgage loans	369
Formal, unsecured, long-term liabilities	**530**
Personal loans	478
Store loans	52

Using the method described above the following expense groups were identified from respondent's responses: housing, transport, daily living/basic needs, emergencies, entertainment, family and friends, food and groceries, goods, personal use, telephone, education, clothing, pay debt and bills, electricity and business expenses.

These expense groups were then allocated to Alderfer's ERG theory levels (the analyses was done based on the underlying answers provided for each expense group):

- **Existence needs**: housing, transport, daily living/basic needs, emergencies, personal use*, clothing, pay debt and bills* and electricity
- **Relatedness needs**: entertainment, family and friends, personal use*, telephone and pay debt and bills*
- **Growth needs**: food and groceries, goods, personal use*, education, pay debt and bills* and business expenses

  * Allocated to more than one level.

To identify for which purposes long-term credit products are used in terms of Alderfer's ERG theory, the needs satisfied by each respondent were analysed and classified into one of the levels above.

RESULTS AND FINDINGS

Formal, secured, long-term liabilities

The expectation exists that formal, secured, long-term liabilities are used for gratification of existence needs, namely housing and transport needs, especially since this group consists of instalment or lease agreements (used to buy motor vehicles or housing fittings) and property mortgage loans. Consistent with the theory, respondents indicated that formal, secured, long-term liabilities are mainly used to satisfy existence needs in the form of housing and transport. A credit usage analysis of the subcomponents in this credit product group is provided below (table 6).

Table 6: Needs fulfilled per credit products group (Formal, secured, long-term liabilities)

Credit product group and type	Alderfer's need levels			Total
	Existence needs	Relatedness needs	Growth needs	
Property mortgage loans	86%	7%	7%	100%
Instalment or lease agreements	90%	5%	5%	100%
Formal, secured, long-term liabilities	**88%**	**6%**	**6%**	**100%**

Credit usage of the products in this loan group to satisfy needs is noticeably similar. As expected, these loans are mainly used to satisfy existence needs of a long-term nature. To better understand the needs satisfied by each of the credit products, an analysis of the needs satisfied when using each of the products in this group is provided in tables 7 and 8.

Table 7: Needs satisfied when using property mortgage loans

Needs satisfied when using property mortgage loans	% Usage
Housing	78%
Personal use	14%
Pay debt, bills	7%
Transport	1%
Total	**100%**

Table 7 indicates that the majority of respondents use property mortgage loans to satisfy housing needs, which is consistent with the product's intended use. Of concern is the fact that 22% of respondents indicated that they used it for other purposes such as paying other debt or personal use items which is classified as short-term needs.

Table 8: Needs satisfied when using instalment or lease agreements

Needs satisfied when using instalment or lease agreements	% Usage
Transport	84%
Personal use	12%
Pay debt, bills	2%
Housing	1%
Emergencies	1%
Total	**100%**

Table 8 clearly indicates that respondents use instalment or lease agreements to satisfy transport needs and personal use needs which could include buying a television set or groceries. As no detailed information is available for personal use needs it cannot be analysed further, however due to the legal regulation governing these loans it is assumed that the majority of the loans in this category are to acquire personal use assets. A concerning fact is that some respondents indicated that they used these loans to pay other debt, for example refinancing debt. This might be due to the fact that they cannot meet their existing obligations and need to extend the period in order to reduce the payments.

Formal, unsecured, long-term liabilities

For formal, unsecured, long-term liabilities the allocation of credit usage among the different levels of needs is noticeably different when compared with the other long-term liability group. This is consistent with the expectation that loans in this credit product group should be used to satisfy all three levels of needs. To identify differences in credit usage when satisfying needs, credit usage of each subcomponent in this group is indicated below (table 9).

Table 9: Needs fulfilled per credit products group (Formal, unsecured, long-term liabilities)

Credit product group and type	Alderfer's need levels			Total
	Existence needs	Relatedness needs	Growth needs	
Store loans	60%	21%	19%	100%
Personal loans	48%	21%	31%	100%
Formal, unsecured, long-term liabilities	**49%**	**21%**	**30%**	**100%**

A number of clear credit usage differences exist in the formal, unsecured, long-term liability group. When comparing the two credit products, it is clear that store loans have a higher gratification of existence needs and a lower credit usage to satisfy growth needs. Both products satisfy relatedness needs in the same way. It is also noted that the usage of credit from personal loans is more evenly spread through the different levels of needs, which is in line with the expectation that loans in this category are used to satisfy needs at all three levels of Alderfer's ERG theory. For a better understanding of the differences in credit usage between the products in this group, the details of the needs satisfied when using each product are provided in tables 10 and 11.

Table 10: Needs satisfied when using store loans

Needs satisfied when using store loans	% Usage
Personal use	36%
Clothing	29%
Pay debt, bills	15%
Goods	12%
Friends and family	4%
Business expenses	2%
Transport	2%
Total	**100%**

The main needs satisfied when using store loans include personal needs, clothing needs, the need to pay existing debt and bills and the need to purchase goods. Considering the design of the product it is mainly used to satisfy the needs as expected based on Aldefer's ERG. The fact that 15% of respondents indicated that they use these store loans to pay other debts is however of concern as it indicates that the respondents have entered the debt spiral where one form of debt is used to pay another debt.

Table 11: Needs satisfied when using personal loans

Needs satisfied when using personal loans	% Usage
Personal use	45%
Housing	12%
Pay debt, bills	12%
Education	10%
Transport	8%
Emergencies	4%
Goods	3%
Business expenses	2%
Friends and family	2%
Clothing	1%
Food and groceries	1%
Total	**100%**

Almost half of credit from personal loans is used to satisfy personal needs, while some credit is also used to fulfil housing needs and the need to pay for existing debt and transport needs. Consistent with expectations, even though loans in this group are mainly used to satisfy existence needs, it is clear that a small proportion of credit is also used to satisfy relatedness and growth needs.

CONCLUSIONS

Humans have various needs that develop through their life time. Alderfer differentiated between three types of needs namely existence, relatedness and growth needs in his ERG theory. In order to satisfy these human needs individuals are usually required to spend money and therefore a financial need develops. After a financial need develops the individual has to consider if he has sufficient assets available to meet the need. If the individual does not have sufficient assets he must either leave the need unsatisfied or make use of liabilities to obtain the funds required to meet the needs. The liabilities available to individuals can be classified in different ways, for example, short and long-term liabilities. Ideally short-term liabilities should be used to satisfy short-term financial needs and vice versa. Individuals often develop financial difficulties when they use long-term liabilities to satisfy short-term financial needs.

This paper investigates which needs South Africans satisfy using long-term liabilities. The analysis of the data obtained indicates that the majority of South Africans do use their long-term liabilities to satisfy the needs for which the products were intended to be used (long-term needs). It is however of concern that a significant number of respondents also used the liabilities for other purposes, including short-term needs despite the fact that the financial product being used was a long-term product.

Possible explanations for this could be that the individuals do not have access to short- term- products or that they use the long-term debt since it usually has a lower interest rate. Figures published by the National Credit Regulator suggest that consumers are over extended and unable to meet their liabilities, which probably results in them having to use long-term liabilities to meet their short-term needs.

These findings pose the question if the current legislation framework that regulates credit usage does indeed protect clients. There are various regulations including the National Credit Act that aims to protect users of financial services, but based on the analysis provided in this paper it is still inadequate to prevent clients from making incorrect long-term financial decisions. Role players in the industry should therefore focus on improving financial literacy of clients in order to prevent additional regulations that could negatively impact the industry and users of credit, being introduced.

BIBLIOGRAPHY

Alderfer, C.P. (1969), An Emperical Test of a New Theory of Human Needs. *Organizational Behavior and Human Performance,* Vol. 4, pp.142-175.

Ball, B. (2012), *A summary of motivation theories*. From http://www.yourcoach.be/blog/wp-content/uploads/2012/03/A-summary-of-motivation- theories1.pdf. [Accessed on: 16 November 2012].

Bankseta. (2013). The Microfinance Review 2013. Bankseta, Midrand.

Barba, A. & Pivetti, M. (2009), Rising household debt: Its causes and macroeconomic implications – a long period analysis. *Cambridge Journal of Economics* Vol. 33, pp. 113-137.

Botha, M., Du Preez, L., Geach, W.D., Goodall, B., Rossini, L. (2009). *Financial Advisors Development Series* 2009. LexisNexis, Durban.

Brown, S., Garino, G. & Taylor, K. (2008), Mortgages and Financial expectations: A Household-level analysis. *Southern Economic Journal,* Vol. 74 No.3, pp. 857-878.

European Commission, International Monetary Funds, Organisation for Economic Cooperation and Development, United Nations & World Bank. (2009), *System of National Accounts 2008*. New York.

Finscope. (2010), From a livelihood approach towards a Finscope Sustainability model. Results of a national survey on demand usage and access to financial services in South Africa. Finscope South Africa 2010 Report. Johannesburg.

Finscope. (2012), Survey highlights Finscope South Africa 2012. Finscope. Johannesburg.

Finscope. (2014), Finscope South Africa 2014. Finscope. Johannesburg.

Goodall, B., Rossini, L., Botha, M. & Geach, W. (2014), *The South African Financial Planning Handbook 2014*. Lexis Nexis, Durban.

International Accounting Standards Board. (2010), International Accounting Standard 1 Presentation of Financial Statements. A guide through International Financial Reporting Standards by the International Accounting Standards Board. 2010 IFRS Foundation. London: International Accounting Standards Board.

Lee, Y.G., Lown, J.M. & Sharpe, D.L. (2007), Predictors of Holding Consumer and Mortgage Debt among Older Americans. *Journal of Family and Economic Issues*, Vol. 28, pp.305-320.

Mashigo, P. (2006), The debt spiral in the poor households in South Africa. *The International Indigenous Journal of Entrepreneurship, Advancement, Strategy and Education*, Vol. 2(1), 2006.

Maslow, A.H. (1943), Theory of human motivation. *Phychological Review*, Vol. 50, No. 4, pp. 370-396.

Micro Finance South Africa. (2012), 'MFSA research 2011/2012', *presented at a Debt workshop at the University of South Africa*, 25 July 2012, Pretoria.

Momentum and Unisa. (2014), *South African household wealth index quarter 2 2014*. Momentum & Unisa: Pretoria.

National Credit Regulator. (2008), *Consumer Credit Report*. Second quarter June 2008. Johannesburg: National Credit Regulator.

National Credit Regulator and Devnomics. (2012), *Literature review on the impact of the National Credit Act (NCA) has had on South Africa's credit market*. Johannesburg: National Credit Regulator.

National Credit Regulator. (2014a), *Credit Bureau Monitor*. First quarter March 2014. Johannesburg: National Credit Regulator.

National Credit Regulator. (2014b), *Consumer Credit Market Report*. Second quarter June 2014. Johannesburg: National Credit Regulator.

Nedbank. 2012. *Student loans*. Available from: http://www.nedbank.co.za/website/content/products/product_detail.asp?SubSubcatid=1883&Subcatid=506&ProductID=255 [Accessed 4 August 2012].

Oleson, M. (2004), Exploring the relationship between money attitudes and Maslow's hierarchy of needs. *International Journal of Consumer Studies*, Vol, 28 No. 1, pp.83-92.

Schooley, D.K. & Worden, D.D. (2010). Fueling the credit crisis: Who uses consumer credit and what drives debt burden. *Business economics*, Vol. 45, No. 4, pp. 266-276.

Seeley, E. (1992), Human needs and consumer economics: The implications of Maslow's theory of motivation for consumer expenditure patterns. *The Journal of Socio-Economics*, Vol. 21 No. 4, pp. 303-324.

South Africa, (2006), *National Credit Regulations*. Department of Trade and Industry Government Gazette Volume 491 no 28864 May 2006.

South African Reserve Bank. (2014), *South African Reserve Bank Quarterly Bulletin December 2014*. South African Reserve Bank: Pretoria.

Standard Bank. (2012), *Instalment sale and financial lease*. Available from: http://www.standardbank.co.za/portal/site/standardbank/menuitem.de435aa54d374eb6fcb695665c9006a0/?vgnextoid=1a9bf8bc8f35b210VgnVCM100000c509600aRCRD [Accessed: 4 August 2012].

Swart, N. (2012), *Personal Financial management*. Third edition. Cape Town: Juta and Co.

Thums, S.L., Newman, B.M., & Xiao, J.J. (2008), Credit card debt reduction and developmental stages of the lifespan. *Journal of Personal Finance*, Vol. 2008 No. 6, pp. 86-107.

Tippett, R.M. (2010), *Household Debt Across the Life Course: An Analysis of the Late Baby Boomers.* Unpublished PHD from the Department of Sociology in the Graduate School of Duke University 2010.

Venter, J.M.P. & Botha, A. (2012). *Effect of life stage on debt usage motives*. Personal Finance and Taxation Conference, 21 September, Pretoria.

Venter, J.M.P & Botha, A. (2014), Analysing the financial needs addressed by South African consumers when using credit products. *Risk governance and control*: *financial markets and institutions*, Vol. 4, No 2, pp. 101-109.

Venter, J.M.P. & Stedall, C. (2010), The influence of life stages on the usage of financial products by South African households. *South African Accounting Association 2010 North Gauteng Regional Conference*. Pretoria.

Watkins, J.P. (2009). Corporate Profits and Personal Misery: Credit, Gender, and the Distribution of Income. *Journal of Economic Issues* Vol. XLIII, No 2, pp. 413-421.

Yilmazer, T. & DeVaney, S.A. (2005). Household debt over the life cycle. *Financial Services Review*, Vol. 14, No 4, pp. 285-304.

MAF009 Latent accounting standards within emerging economies: the case of oil and gas upstream activities in Libya

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Abstract

Accounting regulation within developing economies merits careful reflection, particularly where local directives disregard globally accepted accounting practice and potentially hinder vulnerable economies. The regulatory arrangements for oil and gas upstream activities, once oil and gas have been discovered, within Libyan Petroleum Law (LPL, 1955) allows discretionary latitude which could reduce the value of fiscal returns between International Oil Companies (IOCs) and the Libyan government. This paper considers the jurisprudence of this ostensibly latent accounting framework, questioning its efficacy. The study finds an apparent dormant intransigence from both the Libyan government and the IOCs regarding this regulation. Applying a diffusion-contingency model to explore influences for accounting reform reveals power dynamics and economic implications as key variables. Fiscal impact is considered utilising simulation modelling techniques, applying differing accounting methodologies using the historic upstream cost data reported by seven IOCs. The simulations show significant value shifts between methodologies, contradicting existing market valuation literature rationalised through cost sharing agreements.

Key words: Libya, Accounting standards, Emerging economies, Oil and gas accounting, diffusion-contingency model

I. INTRODUCTION

The primary purpose of this paper is to consider the development of accounting systems within emerging economies by applying a case study approach, which facilitates a depth of analysis of one country's particular accounting reforms. The study examines the continued application of localised accounting standards, set in 1955, for upstream oil and gas accounting transactions in Libya. Consideration will be given to both the process of accounting reform and the economic value implications caused by such standards between the governmental bodies and international oil corporations (IOCs). The context of the paper pertains to contractual payments within these activities in Libya, a country highly dependent on revenue generation within this sector. The paper also adds to extant literature regarding global accounting practices for such upstream activities relating to full cost (FC) and successful effort (SE) accounting methodologies, recognising the respective impacts on market values of applying such policies.

The development of accounting regulations can be seen as a function of differing economic environments and the demand for financial information (Ashraf and Ghani, 2005). The focus of global accounting standard-setting bodies has been on setting standards which are both acceptable and flexible to a vast body of constituents in different countries globally (Doost, 1997). Developed economies adopt generally accepted accounting principles, consistent with their similar economic, political and social conditions (Bait El-Mal, 1990). However, these conditions differ in emerging economies where there are localised environmental variations regarding cultural backgrounds, ownership, economies, legal structures and political institutions (Rahman *et al*, 1994; Hassan, 2008). Accounting systems within these economies are affected by weak indigenous accounting professions (Joshi, 2001) a lack of expertise in setting accounting standards and unfamiliarity with International Accounting Standards. Structured capital markets with their associated robust regulatory frameworks are also less sophisticated in emergent economies (Choi and Mueller, 1978). Whilst favourable socio-economic and political climates have been posited as positive catalysts to improving reporting practices within a country (Assenso-Okofo, 2011), their absence may negate development. Emerging economies lacking formalised indigenous accounting standard-setting processes may consequentially adopt standards established in developed countries (Doost, 1997) but which are questionably apposite to an undeveloped environment (Samuels, 1993). However, a principles-based set of rules enables local customisation (Chua and Taylor, 2008) and may allow effective contextualisation to local socio-economic and cultural environments (Hassan, 1998; Mirghani, 1998). It is also possible that powerful actors might influence such frameworks in these emerging economies to their own benefit (Cortese *et al.* 2010).

A contentious area of accounting regulation relates to the treatment of oil and gas upstream activities where FC and SE principles dominate global practice (Gallun *et al*. 2001). Under the FC method successful and unsuccessful costs of upstream exploration projects are capitalised, whereas the SE method immediately expenses unsuccessful activities. The methods are based on differing views of accruals and conservatism principles (Brooks, 1986). SE supporters assert conservatism with unsuccessful wells, having no economic benefits, being written off immediately. FC supporters justify the capitalisation of unsuccessful costs by the accruals concept, with costs perceived as a fundamental part of the cost of finding oil and gas as all exploratory activities, successful or otherwise, ultimately lead to future economic benefits. However, the capitalisation of such unsuccessful costs, e.g. abandoned properties, contradicts the matching concept as these costs will not match any future economic benefits (Baker, 1976). Both methods are currently permissible and at the discretion of IOCs (SEC, 1978) with the IASB continuing to debate their value within the extractive industries (IASB, 2010).

Present literature asserts that oil and gas companies report different income statements under FC and SE methods (e.g. Murdoch and Krause, 2008). With SE expensing unsuccessful exploratory activities and FC capitalising and writing them off to the income statement gradually, this has a timing effect on profit with a propensity for lower profits in the SE companies (Lilien and Pastena, 1981). There is also the potential for volatility for SE companies (Dhaliwal, 1980) due to the immediacy of write off rather than a smoother profile of expensing (Cooper *et al*. 1979). This affects short-run (but not long-run) expected earnings growth (Yee, 2006), as well as taxation charges (Baker, 1976). Likewise, corporate balance sheets differ based on the accounting methods (e.g. Sunder, 1976) as the FC method capitalises unsuccessful activities. This significantly affects oil and gas companies reported values (Collins and Dent 1979) although the impact is reduced through a ceiling test designed to consider impairment on FC assets (Boone and Raman, 2007). The market value of oil and gas companies is also affected, with companies adopting the FC method showing superior equity performance to those under the SE method (e.g. Collins and Dent, 1979; Cooper *et al*. 1979; Sunder, 1976). This is explained by the higher balance sheet book values and the risk-reducing (through income-smoothing) effects of FC companies.

Libya differs from such globally established practice, applying a local variant with Libyan Petroleum Law (LPL) permitting oil and gas companies either to expense or capitalise some of the differing categories of costs (LPL, No.25, regulations 8 and 9, 1955). This increases management discretion compared to internationally recognised methodologies under which, once a company adopts either SE or FC, they have no further discretion regarding the differing categories of costs. Under LPL the potential for management discretion is increased, being applied individually to numerous cost categories. The LPL permits oil and gas companies either to expense or capitalise some types of costs such as intangible geological and geophysical (G and G) costs. Existing local standards are thus not aligned to global practice, and the logic applied to the formation of such regulations is indeterminate. There are three possible explanations for this. Firstly the level of discretion under LPL may relate to the government's encouragement of foreign investment. Secondly, at the time of the LPL development most companies treated upstream activities under SE accounting principles but the FC approach was being introduced by small and new companies (Brock *et al*. 1982), resulting in the hybrid approach adopted in Libya. Thirdly, the level of freedom adopted may be a device of the IOCs who helped draft the law (Waddams, 1980) to allow management discretion. This has resulted in IOCs expensing rather than capitalising these costs when they have the option (Mahmud and Russell, 1998). This increased discretion could result in timing effects for the cost recovery contractually agreed by the government and the IOCs where costs are being shared. This could result in a time related movement of value from the government (as principal) to the IOC (as agent) due to the potential earlier remittance of cost. The self-interest of the IOCs permitted by the LPL's management discretion results in potential agency cost which is presently uncontested. A comparison of the treatment on the upstream cost categories under LPL, SE and FC is provided in Table 1.

Table 1 about here

The paper makes the following contributions. Firstly, the paper considers the standard-setting process within an emerging economy, adding to the limited extant literature but with particular emphasis on localised accounting standards. The specificity of this study to local accounting standards differs in approach from studies in emerging economies, which are often generic to the adoption of international standards (e.g. Hassan, 2008). Secondly, a diffusion-contingency model is adapted and applied from governmental accounting reform. The researchers believe the model is apt to the research area due to Libya's socio-political environment and its lack of a professional accounting body as a standard-setting body. Thirdly, the paper considers the economic impact on an economically and politically vulnerable society of applying existing accounting regulations as opposed to more accepted practice. The findings should not only be of interest to the Libyan economy and accounting reform process, but also contribute to the understanding of accounting innovation within emerging economy and extractive industry reporting literature.

The remainder of the paper is structured as follows. The next section details the theoretical frameworks applied to the qualitative aspects of the study regarding accounting developments. Consideration is also given to the methodology adopted for the quantitative aspect of the paper regarding the fiscal impact of alternative accounting treatments. An analysis and discussion follows of the factors influencing developments in this particular context and the results of the simulation study. Finally, there are concluding comments and areas for further research.

II. THEORETICAL FRAMEWORK

The dominant framework applied to accounting standard development is institutional theory. Accounting regulations in Libya are significantly affected by government law, partly due to a professional accounting body deemed ineffectual in developing an accounting regulatory framework. Therefore the paper will also draw on diffusion-contingency models normally applied to government accounting innovations. The models have been applied separately to developed and developing economies due to the significant differences recognised between these classifications (Hassan, 2008). In addition the paper considers agency theory as accounting regulation in both its development and application involves the participation of principal and agency actors.

Institutional theory

Institutional theory aids consideration of the relative power of stakeholders to influence accounting regulations, particularly within developing economies (e.g. Hassan, 2008; Mir and Ramahan, 2005). Institutional theorists argue a case for isomorphism (where institutions may move towards similar form, shape, or structure of other entities) and legitimacy as drivers for accounting regulatory change (DiMaggio and Powell, 1983; Scott, 1995). Institutional isomorphism creates change through social forces that impose pressure particularly from the state (coercive isomorphism), the accountancy profession (normative isomorphism) and adopting of best practice (mimetic isomorphism) as seen in other countries (DiMaggio and Powell, 1983). Legitimacy would lead an entity or country to adopt practices that would legitimise their existence in the eyes of society and its key stakeholders. Legitimacy concerns and institutional isomorphism can conjoin to change accounting practice. For example, in emerging economies foreign companies are seen to influence local regulation towards global standards (Wei *et al*. 2001).

Diffusion-Contingency model

A Diffusion-Contingency Model for government accounting reform developed from an initial contingency model by Luder (1992) which considered stimuli, structural variables, and implementation barriers to reform. The model undertook various transformations including work by Godfrey *et al.* (2001), who introduced a diffusion perspective initially applied within a developing economy environment. The model is based on an iterative process involving the interaction of political, social and administrative actors (those individuals who have the potential to have significant influence), filtered by the government's organisational structures. The diffusion-contingency model has been applied mainly to developed countries (e.g. Ouda, 2008; Caba-Perez *et al*. 2009) with limited exposure to emerging economies (e.g. Upping and Oliver, 2011). Variations of Contingency models continue to be applied to accounting regulation studies (e.g. Justesen and Mouritsen 2011).

The stimuli originally propounded for accounting change include fiscal stress (e.g. shortage of public financial resources), dominant political doctrines, external standards, financial scandal, and professional interest (Luder, 1992). Change can also be promoted by people or organisations with a vested interest in change (Upping and Oliver, 2011) including numerous potential change agents such as consultants, commentators, academics and professional bodies (Christiensen, 2002). Of particular interest to developing economies is a dependency ethos placed on economies which may induce accounting reform. For example, donor agencies often require accounting innovations prior to receiving funds, expertise and technologies (Godfrey *et al.* 2001).

Key to accounting innovation is the role played by political, administrative and social actors. Luder (1994) recognised the influence of political variables, specifically the political culture (e.g. openness of particular economies), political system (e.g. democratic) and the existence or otherwise of political competition. Carruthers (1995) considers these political factors more important than economic motivations. Moreover, innovation may be impeded or facilitated by a weak or strong politico-administrative system. Reform may be constrained by the pervading administrative culture, staff formation system, or the standard-setting efficiency of the organisation and its amenability towards accounting (Luder, 1994). Accounting innovation is also positively related to affirmative attitudes to change; decentralisation where control is not distanced from the operational problem; levels of complexity (knowledge and expertise); and levels of formalisation or being rule bound (Godfrey *et al*. 2001). Within Libya the relative importance and power of the differing actors is critical as they may have varying prominence. For example, the principal governmental and societal actors may be perceived as ancillary relative to the more powerful and influential IOC agency actors, whose resource and power-hold on emerging economies should not be understated.

The characteristics of any innovation are also critical in the reform agenda. Relative economic advantage in adopting an initiative e.g. through its fiscal revenue generation, should influence reform. Compatibility of the innovation to the adopting organisations' existing values and requirements may impact positively or negatively. Likewise complexity in the perceived difficulty in understanding and using the reform may be a barrier to change. Numerous other barriers to innovation have also been considered including the legal system in situ, the qualifications of accountants and the political culture (Luder, 1992*)*.

Contractual behaviour and agency theory

Agency theory can be used to understand the dynamics of relationships between principal and agent (Jensen and Meekling, 1976). This can be applied at a macro level (e.g. regulatory policy) as, in this context, regarding the contractual arrangements between the national government (the principal) and IOCs (the agents). Significant exploration, development and production work is carried out in emerging economies through varying forms of production-sharing contract. Strong and active contractual partnerships in the oil and gas industry are seen as essential, leading both parties to benefit through cooperation (Pongsiri, 2004). For the governments of emerging economies, foreign contracts are critical due to their need to access risk capital, expertise and technology. Many of these contracts include cost-sharing, which will be impacted by the choice of method in recording costs, and provide the context and locus for the paper.

A number of assumptions pertinent to agency theory are relevant to this study, including economic actors engaging in opportunism (Wright *et al*. 1996) and self-interest affecting the setting and functioning of contractual agreements (Vickers and Yarrow, 1988). It is also assumed that agents and principals will have different goals, with clashes exacerbated by cultural and institutional differences (Jacobs, 1992). The objectives of the government and the IOCs often clash (Bindemann, 1999) as host countries aim to maximise economic values and IOCs to maximise profit (Pongsiri, 2004). Fattouh and Darbouche (2010) note that the negotiated contracts between governmental bodies and IOCs are also driven by country-specific factors including the size and quality of reserves, the political capability of the domestic government, the countries' own parastatal entities and international sanctions.

III. RESEARCH DESIGN

The research questions being addressed in the paper are as follows:

1. What are the influencing factors in the standard-setting process of the Libyan government's oil and gas upstream accounting contractual arrangements with IOCs?

2. What is the impact on Libya's economy of applying the existing latent discretionary-based LLP methodology, as opposed to the Libyan government selecting an alternative global standardised practice?

The first question will be considered with regard to documentary evidence and discussions with the key actors, using the variables identified in the diffusion-contingency model. The actors were interviewed using a semi-structured questionnaire methodology and were all at senior management levels (Table 2):

Table 2 about here

To gain the views of practitioners in the sector, a questionnaire was sent to financial managers in all IOCs operating in Libya with 20 responding (a response rate of 87 per cent). Documentary evidence considered included the existing law regulating related transactions, IOC accounting returns and relevant literature on oil and gas upstream accounting.

The second research question considers the cost share cash flows of historic actual transactions of IOCs, regarding the government's repayments to IOCs under the cost-sharing arrangements. The cash flows are considered under the existing LPL legislation and then reconfigured using SE and FC methodologies by simulation. This allows consideration of the fiscal impact to the Libyan government of selecting either the FC or SE methods for upstream transaction recording instead of the existing LPL method. The second research question also applies a further simulation exercise which assumes that the Libyan government will require IOCs to use the same method as their holding companies presently use (either FC or SE), thus aligning accounting practice to globally accepted standards.

The researchers selected the data from the detailed annual reports of oil and gas upstream costs of IOCs as presented to NoCorp (the Libyan oil parastatal), where LPL regulations were applied. The data, showing cost repayment information by category of expenditure, represents eight years' (2000-2007) activities for the IOCs, which are then simulated under differing FC and SE assumptions to investigate the fiscal impact of each methodology. The researchers utilised data from all IOCs producing during this period, except one company who did not permit release of the information. The researchers were not able to obtain information outwith this period as more recent years' data was unaudited at the time of the study, and data prior to 2000 was unavailable. Similar simulation models to those applied in this study have been used in accounting literature to investigate the impact of using different accounting methodologies (e.g. see Healy *et al.* 2002).

The eight years' upstream transactional costs (subject to cost sharing costs as considered) are assumed to typify normal upstream activities, the researchers having found no data to the contrary. To simulate the cost sharing value changes under different methodologies, the researchers were provided with information as to how IOCs applied the LPL in regard to discretionary clauses. The simulation extrapolated forward depreciation and amortisation costs related to the eight years' activities for any capitalised costs (e.g. tangible and intangible G and G costs), based on the different alternative accounting treatments. The researchers only calculated the costs of oil and gas upstream activities where they are treated differently under the LPL, FC and SE methods. As shown in Table 1, this will include: tangible G and G costs, intangible G and G cost, exploratory dry hole costs, intangible exploratory successful wells and development dry hole costs. The researchers noted that where under LPL companies could elect to capitalise or expense, they chose to expense, as this resulted in earlier payback of the upstream transactional costs (consistent with Mahmud and Russell, 1998). The only difference in regard to the IOCs transactions is the timing of the expense and resultant reclaim from the Libyan government, the total expenses for all simulations being identical (17,336 million Libyan Dinar, equating to circa £8.65 billion for the eight year period).

The cost-sharing value changes are considered using net present value (NPV) principles, assuming that corporate value is the sum of its future cash flows discounted at an appropriate cost of capital. In the agency-based contractual agreement the cash recovery payments to IOCs under cost sharing contracts, which affect their corporate value, has the equal opposite value effect on the Libyan economy. The NPV to the Libyan economy is therefore calculated based on the outgoing cost share payments to the IOCs, which will be considered for comparison purposes using firstly the dimensions imposed by existing LPL based practice (NPV_{LPL}) as follows:

$$NPV_{LPL} = \sum \text{Upstream cash flow repayments to IOCs } n /(1 + r)^n$$

This same cost base will then be simulated using (i) full FC or full SE standardised methodology adoption and (ii) methodologies adopted by companies as being congruent with those of their holding company (SE or FC), as evidenced from the IOCs holding company's annual report. The simulations therefore provide the NPV of the cost sharing payments made to the IOCs by the Libyan government, based on the same economic upstream financial transactions but where the timings will differ based on the methods used, resulting in the following four model valuations:

Model 1: Upstream cash flows based on Libyan government adopting LPL principles and IOCs applying their existing discretion (NPV_{LPL})

Model 2: Upstream cash flows based on Libyan government adopting FC principles (NPV_{FC})

Model 3: Upstream cash flows based on Libyan government adopting SE principles (NPV_{SE})

Model 4: Upstream cash flows based on Libyan government allowing IOCs to adopt FC or SE principles in line with their holding companies existing global practice (NPV_{hold}).

The resultant NPVs will be compared on the criterion of minimising the negative NPV impact on the Libyan Government's cash outflows. . The NPVs will also be calculated based on differing costs of capital, allowing simulation of differing economic conditions.

IV. FINDINGS AND DISCUSSION

Accounting for oil and gas upstream activities

The oil and gas sector has had a profound impact on Libya, bringing major developmental opportunities and accounting for over 95 percent of the country's merchandise exports and over 50 percent of its Gross Domestic Product (IHS Global Insight, 2009). From a political perspective, the industry has placed large resources at the government's disposal for allocation to the development of industry, public works, agriculture, and for economic and social welfare (Waddams, 1980). Since economic sanctions were lifted in 2003 by the UN the Libyan energy market has blossomed (Otman and Bunter, 2005), with increased interest from IOCs resulting in the state awarding numerous licenses in 2003 (Ali, 2005).

The Libyan oil and gas industry is administered by the state-owned National Oil Corporation (NoCorp), which develops its exploration and production operations either through its own fully owned companies, or in participation agreements with IOCs. In 1965 Libya adopted a royalties-based remunerative contract (based on the OPEC formula) to all in-country operators in Libya, in order to create contractual agreements between Libya's government and the IOCs (Hallett, 2002). The Libyan authorities hoped that such contracts would attract foreign oil and gas companies, but granting Libya at least 51 percent of output from operations through royalty and income tax payments (Otman and Bunter, 2005). In 1970, oil price and Libyan tax rate increases necessitated a change in the existing contract arrangements to Exploration and Production Sharing Agreements (EPSAs), generating greater profits for Libya's economy (Waddams, 1980). EPSAs allow cost recovery of IOC exploration, development and production costs in cases where successful discovery occurs. The contracting company incurs all costs during the exploration stage. If oil is found in commercial quantities, these costs are divided between the partners; otherwise the IOCs incur all costs (Abozrida, 2000). Thus, when production commences the IOCs can then reclaim from the Libyan government the government's share of the exploration and development costs already incurred and also any further costs.

The Libyan contractual terms for IOCs are among the harshest in the world, with the aggregate government share for it's most recent tranche of contracts (EPSA IV) averaging around 88 per cent of revenue (Johnston, 2005). Fattouh and Darbouche (2010) argue that the country has a strong negotiating position due to its prime geographical location close to Europe, its attractive geological features and its high-quality oil. Also, production costs are relatively low and the region is relatively under-explored, partly due to the impact of past sanctions. The government's improved negotiating skills has also created tougher fiscal terms for IOCs, for example the government timing its negotiations with favourable oil market conditions, introducing innovative bidding procedures, and when obtaining maximum concessions from one of its oil partners applying these terms to the other IOCs (Fattouh and Darbouche, 2010).

Within Libya there is no agreed accounting standard to be applied by companies, due primarily to the lack of an institution responsible for issuing accounting standards. This has resulted in varied practices and an undeveloped accounting culture displaying disparity in the application of accounting principles (Bait El-Mal, 1990, Eldanfour and McChlery, 2012). Chua and Taylor (2008) note the practice of institutionalising accounting standard-setting to national agencies such as local accounting professional associations. Such relinquishing of control by government bodies is questionably effective in developing economies but is likely to be ineffective in countries with poorly developed accounting professions. Theoretically, the

Libyan Accountants and Auditors Association (LAAA) is responsible for establishing and monitoring accounting standards and practices in Libya (Accounting Profession Law no. 116 of 1973). However, the LAAA failed to propose accounting standards until 2005 when it issued the Libyan Accounting Standards (LAS), and only thirteen of its twenty nine proposed standards were eventually adopted in 2008 (LAAA, 2008). The remaining standards (14 to 29) have not yet been issued, nor have the thirteen standards set been monitored by the LAAA for compliance. Furthermore, these standards do not relate to oil and gas accounting regulation which is governed solely by the LPL.

The LAAA's weakness makes the State, *de facto*, the sole statutory body for accounting regulation. The most important influences on the regulation of Libya's accounting practices are its commercial and income tax law, and the General People's Committee for Inspection and Control (Shareia, 2006). However, the legal stipulations are general and basic for commercial law requirements in terms of reports and audit (Bait-Elmal, 1990). The same is true of income tax law, which stipulates practice merely for reporting of revenues and expenses (Gzerna, 1999) without specifying any accounting standard to be adopted in determining taxable income (Buzied, 1998). The legislative infrastructure was found incapable of drawing up specific upstream activities legislation. Therefore the IOCs helped draft the regulations under the jurisdiction of the Ministry of Finance and Economics (Waddams, 1980, p57) with obvious potential danger of conflict of interest influencing the legislation. The resultant inbuilt management discretion accords with Cortese *et al.* (2010) findings that corporate interference has successfully maintained management discretion within oil and gas standards. The non-engagement of regulatory bodies in the upstream accounting issue suggests at best latent normative isomorphism.

Libya's openness to foreign trade before and after the period of sanctions exposing her to best practice and mimetic behaviour (Wei et al, 2001) did not lead to the adoption of global oil and gas practice. Neither did a coercive isomorphism stemming from resource dependency and legitimacy concerns (DiMaggio and Powell, 1991) lead to development of appropriate standards. Libya's government failed to embrace, let alone enforce, global practices with NoCorp remaining silent on legislative changes. Powerful lobbying may influence regulatory practice in other domains, but within Libya's oil and gas industry (Cortese et al, 2010) this has not been the case. The IOCs could potentially have derived economic benefit by securing standards reflecting differing practice from LPL, but they did not seek change. Likewise, whilst professional norms move other countries' accounting practices towards accepted practice (Parboteeah et al, 2002; House and McGrath, 2004) this has not happened in Libya as the LAAA appears disengaged with the formation of accounting legislation. Thus, the influential variables of institutional theory fail to explain the standard-setting milieu in this particular context. The influential factors are therefore considered utilising the diffusion-contingency model, with its close links to government reform which conform it more aptly to the Libyan environment.

Regarding stimulus and promoters of change there would seem to be little impetus for change. There was no evidence of a stimulus for change from within the government, according to the government administrator or academic interviews. Global external standards, developed by the global accounting forum and evolving since the LPL's introduction, have been ignored by Libya whether intentionally or through intransigence. This may be because the dominating political doctrine engendered a closed political system and limited collaboration with external bodies, particularly during the period of sanctions. Libya inherently suffers from fiscal stress and economic crisis. However, the timing of revenue flows related to upstream oil and gas cost recoveries has never been raised as a means of alleviating such stress. Financial scandal, corruption or fraud were also not raised within interviews as a stimulus for change in this accounting area.

Promoters of change amongst the various actors are often regarded as key stimulants within accounting reform, but in this situation no evidence was found of first movers. With the context being regarded as a localised problem and thus of little global significance this has resulted in a lack of interest from change agent consultants or commentators. Academic knowledge of an area peripheral to mainstream accounting accounts for its absence from curriculum and research studies within Libya, although academics did demonstrate understanding of local and global methodologies. However, this level of comprehension does not extend to the indigenous accounting profession. There appeared to be a groundswell of opinion amongst interviewees that this specific accounting practice should be aligned to global practice. Their rationale came not from a conceptual stance, but from a desire to develop their accounting practices by learning from the global accounting profession. Interviewees believed there was urgency for change, recognising the weakness of the indigenous accounting profession. However, all interviewees save NoCorp believed they had any power or legitimacy to influence change, and NoCorp seemed passive about reform. Whilst a dependency on donor agencies within a developing country may link funding commitments to accounting reform, such as adopting IASs, this is unlikely in such a peripheral area of concern. However, there appears to be a form of dependency regarding the accounting knowledge of the international accounting community working within IOCs. This community are believed to be the primary actor capable of maintaining the accounting regulatory process regarding such a technical area as upstream oil and gas transactions. As such the IOC community reflected as a whole a preference for change by implementing globalised accounting practice. Each company recognised the time and cost effect of the existing dual reporting, as they have to report under LPL rules for the Libyan government and under global standards for their own international reporting. A number of IOCs (35 per cent) recognised that the present dual systems cause confusion to staff due to conflicting treatments. However, this has not moved the IOCs to seek change.

Few of the key actors involved in accounting reform, appear to be catalysts for change. The political climate has resisted change, particularly change evolving from the developed West where proponents of oil and gas accounting (such as the SEC and IASB) are based. Likewise, the dominant political leadership did not lend itself to internal political competition, effectively inhibiting any critique likely to challenge weaknesses, including accounting and tax regulation. Neither are administrative bodies (such as the upper echelons of the GPCIC, the GPCPF and NoCorp), regarded as promoters for change. Accounting regulation is not presently seen as the responsibility of the fragile indigenous professional body. Similarly, the centralised GPCIC provide only general legal stipulations for reporting and income tax law and will not interrogate the complex specificities of oil and gas accounting. Notably, the administrators interviewed all supported change, especially towards the rigorously-developed global standards. In the light of governmental administrators' legalistic rule-based culture and lack of staff formation systems there is little capacity to deal with such complex technical issues. The IOCs as social actors seem to possess the requisite specialisation and resource to develop any changes; however, since the LPL's inception they have not questioned its legislation. This may arise from, economic or political self-interest i.e. not wishing to adversely affect relationships with the host government who are in a powerful negotiating position over mineral resources.

Other factors affecting change might include the characteristics of the innovation itself. The compatibility of methodologies is important to stakeholders, as current practice applies accounting principles differing from the LPL. Notably, the current law disregards recognised accounting conventions and is also internally inconsistent. The complex nature of any change will be challenging. Five of the seven stakeholders interviewed recognised a difficulty in implementing any revised framework due to the complexity of present global reporting and the lack of professionalisation within Libya's accounting profession. However, there is apparently no problem regarding change within the IOC community, as they already apply global standards for their own reporting. Amongst other stakeholders, only the academics showed any understanding of global methodologies and the differences between FC and SE. Other barriers to change include the economy's openness to changes such as the global models for upstream accounting. This now appears less likely to be a barrier than under the previous governmental structure with a willingness amongst those interviewed to change to such standards. The existing legal system may be cumbersome to change and is unlikely to be aided by the indigenous accounting profession. Whilst aid distortion may not be relevant to this accounting reform, there may be dependency on the IOCs to be the first mover and driver of change. Government bodies' intransigence or lack of technical proficiency may lead to a position of agency-related self-interest.

Applying different accounting methodologies

Consideration is now given to evaluating the fiscal impact on Libya's economy of each different accounting methodology - a potentially significant driver of accounting reform. The criteria for selecting the most appropriate method is finding the lowest negative NPV for the Libyan government of expending its cost share paid to the selected IOCs. The findings for each alternative method, based on the eight years' relevant upstream activities, are shown in Table 3.

The first simulation of the costs of oil and gas upstream activities of all IOCs relates to the government adopting either FC or SE for all its operative IOC's. This assumes that the government selects one homogenous method for adoption throughout Libya. Transferring reporting practices from the LPL method to an FC method required changes to the cost figures of intangible G and G, exploratory dry holes, intangible exploratory successful wells and development dry holes. These costs are capitalised under the FC method, having being previously expensed under LPL.

The second simulation relates to costs being altered from the LPL to the SE method. In this permutation, tangible G and G costs, presently capitalised under LPL, require recalculation to be expensed under SE. The figures of intangible exploratory successful wells and development dry hole costs require similar adjustment. Presently these costs, which require to be capitalised under the SE method, are expensed by IOCs, thus exploiting their discretionary choice under LPL of capitalisation or expensing.

Table 3 shows the differential in NPV for the Libyan government of adopting LPL, FC and SE methods. The simulations apply four different interest rates, recognising that interest rates are variable within Libya's economy. Evidently, the most favourable method irrespective of interest rates is the FC method, which provides a positive swing in NPV. This is due to slowing down expensing and reclaiming cash flows from the government. The most significant value saving occurs when interest rates are 20 per cent with a change in NPV of 200.5 million LD (circa £100 million), a swing of 8 per cent in terms of net present value. This relatively insignificant change happens because the majority of upstream costs considered are tangible G and G costs. Under LPL rules these costs are capitalised, leaving management no further discretion to expense this cost (unlike other cost categories). Occurring differences can be explained by IOCs presently opting for immediate expensing, with the associated immediate cost-share payback. This assumes a self-interested agency mode of behaviour, with IOCs now deferring such expensing under FC e.g. intangible G and G costs. Should the IASB opt for a "capitalise and test for impairment approach" (IASB, 2010), this would have no significant impact on the Libyan economy.

If Libya's government requires IOCs to use the SE method it will lose significantly, irrespective of the interest rate. The greatest swing in net present value of 83.72 per cent is realised at a 20 per cent interest rate, representing a value change of -2,099 million LD (circa £1,100 million). These significant changes in value are the result of immediate expensing of previously capitalised costs under LPL, particularly the sizeable tangible G and G costs. The above comparisons should be considered relative to the GDP of Libya's economy as a whole, which the IMF (2012) calculated at £77.4 billion in 2010 (reduced by 2011's political crisis to £30.2 billion). Should the Libyan government select one accounting method over the other, the FC method would be preferable if only on economic grounds.

A further alternative to the Libyan government selecting either SE or FC outright is to accept the current global accounting practice of allowing companies to self-select to use either SE or FC. A simulation on this premise was applied where of the seven IOCs considered two applied FC, and five applied SE methodologies. Table 3 shows that the Libyan government would significantly lose value if it altered to a more globally accepted practice of self-selection. For example, with an interest rate of 10 per cent a loss in value to the Libyan government of 1,965 million LD (circa £1,000 million) would occur representing a shift in NPV of 32.69 per cent in favour of the IOCs. This significant negative impact is caused by the majority of companies considered adopting SE principles in their global practice, which allows for the expensing of the sizeable tangible G and G costs. The adoption of holding companies' accounting practices has a significant negative impact, but less so than outright adoption of the SE method. This is an expected middle position as the dominating SE reporting companies IOCs are counter-balanced by several FC reporting companies.

Table 3 about here

The economic benefit of such alternative systems might explain the apparent intransigence and passivity of the Libyan Government to alter the existing accounting method. Despite the increased potential for management discretion and the LPL's obfuscated logic, the only methodological change which might benefit the Libyan government would be conversion to FC. However, this may seem of inadequate value to warrant change, with greater government reforms warranting preference. In addition it is a hypothetical methodology, not being globally accepted accounting practice at present thus raising legitimacy questions around its adoption. A change to a complete SE methodology, or the methodology congruent with current global practice, would have a significant negative impact on the Libyan economy. Adopting the SE methodology is presently hypothetical and not recommended as global practice by the IASB working group, alleviating the Libyan government of legitimacy concerns. There may be a strong catalyst to adopt the globally accepted practice of IOCs choosing between FC and SE, based on resource dependency or legitimacy concerns. In other contexts these concerns have led to the adoption of international standards and practice (Godfrey et al, 2001). However, these factors have not swayed Libya's government to change. Instead they maintain a system to their economic advantage.

The key constituent of the LPL regulation affecting the simulations is the stance of capitalising tangible G and G costs. This cost category is the most significant expense, which negates the discretionary impact elsewhere in the regulations. This might suggest a stronger governmental understanding on the fiscal impact of the legislation, as capitalising slows the repayments to IOCs. This economic advantage may have been clearly understood in the standard-setting process and explains their maintaining the status quo, despite this law contravening global standards, being conceptually inconsistent with basic accounting concepts by mixing SE and FC practices and increasing agency problems by increased management discretion. It is unclear whether this economically advantageous continuance of LPL practice is by the government's design or indifference.

There has been no lobbying for change by IOCs in Libya despite the potential for IOCs to derive economic benefit, for example by securing standards reflecting global practice. Alternatively, making a case for discretion regarding tangible G and G, the most significant cost category, would provide IOCs the most significant value transfer. This intransigence or weakness in agent influence at the point of reforming the law may still have self-interest at heart. It may be a longer-term strategy to maintain concord and stable relationships for future license negotiations. It may also recognise that in global corporation value terms the alterations in market value are less significant to the IOCs than to the Libyan economy. Further, it might allude to the strength of Libya’s contractual negotiation position in regard to the commercial strength of its mineral reserves (Fattouh and Darbouche, 2010).

The findings indirectly contribute to the existing literature on the impact on market value of using different upstream accounting methods. Prior literature purports that FC companies provide higher market values for shareholders. However, from Table 3 it can be seen that FC companies would lose value in such cost sharing contracts, due to the later payments of certain cost categories. Conversely, SE companies would improve their market value by being allowed to expense some of the items earlier, most notably tangible G and G costs. The signage of value change contrasts with prior literature of higher relative FC values. This does not necessarily conflict with the prior empirical work, but may suggest that the balance sheet and smoothing effects previously suggested are stronger than thought. However, these findings suggest that they are offset by the value transfers implicit in the contractual obligations regarding cost sharing.

A revised diffusion-contingency model

For accounting reform in emerging economies the researchers believe that where the accounting profession is weak on accounting reform there is reliance on government processes. Thus the diffusion-contingency model provides a more useful framework to understand accounting reform in such contexts. Within Libya the model identified a number of stimuli towards reform in addition to elements identified in the previous models. These include the removal of current obfuscation caused by duality of practices globally and locally, the perception that any globalisation would contribute to strengthening a weak accounting profession, and a robust link to the global corporate community. However, these stimuli did not lead to accounting reform with no ostensible movement by any actor towards such change.

The study reveals several new insights from the previous models that might explain the intransigence. The balance of power between the legislative bodies and those they legislate for may dictate that the abundance of resource and the government’s strong negotiating platform silences the IOCs. This is despite the IOCs accounting specialism and capacity to make a strong case. A further variable relevant to accounting reform is the economic implications of any changes. In this case there is no apparent governmental pressure to enforce reform as the impact on the economy by pursuing FC methodologies is not significant. Likewise IOCs may not pursue global or SE methodologies as they are of little significance in the light of their corporate wealth. Figure 1 depicts an adaptation of Luder (1994) and Godfrey et al (2001) diffusion-contingency model as it impacts on this specific Libyan legislation. Of particular note are the two new variables introduced to the model regarding the balance of power and economic consequences, and several other explanatory characteristics of existing variables (all shown in italics).

V. CONCLUSION

Production-sharing contracts are widely used in developing and transitional economies (Pongsiri, 2004) and it is imperative that governments create agreements that will bolster their growing economies. In recent years much attention has been given by such economies to negotiating strong positions under the umbrella of resource nationalism, being protective of their minerals (Fattouh and Darbouche, 2010). However, whilst attention is given to the production-sharing agreement terms it is possible to ignore or underestimate the impact of accounting regulations which may siphon wealth from such economies. This paper has sought to consider Libya as a case study for such value seepage. The apparent management discretion built into the Libyan system could have resulted in this value transfer had it not been for the treatment of tangible G and g costs, which more than counters the increased management discretion. However, the study highlights the apparent lack of rationale to the current LPL legislation resulting in such increased discretion which is differentiated from global upstream oil and gas transaction regulations. Thus whilst Libya has proved over the years its ability to impose tough fiscal terms (Fattouh and Darbouche, 2010), they may unwittingly have failed to apply the same rigor to the regulations governing the accounting of such transactions.

Figure 1 about here

The conceptual logic behind the existing LPL is unclear, whilst the unwillingness to challenge such regulations shows a lack in governmental, professional accounting and academic institutions. There is no apparent explanation for the inconsistency of approach adopted in the LPL in regard to global practice and also conceptually in the treatments of the different cost categories. This is perhaps understandable in the light of an apparently weak normative force in both the accounting profession and academic community. This could be affected by the capacity-building of the accounting profession through education, training and the publication of technical and academic journals (Wallace, 1993; Ahmad and Gao, 2004). Bait El-Mal (1990) suggestion of establishing a committee to issue accounting standards within Libya could be developed, but the effectiveness of the LAAA as a regulatory body in its current form makes this an unlikely solution. There is also a noticeable lack of coercive influence by either the governmental or the IOC communities, as propounded by institutional theory.

The paper, whilst applied to an oil and gas context, allows consideration of the factors impacting on government reform which can be transferred to other accounting areas of both localised accounting standards and the adoption of global accounting practice. Particularly in reviewing accounting reform within emerging economies the revised diffusion-contingency model may assist in an understanding of developments or the lack thereof. The customary application of institutional theory lacks insight into such an environment where neither coercive, mimetic nor normative forces function. Further, circumstances may be similar to the context of this paper where there are economic implications related to the regulations which cannot be ignored. Placing a value on economic consequences through techniques such as simulation modelling may be a catalyst to change or at least to invigorate deliberation.

The more pragmatic approach adopted within this paper could be transferred to other developing economies, with further research giving insight into accounting reform processes within these economies and also to further augment the model. Consideration should be given to the process of evolving such regulations and the roles of fundamental stakeholders including principal(s), agent(s) and other actors. It is also concerning that latent localised standards of uncertain origin or logic may still exist. Further research could be undertaken to ascertain their existence and impact on their economy. The focus could continue specifically on upstream oil and gas activities but could be broadened to other areas of localised interest. The formation of accounting regulation requires a grounded study of policy makers and their social context (Puxty and Willmott, 1987). This study has sought to apply such an approach within an emerging economy such as Libya to provide insight into the power dynamics involved in regulatory framework construction and diffusion. Similar studies in the multi-various developing economies could produce additional valuable insight.

REFERENCES

Abozrida, M. 2000. *Petroleum accounting - its assets scientific and applied*, Arab Development Institute, Cairo.

Ahmed, N.S. and S.S. Gao. 2004. Changes, problems and challenges of accounting education in Libya. *Accounting Education* 13(3): 365-390.

Ali, R. 2005. *Outside view: Libya's oil prospects*. Available at: http://mideastlaw.com/article_outside_view_Libyas_oil_prospects.html, accessed 11/9/2009.

Ashraf, J. and W.I. Ghani. 2005. Accounting development in Pakistan. *International Journal of Accounting* 40(1): 175-201.

Assenso-Okofo, O., M.J. Ali, and K. Ahmed. 2011. The development of accounting and reporting in Ghana. *The International Journal of Accounting* 46: 459-480.

Baker, C.R. 1976. Defects in full-cost accounting in the petroleum industry. *Abacus* 12: 152-158.

Bait El-Mal, M. A. 1990. Survey and Evaluation of the Accounting Principles Applied in Libya. *Journal of Economic Research, National Academy of Scientific Research: The Economic Research Centre* 2(1): 14-26.

Bindemann, K. 1999. *Production-sharing agreements: an economic analysis, World Petroleum Market Report*. Oxford, Oxford Institute of Energy Studies.

Brock, H.R., J.P. Klingstedt and D.M. Jones. 1982. *Accounting for oil and gas producing companies Part 2: amortization, conveyances, full costing and disclosures.* Denton, Texas, North Texas State University,.

Brooks, M.J. 1986. Financial reporting in the oil industry. *Management Accounting* 64(9): 24 - 26.

Boone, J.P. and K.K. Raman. 2007. Does implementation guidance affect opportunistic reporting and value relevance of earnings?. *Journal of Accounting and Public Policy* 26(2): 160-192.

Buzied, M. M. 1998. Enterprise accounting and its context of operation: the case of Libya. PhD Dissertation, Durham University: UK.

Caba-Perez, C., A. Lopez-Hernandez, and D. Ortiz-Rodriguez. (2009). Governmental financial information reforms and changes in the political system: The Argentina, Chile, and Paraguay experience. *Public Administration and Development* 29: 429-440.

Carruthers, B.G. 1995. Accounting ambiguity and the new institutionalism. *Accounting Organisations and Society:* 29(4), 313-328.

Choi, F.D.S. and G.G. Mueller. 1978. *An Introduction to Multinational Accounting,* Englewood Cliff, NJ: Prentice Hall.

Christensen, M. 2002. Accrual accounting in the public sector: the case of the New South Wales Government. *Accounting History* 7(2): 93-124.

Chua , W.F. and S.L.Taylor. 2008. The rise and rise of IFRS: an examination of IFRS diffusion. *Journal of Accounting Public Policy*: 27, 462-473.

Collins, D.W. and W.T. Dent. 1979. The proposed elimination of full cost accounting in the extractive petroleum industry: An empirical assessment of the market consequences. *Journal of Accounting and Economics* 1(1): 3-44.

Cooper, K., S.M. Flory and S.D. Grossman. 1979. New ballgame for oil and gas accounting. *The CPA Journal,* 49(1): 11-17.

Cortese, C.L., H.J. Irvine, and M.A. Kaidonis. 2010. Powerful players: How constituents captured the setting of IFRS 6, a standard for the extractive industries. Accounting Forum 34(2): 76-88.

Dhaliwal, D.S. 1980. The effect of the firm's capital structure on the choice of accounting methods. *The Accounting Review* 55(1): 78-84.

DiMaggio, P.J. and W.W. Powell. 1983. The iron cage revisited: institutional isomorphism and collective rationality in organisational field. *American Sociological Review* 48: 147-160.

DiMaggio, P.J. and W.W. Powell. 1991. *The New Institutionalism in Organisational Analysis*. Chicago,: University of Chicago Press.

Doost, R.K. 1997. Viewpoint: Ethical standards or accounting standards for developing countries: which one should come first?. *Managerial Auditing Journal* 12(9): 506-508.

Eldanfour, I and S. McChlery. 2012. Accounting for oil and gas upstream activities: A study in discretionary reporting behaviour in Libya, *Petroleum Accounting and Financial Management Journal*. July.

Fattouh, B. and H. Darbouche. 2010. North African oil and foreign investment in changing market conditions, *Energy Policy* 38: 1119-1129.

Gallun, R.A., C.J. Wright, L.M. Nichols, and J.W. Stevenson. 2001. *Fundamentals of oil and gas accounting*, 4th edition, PennWell.

Godfrey, A.D., P.J. Devlin, and C. Merrouche. 2001. A diffusion-contingency model for Governmental accounting innovations, *International Comparative issues in Government Accounting*: 279-296.

Gzerna, A. M. (1999). Management Control in Developing Countries: A case study of management control in the Oil industry of Libya, Ph.D. Thesis, The University of Manchester.

Hallett, D. 2002. *Petroleum geology of Libya.* Amsterdam, Elsevier.

Hassan, N. 1998. The impact of socio-economic and political environment on accounting system preferences in developing economies. *Advances in International accounting*1: 43-88.

Hassan, M.K. 2008. The development of accounting regulations in Egypt: legitimising the International Accounting Standards. *Managerial Auditing Journal* 23(5): 467-484.

Healy, P.M., S.C. Myers, and C.D. Howe. 2002. R and D accounting and the trade-off between relevance and objectivity. *Journal of Accounting Research* 40(3): 677-710.

House, J. and K. McGrath. 2004. Innovative governance and development in the new Ireland: Social partnership and the integrated approach. *Governance*17: 1-30.

IASB. 2010. *Extractive Industries, Discussion Paper*, IASB.

IHS Global Insight. 2009. *Economic: Risks*, IHS Global Insight, available at: http://myinsight.ihsglobalinsight.com/servlet/cats?filterID=1154andserviceID=4078andtypeID=15431andpageContent=reportandpageType=ALL, [accessed 03/11/2009].

IMF. 2012. *World Economic Outlook Database*, sourced April 2012, http://www.imf.org/external/pubs/ft/weo/2012/01/weodata/weorept.aspx.

Jacobs, J. 1992. *Systems of Survival: A Dialogue on Moral Foundations of Commerce and Politics*, New York, NY, Random House.

Jensen, M.C and W.H. Meckling. 1976. Theory of the firm: managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics* 3(4): 305-360.

Johnston, D. 2005. Impressive Libya licensing round contained rough terms, no surprises, *Oil and Gas Journal*, 18.

Joshi, P.L. 2001. The international diffusion of new management accounting practices: the case of India. *Journal of International Accounting, Auditing and Taxation* 10: 85-109.

Justesen, L and Mouritsen, J. 2011. Effects of actor-network theory in accounting research, *Accounting, Auditing & Accountability Journal*, 24 (2), 161 – 193.

LAAA. 2008. *Libyan Accounting Standards.*

Libyan State, Law No. 25 of 1955. *Petroleum Law*. April 1955.

Libyan State, Law No. 116 of 1973. *The Official Gazette, to Organise the Accountancy Profession in Libya.* February 1974.

Lilien, S. and V. Pastena. 1981. Intra-method comparability: the case of the oil and gas industry". *The Accounting Review* 56(3): 690-703.

Luder, K. 1992. A contingency model of governmental accounting innovation in the political administrative environment, *Research in Governmental and non-profit Accounting* 7: 99-127.

Luder, K. 1994. The contingency model reconsidered: experiences from Italy, Japan and Spain. *Perspectives on Performance Measurement and Public Sector Accounting,* E. Buschor and K. Schedler (eds.), Haupt, Berns, 1-15.

Mahmud, M.B. and A. Russell. 1998. Survey of Libyan oil and gas accounting practice. *Petroleum accounting and financial management journal* 17(3): 117-160.

Mir, M.Z. and A.S. Rahaman. 2005. The adoption of international accounting standards in Bangladesh, an exploration of rationale and process, *Accounting, Auditing and Accountability Journal* 18(6): 816-841.

Mirghani, M. 1998. The development of accounting standards in the kingdom of Saudi Arabia: an international accounting standards perspective, *Advances in In international Accounting* Supplement 1: 195-206.

Murdoch, B. and P. Krause. 2008. An investigation of the earnings quality of the successful efforts and full costing methods. *Petroleum Accounting and Financial Management Journal* 27(3): 99-111.

Ouda, H. 2008. Towards a generic model got Government sector reforms: The New Zealand experience. *International Journal of Governmental Financial management* 8(2): 91-115.

Otman, W. and M. Bunter. 2005. The Libyan petroleum industry in the twenty first century: the upstream, midstream and downstream handbook, *Alexander's Gas and Oil Connections*, Limbach.

Parboteeah, K., J. Cullen, B. Victor, and S. Tomoaki. 2002. National culture and ethical climates: A comparison of U.S. and Japanese accounting firms, *Management International Review* 45: 459-480.

Pongsiri, N. 2004. Partnerships in oil and gas production sharing contracts, *International Journal of Public Sector Management* 17(5): 431-442.

Puxty, A.G. and H.C. Willmott. 1987. Modes of regulation in advanced capitalism: locating accountancy in four countries, *Accounting, organisations and Society* 12(3): 273-291.

Rahman, A.R., M.H.B. Perera, and G.D. Tower. 1994. Accounting harmonisation between Australia and New Zealand: towards a regulatory union. *International Journal of Accounting Education and Research* 39: 316-333.

Samuels, J. M. 1993. International accounting standards in The Third World: A synthesis of six articles. *Research in Third World Accounting* Vol.2: 19-25.

Scott, W.R. 1995. *Institutions and Organisations: Foundations for Organisational Science,* London, Sage.

SEC. 1978. *Accounting Series Release No. 253.*

Shareia, B. 2006. The role of accounting systems in decision making, planning and control in a developing country: the case of Libya, PhD Dissertation, University of Wollongong: Australia.

Sunder, S. 1976. Properties of accounting numbers under full costing and successful-efforts costing in the petroleum industry, *The Accounting Review* 51(1): 1-18.

Upping, P. and J. Oliver. 2011. Accounting change model for the public sector: adopting Luder’s model for developing countries, *International review of business research papers* 7(1): 364-380.

Vickers, J. and G. Yarrow. 1988. Regulation of privatised firms in Britain, *European Economic Review* 32: 465-472.

Waddams, F.C. 1980. *The Libyan Oil Industry.* London, Croom Helm Ltd.

Wallace, R.S.O. 1993. Development of accounting standards for developing and newly industrialised countries. *Research in Accounting in Emerging Economies* 2: 121-165.

Wei, Y.L., H. Song, and P. Romilly. 2001. Endogenous innovation growth theory and regional income behaviour in China, *Journal of International Development* 13: 153-170.

Wright, P., S.P. Ferris, A. Sarin, and V. Awasthi (1996). The impact of corporate insider, blockholder, and institutional ownership on form risk taking, *Academy of Management Journal* 39: 441-463.

Wright, C.J. and R.A. Gallun. 2008. *Fundamentals of oil and gas accounting*, 5th edition, United States, Penn Well Corporation.

Yee, K.K. 2006. Capitalization of costs and expected earnings growth. *European Accounting Review* 15(4): 565-58.

Table 1

The treatment of upstream costs under FC, SE and LPL.

Oil and gas upstream costs	**FC**	**SE**	**LPL**
Tangible G and G costs	Capital	Expense	Capital
Intangible G and G costs	Capital	Expense	Capital or expense
Exploratory dry hole costs (within successful fields)	Capital	Expense	Capital or expense
Tangible exploratory successful wells	Capital	Capital	Capital
Intangible exploratory successful wells	Capital	Capital	Capital or expense
Development dry hole costs	Capital	Capital	Capital or expense
Development successful wells	Capital	Capital	Capital
Production cost	Expense	Expense	Expense

Source: Adapted from Wright and Gallun (2008), Libyan Petroleum Law No.25 and Libyan Petroleum Regulation No.9 (LPL, 1955).

Table 2
Stakeholders interviewed.

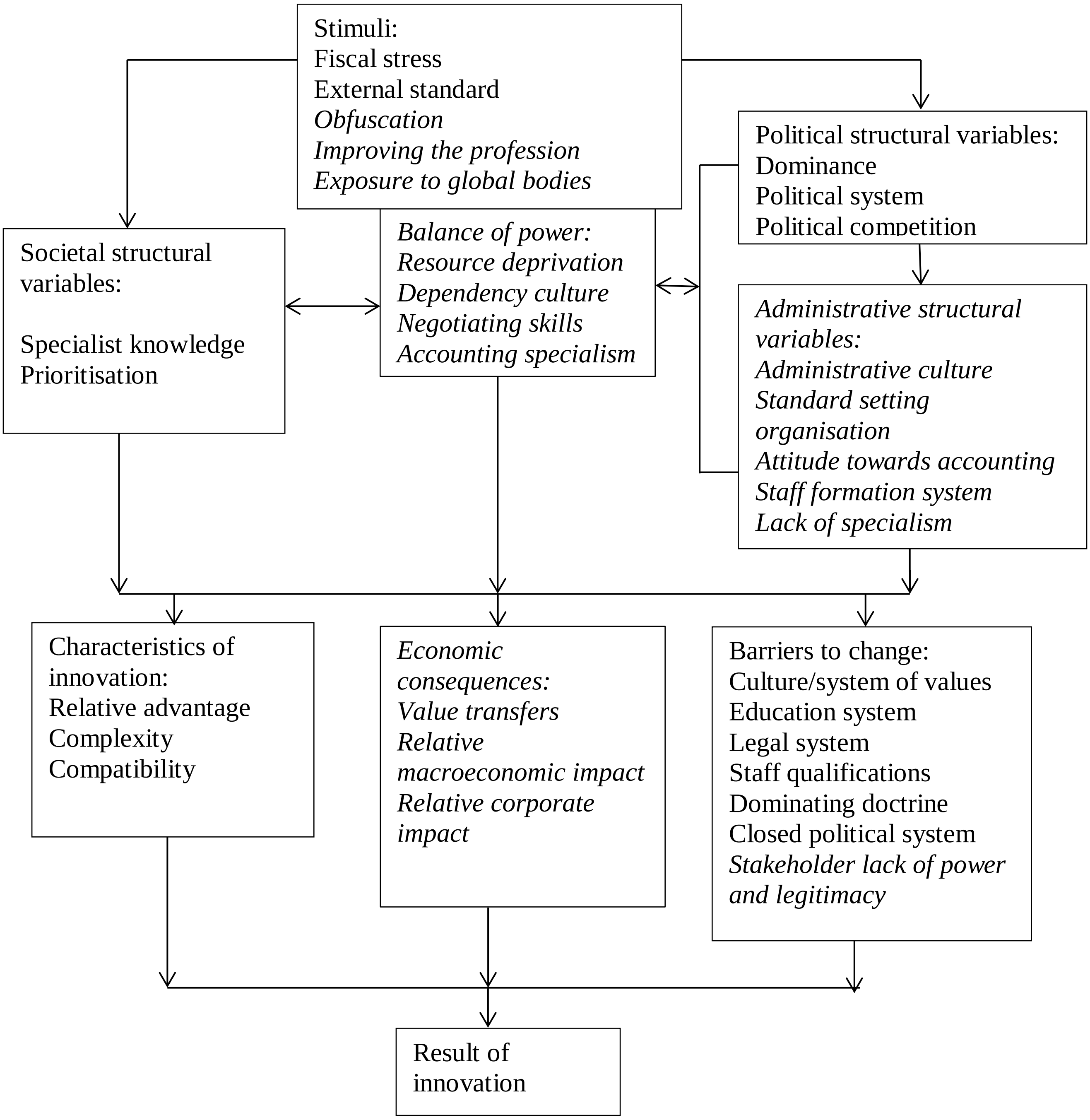
Stakeholder	Reason for selection
NoCorp Exploration Department	Responsibility for oil and gas companies in the exploration stage
NoCorp Financial Analysis Department	Responsibility for financial transactions with IOCs
General People's Committee for Inspection and Control (GPCIC)	Government auditing section including oil and gas sector
General People's Committee for Planning and Finance (GPCPF)	Government section responsible for revenue collection including oil and gas sector
Academic staff in Finance	Education including accounting and accounting for the oil and gas sector
Libyan Petroleum Institute	Training Libyan accountants

Table 3

Net present values of impact on Libyan economy comparing the LPL with FC and SE methodologies (Figures in Libyan Dinar where Libyan Dinar = £0.50).

Interest rate	NPV_{FC} vs. NPV_{LPL}	Significance of change in selecting FC v LPL position	NPV_{SE} vs. NPV_{LPL}	Significance of change in selecting SE v LPL position	NPV_{HOLD} vs NPV_{LPL}	Significance of change in selecting holding company v LPL position
5%	+173,755,990	1.75%	-2,115,064,136	-21.25%	-1,618,353,491	-16.26%
10%	+216,525,513	3.60%	-2,577,720,676	-42.88%	-1,965,258,233	-32.69%
15%	+215,483,224	5.67%	-2,432,333,121	-63.97%	-1,846,271,804	-48.56%
20%	+200,514,275	8.00%	-2,099,117,767	-83.72%	-1,585,256,634	-63.23%

Figure 1
Diffusion contingency model for government accounting: adapted from Luder (1994) and Godfrey et al (2001).



MAF010 Missing Persons from the Population of Unit Trust Investors

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Abstract

Collective investment schemes ('unit trusts') are a popular vehicle to research owing to the vast data available on its participants. However, an inherent sampling bias is present in these populations of investors. This paper analyses survey responses from 416 individuals in an attempt to determine the characteristics of individuals who are not invested in unit trusts and reports the lack of younger investors and investors with lower self-assessed levels of financial knowledge within this grouping. Furthermore, the reasons for not investing in unit trusts appear to be a combination of limited resources, lack of understanding and the preference to invest in alternative ways.

The preference for equity only unit trusts was also assessed, revealing the majority of respondent's avoiding this fund choice are doing so based on the decisions of someone investing on their behalf, whilst the heightened risk of this fund type also came into play.

Keywords: Collective investment schemes, unit trusts, equity, young investors, financial knowledge, risk aversion

INTRODUCTION

With collective investment schemes ('unit trusts') being an increasingly popular mode of investing, often accompanied with vast amounts of researchable data on their client base, the characteristics and behaviour of unit trust investors has attracted much research over time. However, this research contains an inherent limitation in its sampling bias. Whilst this does not necessarily limit the results pertaining to such research, it is important to understand this limitation. The purpose of this paper is to highlight any potential 'missing persons' from such data on unit trust investors.

LITERATURE REVIEW

Unit trusts explained

A collective investment scheme ('unit trust') can be defined as "the pooling of investor's funds into a collective investment" (Correia et al. 2010). These funds are then invested by fund managers in shares, bonds, money market instruments and other assets allowing investors a proportional share of the underlying assets (Van Wyk et al. 2012).

Unit trusts are often seen as an effective and simple way of saving money, whilst obtaining a diversified investment portfolio concurrently and offer some advantages to the investor, such as:

- Unit trusts are easy to access and exit: there's no minimum investment period and large sums are not required to be invested in them (Sanlam Investments 2014).

- The money is generally safe: Protection is offered by the regulations of the Collective Investment Schemes Control Act (CISCA) and the fund manager cannot access the cash owing to the legal structure thereof (Cameron 2014).
- It assists in diversifying the investors' investments.
- Professional fees are relatively low given the level of active management.
- There is complete transparency: Prices are published daily and performance figures are publicly available (Cameron 2014).

Growth in the industry attracting research

The large growth in the unit trust industry has made the area an attractive one to research. The reason for this growth in the industry has been cited to be combination of investors' degree of wealth and education, supply-side competition, and the relaxation of laws and industry regulations (Khorana et al. 2005). Much research ranging from the characteristics of investors to their decision making has been completed and published.

Assessing 11 817 individual investors at a South African investment house, Willows and West (2015) found women to earn a higher return on a risk-adjusted basis, owing to the heightened trading activity of men. These results were supported by Marszalek (2014) and by Junor (2014). However, Junor's (2014) results were only confirmatory when investigating a period before the financial crisis, but not after the financial crisis. These results were hypothesised by Junor (2014) to be owing to the heightened presence of male investors in riskier funds.

Dorn and Huberman (2005) surveyed unit trust investors and noted self-reported risk aversion was the greatest factor explaining investor behaviour, while Wang (2011)'s online survey revealed income, gender, knowledge and experience were important influencers on the younger generations' investment behaviour. Capon et al. (1996) investigated how investment decisions were made by unit trust investors and Alexander, Jones and Nigro (1998) documented the need for improved financial literacy of unit trust investors. These studies reflect a small representation of the literature on unit trust investors.

'Who' are these investors

According to modern finance theory, when investors make investment decisions they look at the risk, return and the covariance of returns with other assets in their portfolio (Naidoo 2014). However, Capon, Fitzsimons and Prince (1996) state this to be a "naïve vehicle for understanding investment decisions" as there are more subtle factors that influence investment decisions. Understanding these factors would assist in identifying the characteristic of investors choosing unit trusts as their preferred method of investing.

Willows (2013) found that close to 40% of the population of individual unit trust investors at a South African investment house were over the age of 60 years and noted an increased bias towards older participants amongst Willows (2013)'s population. Using a smaller population of investors at a different South African investment house, Junor (2014) found the largest proportion (16%) of the population to be between 60 and 70 years of age. An increasing number of investors were noted as the age groupings increased, up until 70 years of age. This research suggest a bias towards older investors amongst unit trust investors.

Looking at gender, neither Willows and West (2015), Marszalek (2014) nor Junor (2014) found any material differences in the representation of each gender within the sample. This suggests less of a gender bias amongst unit trust investors.

Assessing the financial knowledge of unit trust investors, Capon, Fitzsimons and Prince (1996)'s survey based study revealed two groups: those who were highly knowledgeable and informed, and those who were naïve. Only 25% of respondents were found to be familiar with their unit trust investment style and merely 27.7% were aware of the domestic vs. international nature of their investments (Capon, Fitzsimons & Prince, 1996). Financial illiteracy is widespread with women being less financially knowledge than men, and the young and old being less financially knowledgeable than the middle-aged (Lusardi & Mitchell 2011).

Opting out

In an attempt to understand the characteristics of investors choosing to invest in unit trusts, awareness of the disadvantages to investing in a unit trust must be understood. These include:

- Investments are generally medium to long-term investments, which does not always suit all investors.
- Some limitations are imposed as fund managers have to follow investment strategies stated on the prospectus.
- There are certain costs in addition to what would be payable if an investor were investing directly (de Lange 2009).

These barriers could potentially deter investors that have alternative investment strategies in mind, are aware of the costs involved, or are looking for more short term market exposure. Furthermore, the significant losses that were suffered in 2008 and 2009 are still fresh in the minds of investors (Lamprecht 2013), introducing potentially heightened risk aversion amongst investors. If unit trusts are deemed to be a risky type of investment, they could be viewed as an unsuitable investment vehicle by risk-averse investors.

Conclusion

The unit trust industry is a growing one that has attracted much research over the years. Much literature has been published on the characteristics and behaviour of unit trust investors, revealing notable results on the financial knowledge and decision making processes of these investors. However, studies have revealed potential biases in these populations, particularly towards older participants. These need to be considered when concluding on the results of these research pieces.

DATA AND METHODOLOGY

Research questions

The literature review suggests that unit trust investors are potentially older investors and that the deemed risk or cost of these investment vehicles might be barriers to investing in them. The research questions for this paper are as follows:

1. What are the characteristics of individuals not invested in unit trusts?

2. What are the reasons that these individuals do not invest in unit trusts?

These same two research questions will be repeated to focus on South African equity only unit trusts as well.

Research Strategy

An online survey using Qualtrics was developed and cognitively tested by 10 people to evaluate the wording of the survey, its design and to help ensure the completeness of responses received from participants (Presser et al., 2004; Willimack et al., 2004). The suggestions from this testing were then analysed and, where appropriate, changes were made to update the original questionnaire.

Respondents were asked if they directly invest (i.e. not via a pension fund, retirement fund or provident fund) in a South African unit trust. If they selected ‘no’, the reasons therefore were garnered. Further questions discerning socioeconomic characteristics of the respondents as well as their self-assessment of their financial knowledge were also obtained. The self- assessment of financial knowledge was used as a proxy for actual measured financial knowledge, as Lusardi and Mitchell (2007) found the one to be positively correlated to the other.

Lastly, respondents were also asked if they were directly invested in South African equity only unit trusts i.e. a unit trust which only invests in shares of South African companies. The reason for this was to add to current literature on the risk preference of unit trust investors. Once again, if ‘no’ was selected, the reasons therefore were interrogated.

Incremental sampling was used to obtain as many responses to the survey as possible and to improve the robustness of the results. The first sample was staff members, both academic and admin staff, at the University of Cape Town. The next sample included other universities that agreed to partake in the study, namely: Stellenbosch University, the University of the North West (NWU) and the Nelson Mandela Metropolitan University (NMMU). Ethical clearance was obtained at all participating universities.

Research Process

In total, over 6 000 participants were contacted at the participating universities via email with a link to the online survey. An inherent bias is always present when employing a sampling method, however, although this sample was limited to university employees, the reach was across academic and admin staff allowing a broad spread in the sample, both in education, age and income levels.

The total number of participants that completed the survey satisfactorily for purposes of statistically testing was 416. The breakdown of these 416 respondents by socioeconomic characteristics is shown in Table 1. Racial groupings are shown as presented in the survey, with 'Coloured' respondents being defined as those of mixed-race descent.

Table 1: Breakdown of total sample by socioeconomic characteristics

	20-30 yrs	**31-40 yrs**	**41-50 yrs**	**51-60 yrs**	**60+ years**	
Age (n=376)	33% (n=123)	24% (n=89)	17% (n=63)	17% (n=65)	10% (n=36)	
	Male	**Female**				
Gender (n=416)	51% (n=211)	49% (n=205)				
	Black	**White**	**Coloured**	**Indian**	**Other**	**Declined**
Race (n=416)	16% (n=68)	71% (n=295)	5% (n=19)	2% (n=10)	1% (n=5)	5% (n=19)
	English	**Afrikaans**	**isiZulu**	**isiXhosa**	**Other**	
Language (n=416)	31% (n=129)	53% (n=222)	2% (n=9)	2% (n=8)	12% (n=48)	
	Single	**Married**	**Separated**	**Divorced**	**Widowed**	**Living with partner**
Marital (n=416)	33% (n=138)	54% (n=226)	0% (n=2)	4% (n=18)	2% (n=7)	6% (n=25)
	No children	**Children**				
Children (n=416)	50% (n=209)	50% (n=207)				
	Poor	**Fair**	**Good**	**V. Good**	**Excellent**	
Self-Assessment (n=401)	30% (n=122)	42% (n=170)	19% (n=76)	5% (n=22)	3% (n=11)	

Not all respondents provided their date of birth (age) and their self-assessment rating of their financial knowledge, explaining their sampling totals of less than 416. For *statistical testing going forward, smaller subsets of racial and language groupings will be combined. Furthermore, marital status will be divided into two groups i.e. 'married' (including 'married' and 'living with a partner') and 'single' ('single', 'separated', 'divorced' and 'widowed').*

As the socioeconomic characteristics of the entire population of 6 000 was unavailable, it is not possible to weight the sampled population. However, the noticeable majority of 'White', 'Afrikaans', 'Married' respondents is apparent. Furthermore, there appears to be more younger respondents than older respondents and most respondents rate themselves as having only 'fair' or 'poor' financial knowledge. No noticeable differences amongst the genders or the presence of children are noted. These findings will be borne in mind in making conclusions going forward.

RESULTS

What are the characteristics of individuals not invested in unit trusts?

Of the 416 respondents, 271 (65%) were not invested in unit trusts. A two-stage multivariate regression was performed to determine whether there are any causal links influencing non- investment in such a vehicle. The results are shown in Table 2. This analysis was done over two stages, moving from an OLS regression to a logit model. Both models were done using robust standard errors to account for heteroskedasticity.

Table 2: Characteristics of individuals that don't invest in unit trusts

Variables	Stage 1: OLS	Stage 2: Logit
Age	-0.0462*	-0.209*
	(0.0260)	(0.119)
Gender	0.0269	0.149
	(0.0530)	(0.254)
Marital	-0.00240	-0.0126
	(0.0182)	(0.0932)
Children	-0.0554	-0.275
	(0.0673)	(0.317)
Financial knowledge	-0.0846***	-0.397***
	(0.0262)	(0.125)
Race: Black	0.0220	0.113
	(0.100)	(0.507)
Race: Coloured	-0.00411	-0.0311
	(0.120)	(0.586)
Race: Other	-0.103	-0.487
	(0.0917)	(0.412)
Language: English	0.143**	0.669**
	(0.0570)	(0.277)
Language: African and other	0.170*	0.854*
	(0.0992)	(0.512)
Constant	0.896***	1.803***
	(0.0787)	(0.397)
Observations	363	363
R-squared	0.093	
Preudo R2		0.0738

*This table reports the coefficients of the effect of the independent variables on not being invested in a unit trust. Robust standard errors are reported in the parenthesis; *** p<0.01,*
*** p<0.05, * p<0.1. The decreased sample sizes are as a result of certain non-responses (age and self-assessment rating).*

It appears that a younger respondent has a higher probability of not being invested in a unit trust. This is supported by Willows and West (2015) and Junor (2014) which showed that the majority of investors in the South African investment houses investigated were above the age of 60 years. This finding could be a limitation of funds amongst younger respondents, amongst other reasons which are further assessed in Table 3.

Significant at the 1% level is the self-assessment of financial knowledge. The lower this self- assessment, the higher the probability of not being invested in a unit trust. Lusardi and Mitchell (2007) found a strong a positive correlation between financial knowledge and self-assessments of financial knowledge, which implies that limited to poor financial knowledge decreases unit trust investment.

Lastly, English, African and other language speaking respondents are less likely to be invested in unit trusts than Afrikaans speaking respondents, suggesting potential cultural differences in the preference for this vehicle of investment. With African respondents particularly, this result might be owing to lack of transformation in South Africa and having less disposable income as a result of that.

What are the reasons that these individuals do not invest in unit trusts?

The 271 respondents who were not invested in unit trusts were asked the reasons therefore. Seven pre-determined options were given that each respondent could select along with an additional block for ‘other’ where they could input their own reason. The reasons given are shown in Table 3. Respondents were allowed to select more than one reason.

Table 3: Reasons for not investing in a unit trust

Invest in alternative ways	Returns are not sufficient	Risk is too high	Management fees are too high	Don’t have enough money	Someone else invests on my behalf	Don’t understand what unit trusts are
42% (n=114)	7% (n=20)	7% (n=18)	6% (n=17)	30% (n=80)	15% (n=42)	27% (n=74)

Some of the ‘other’ reasons cited by respondents were “eager to learn on my own” and “I trade myself” as well as more than one respondent stating “I don’t have enough knowledge about them”. Other respondents stated that they “do not have the time” and “do not know which to choose”. This latter reason is supported by Agnew and Szykman (2005) who found that individuals suffer from information overload when too many options are given.

Table 3 shows that the majority of respondents invest in alternative ways. This is promising: that investments are being made, but with the lack of information on the nature of these investments it is undeterminable whether these are more advantageous investments. A fair number of respondents felt that they 'don't have enough money' and 'don't understand what unit trusts are'. The former shows a resource limit or the perception of limited resources by respondents, while the latter reflects a lack of knowledge which could be rectified. From these findings it would be worthwhile obtaining some form of understanding as to the nature of these respondents who don't understand unit trusts, as well as those who invest in alternative ways (as this grouping is the majority reason). These results are shown in Table 4 over two stages, moving from an OLS regression to a logit model. Test 2 was done using robust standard errors to account for heteroskedasticity.

Table 4: Influencers of select reasons for not investing in unit trusts

	Test 1: Invest in alternate ways		Test 2: Don't understand what unit trusts are	
Variables	**Stage 1: OLS**	**Stage 2: Logit**	**Stage 1: OLS**	**Stage 2: Logit**
Age	0.0597*	0.285*	-0.00264	0.00260
	(0.0333)	(0.163)	(0.0301)	(0.209)
Gender	0.0174	0.0705	0.0137	0.0567
	(0.0652)	(0.313)	(0.0623)	(0.392)
Marital	0.0311	0.151	-0.00918	-0.0427
	(0.0248)	(0.117)	(0.0234)	(0.115)
Children	0.0428	0.206	-0.135*	-0.905
	(0.0857)	(0.416)	(0.0817)	(0.562)
Financial knowledge	0.158***	0.789***	-0.178***	-1.560***
	(0.0333)	(0.182)	(0.0308)	(0.380)
Race: Black	-0.425***	-2.201***	0.259**	2.064***
	(0.125)	(0.692)	(0.110)	(0.782)
Race: Coloured	-0.179	-0.867	0.109	0.830
	(0.144)	(0.701)	(0.139)	(0.853)
Race: Other	-0.164	-0.857	-0.0991	-0.614
	(0.119)	(0.607)	(0.0850)	(0.753)
Language: English	0.0106	0.0609	-0.00731	-0.0733
	(0.0725)	(0.350)	(0.0653)	(0.417)
Language: African and other	0.302**	1.546**	0.0166	-0.206
	(0.126)	(0.681)	(0.108)	(0.720)
Constant	-0.0617	-2.717***	0.674***	1.840***
	(0.0997)	(0.534)	(0.0998)	(0.669)
Observations	235	235	235	235
Adj R-squared	0.1499		0.209	
Preudo R2		0.1491		0.2261

*This table reports the coefficients of the effect of the independent variables on reasons for not being invested in a unit trust. Standard (test 1) and robust standard (test 2) errors are reported in the parenthesis; *** p<0.01, ** p<0.05, * p<0.1.*

Test 1 reveals that being older in years appears to increase the probability of investing in alternative ways. Increased self-assessment of knowledge (linked to actual increased financial knowledge (Lusardi & Mitchell 2007)) shows a positive effect, implying that this financial knowledge might move respondents away from unit trusts. Black respondents and those respondents whose primary language is isiXhosa, isiZulu or other i.e. not English or Afrikaans appear less likely to invest in alternative ways. This suggests an alternative reason for non- investment in unit trusts amongst this cohort of respondents.

Upon analysis of respondents who do not understand what unit trusts are, Black respondents, in comparison to White respondents, are more likely to lack this understanding. This is statistically significant at the 5% level and reveals an alternative reason for non-investment in unit trusts as was made apparent in Test 1. This same explanation is not seen for African and other language respondents.

The noticeable racial divide might stem back to the Apartheid years in South Africa, where many non-White South Africans might have experienced sub-standard schooling, or grew up in households with parents who might never have had a formal qualification or exposure to instruments of a financial nature. As financial knowledge is often acquired over a period of time, this might have been a disadvantage to Black respondents.

As expected, self-assessment of financial knowledge is negatively correlated at the 1% level to the lack of understanding what unit trusts are. Furthermore, the OLS regression shows that not having children might influence this lack of understanding suggesting that having dependent children might influence the understanding (or desire to understand). However, this effect is only seen at the 10% level and is not present in the logit model.

Conclusion

The majority of respondents surveyed were not invested in unit trusts and a causal link was found between low self-assessments of financial knowledge and the lack of investment therein. The majority of these non-investors stated that they were invested in alternative ways, but two-thirds also claimed that they did not have enough money or did not understand what unit trusts were. If the 'alternative investments' that these respondents are invested in are retirement funds or similar, the reasoning of not having enough money might be indicative of them maximising their contributions to those retirement funds in order to benefit from the associated tax advantages.

The lack of understanding was found to more probable amongst Black respondents in comparison with White respondents and was negatively correlated with self-assessments of financial knowledge. Investing in alternative ways was positively associated with higher self- assessments of financial knowledge and age.

What are the characteristics of individuals not invested in South African equity only unit trusts?

Of those respondents that were invested in unit trusts (n=145), further enquiry was made as to whether any of those unit trusts were South African equity only unit trusts. 5 respondents had non-responses, but of the remaining 140 respondents, 63 answered negatively. A multivariate regression was performed over two stages, moving from an OLS regression to a logit model, to determine if there were any causal links attached to not investing in South African equity only unit trusts (barring global exposure funds, these funds are generally associated with higher risk). These results are shown in Table 5. The test was limited to a maximum of 5 independent variables only, owing to the reduced sample size for this test.

Table 5: Logistic regression of not investing in South African equity only unit trusts

Variables	Stage 1: OLS	Stage 2: Logit
Age	0.0709*	0.312*
	(0.0383)	(0.169)
Gender	-0.134	-0.579
	(0.0971)	(0.415)
Marital	-0.0589	-0.263
	(0.0393)	(0.178)
Children	-0.160	-0.690
	(0.103)	(0.449)
Financial knowledge	-0.0460	-0.202
	(0.0482)	(0.207)
Constant	0.634***	0.591
	(0.152)	(0.652)
Observations	128	128
Adj R-squared	0.0338	
Preudo R2		0.0541

*This table reports the coefficients of the effect of the independent variables on not investing in a South African equity only unit trust. Standard errors are reported in the parenthesis; *** p<0.01, ** p<0.05, * p<0.1.*

Table 5 shows that the older a respondent is, the less likely they are to be invested in a South African equity only unit trust. This might imply heightened risk aversion from older respondents. This implication is supported by Willows (2013)'s finding that older participants amongst a sample of 19,021 individual investors had lower variances in return, suggesting heightened risk aversion.

What are the reasons that these individuals do not invest in South African equity only unit trusts?

The 63 respondents who answered negatively were asked their reasons therefore. Once again, five predetermined options were given with the option of selecting 'other' and providing their own reason. Respondents were allowed to select more than one answer. The breakdown of responses is shown in Table 6.

Table 6: Reasons for not investing in a South African equity only unit trust

Prefer to invest in foreign equity	Risk is too high	Management fees are high	Returns are not sufficient	Someone else invests on my behalf
11% (n=7)	25% (n=16)	6% (n=4)	13% (n=8)	57% (n=36)

Some of the 'other' reasons cited were that respondents "prefer to invest in a mixed portfolio" or have a "spread of investments", as well as limitations from "pension pay-out investment rules".

The majority of respondents stated that 'someone else invests on my behalf' which shows limited push-back in dictating where their personal funds should be held, but rather relying on the advice of their financial adviser. 25% of respondents not invested in South African equity only unit trusts stated that the 'risk is too high'. Owing to the small sample size (63) of unit trust investors that are not invested in South African equity only unit trusts, analysis thereof is limited to the descriptive statistics performed in Table 6.

Conclusion

Less than half of those respondents invested in unit trusts, were invested in South African equity only unit trusts. This non-investment was found to be influenced by the age of the investor, suggesting heightened risk aversion amongst older respondents. The majority of the investors not invested in unit trusts stated that this was owing to someone else investing on their behalf, whilst a quarter stated that the risk was too high.

SUMMARY, RECOMMENDATIONS AND CONCLUSION

Unit trusts are widely available in South Africa at a number of differing investment houses. Furthermore, an array of different portfolios of unit trusts are also available. Despite this, the majority of respondents surveyed were not invested in unit trusts owing to their decision to invest elsewhere. Furthermore a lack of understanding of what unit trusts are was also found to be influential, particularly amongst Black respondents and those respondents with low self- assessments of financial knowledge. This highlights the need to educate investors on the workings of unit trusts and the potential benefit thereof to different cohorts of investors.

Choosing to not invest in South African equity only unit trusts was found to be the decision of a third party and not the individual respondents themselves. This is concerning, as investors should be aware of their advisors reasoning for investing in or not investing in different portfolios, even if they have delegated that decision to someone else. Furthermore, the heightened risk of investing in equity was substantiated, albeit it not being more risky than global equity funds.

Researchers analysing the characteristics or behaviour of unit trust investors should be aware that their sample might be lacking in younger investors and investors with low levels of financial knowledge, as inferred by their self-assessment thereof.

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References

Agnew, J.R. & Szykman, L.R., 2005. Asset Allocation and Information Overload: The Influence of Information Display, Asset Choice, and and Investor Experience. *The Journal of Behavioral Finance*, 6(2), pp.57–70.

Alexander, G.J., Jones, J.D. & Nigro, P.J., 1998. Mutual Fund Shareholders: Characteristics, Investor Knowledge, and Sources of Information. *Financial Services Review*, 7, pp.301– 316.

Cameron, J., 2014. Five Great Reasons to Invest in Unit Trusts: Wealth Building on a Limited Income. *www.biznews.com*, April.

Capon, N., Fitzsimons, G.J. & Prince, R.A., 1996. Mutual Fund Investment Decisions. *Journal of Financial Services Research*, 10(1), pp.59–83.

Correia, C. et al., 2010. *Financial Management* 7th ed., Cape Town: Juta & Company. Dorn, D. & Huberman, G., 2005. Talk and Action: What Individual Investors Say and What They Do. *Review of Finance*, 9(4), pp.437–481.

Junor, W., 2014. *Men are from Investment Mars and Women are from Investment Venus*. The University of Cape Town.

Khorana, a, Servaes, H. & Tufano, P., 2005. Explaining the Size of the Mutual Fund Industry Around the World. *Journal of Financial Economics*, 78(1), pp.145–185.

Lamprecht, I., 2013. The Risk of Losing Money in a Unit Trust. *www.moneyweb.co.za*, November.

De Lange, I., 2009. Daily Equity Report. *www.seedinvestments.co.za*, January.

Lusardi, A. & Mitchell, O.S., 2007. Financial literacy and retirement planning: new evidence from the Rand American Life Panel. *CFS Working Paper*, 33, pp.1–32.

Lusardi, A. & Mitchell, O.S., 2011. Financial literacy around the world: an overview. *Journal of Pension Economics and Finance*, 10(04), pp.497–508.

Marszalek, B., 2014. *Invest Like A Woman: An Analysis of Investment Performance in South Africa based on Gender*. The University of Cape Town.

Naidoo, S., 2014. *Gender Differentials Amongst Investors in Emerging Markets: A Review of Literature*. The University of Cape Town.

Presser, S. et al., 2004. Methods for Testing and Evaluating Survey Questions. *Public Opinion Quarterly*, 68(1), pp.109–130.

Sanlam Investments, 2014. Why Unit Trusts? *www.sanlamintelligence.co.za*, March. Wang, A., 2011. Younger Generations' Investing Behaviors in Mutual Funds: Does Gender

Matter? *The Journal of Wealth Management*, 13(4), pp.13–23.

Willimack, D.K. et al., 2004. Evolution and Adaptation of Questionnaire Development, Evaluation, and Testing Methods for Establishment Surveys. In S. Presser et al., eds. *Methods for Testing and Evaluating Survey Questionaires*. New York: Wiley.

Willows, G., 2013. Differential Investment Performance in South Africa Based on Age. In *The 4th International Conference on Business and Economics*. pp. 1–10.

Willows, G. & West, D., 2015. Differential Investment Performance In South Africa Based On Gender. *International Business & Economics Research Journal*, 14(1), pp.221–236.

Van Wyk, K., Botha, Z. & Goodspeed, I., 2012. *Understanding South African Financial Markets* 4th ed., Van Schaik Publishers.

MAF011 Student Endogenous Factors that Impact on Performance in Advanced Management Accounting: an Exploratory Study

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Abstract

This study investigates the relationship between student endogenous factors and academic performance in advanced management accounting, offered as part of a post graduate diploma in accounting (PGDA) accredited by the South African Institute of Chartered Accountants (SAICA). A sample consisting of all students who were registered for advanced management accounting at the University of the Western Cape between 2009 and 2013 is used in this study, which is largely based on regression methodologies. It is found that English as first or subsequent language has no statistically significant impact on performance in management accounting at undergraduate level. However, at PGDA level, where application of concepts to unfamiliar situations is required, students whose first language is English outperformed their counterparts. In addition, grades in the prerequisite final year undergraduate management accounting module were found to be statistically significant in predicting performance in PGDA advanced management accounting. Finally, students who attempted the PGDA advanced management accounting for the first time, as well as students who obtained a higher overall final high school grade, were found to outperform their counterparts. The above findings could be used to inform the selection process, as well as to identify students possibly at risk of underperforming, with a view to proactive interventions.

Keywords: Student Endogenous factors, Performance, Advanced Management Accounting, the South African Institute of Chartered Accountants (SAICA), Post Graduate Diploma in Accounting (PGDA)

1. Introduction

The consistently low average of marks in the post-graduate module, Advanced Management Accounting 751 (MAC 751), offered at the University of the Western Cape (UWC) as part of the post-graduate accounting programme (PGDA) accredited by the South African Institute of Chartered Accountants (SAICA) indicated an area worthy of further investigation. Specifically, for the academic years from 2009 including 2013 inclusive, the average mark[18] for MAC 751 was 48.8% (MAS, 2014), and the average pass rate[19] 49.9%. The benchmark of

[18] For the purposes of this study, the average mark for MAC 751 is calculated as the final marks obtained by all students registered for the specific module divided by the number of students registered for that module. The average mark per year for the period 2009 to 2013 is then used to calculate the average mark over this 5 year period. This data was obtained from the UWC Marks Administration System (MAS).

[19] For the purposes of this study, the average pass rate for MAC 751 is calculated as the number of students who passed the module at the end of each academic year divided by the number of students registered for that module for that year. The average pass rate per year for the period 2009 to 2013 is then used to calculate

UWC is a 70% pass rate for all modules, and thus over the academic period referred to, this requirement was not met (University of Western Cape, 2010).

However, low average Management Accounting marks do not seem to be limited to UWC. The January and June 2014 SAICA Initial Test of Competence (ITC) exam, indicated that the national average mark[20] for Management Accounting and Finance was 46% and 41%, respectively (SAICA, 2014). This is significant because the ITC is written immediately after a student has completed their PGDA qualification and hence, in the case of UWC, after completing MAC 751. The ITC is the first of two exams students are required to pass to qualify as a member of the South African Institute of Chartered Accountants (SAICA). The ITC exam tests candidates' competencies in the following six core areas, namely:

- Accounting and External Reporting
- Management Decision Making and Control
- Financial Management
- Strategy, Risk management and Governance (SRMG)
- Taxation
- Auditing

SAICA accredited universities incorporate the above six core areas into four subjects, namely: Management Accounting and Financial Management (MAF); Financial Accounting (Fin Acc); Taxation (TAX) and Auditing (AUDIT). At UWC the competencies in Management Accounting and Financial Management, as well as a significant portion of the SRMG competencies, are incorporated into the subject MAC 751. Table 1 below shows that the national average for MAF has been the lowest of the four subject areas during the recent January 2014 and June 2014 ITC examinations.

Table 1 - SAICA ITC Exams - National Average per subject[21]

	Average per Subject				
	TAX	**MAF**	AUDIT	FIN ACC	Overall
January 2014 ITC exam	52.88%	**45.65%**	56.22%	60.80%	53.26%
June 2014 ITC exam	54.75%	**40.91%**	54.65%	47.41%	49.81%

the average pass rate over this 5 year period. This data was obtained from the UWC Marks Administration System (MAS).

[20] The SAICA ITC examination is the first of two professional examinations attempted by candidates qualifying as Chartered Accountants of South Africa. For the purposes of this study, the average mark obtained in the ITC exams per subject is calculated as the cumulative marks obtained by all candidates writing the ITC exam for the questions related to Management Accounting and Finance, divided by the total number of candidates who wrote the ITC exam.

[21] These averages were obtained from the SAICA ITC examination stats for the January 2014 and June 2014 ITC exams respectively.

Therefore, the low average marks observed for MAC 751 at UWC, as well as the poor performance by students in Management Accounting and Financial Management during the recent ITC exams, indicate that Management Accounting at SAICA-accredited post graduate level is generally found by students to be a challenging subject, and thus there is a need to investigate the factors that may have contributed to the performance of students on this module.

The National Development Plan (NDP) introduced by the National Planning Commission (NPC) in 2011, stipulated that one of the main functions of universities is to overcome past inequities within South African society (Higher Education Quality Committee, 2011). UWC, which was established in 1959 as a separate university for non-white students, still bears many of the scars of South Africa's past racial policies, and therefore makes for a highly relevant case study with regards to the predictors of academic performance for students – in this study applied specifically to the MAC751 course.

Available statistics reveal that 92% of the total student population of UWC consist of students from people groups classified as previously disadvantaged (Pillay & Hoffman, 2009). UWC, as a previously disadvantaged[22] university, therefore has a responsibility to address the goals of the NDP insofar as it relates to higher education.

It is for the above reasons that the Department of Accounting at UWC, aimed to identify the factors that could impact on performance in MAC 751 at the university.

The remainder of this article is structured as follows. Section 2 briefly considers some prior research in the field, followed by Section 3 which summarises the hypotheses developed for this research. Section 4 discusses the methodology employed, and Section 5 described the findings. Lastly, Chapter 6 concludes and suggests some future research possibilities.

2. Prior research

Previous research on student performance in accounting degree studies mostly explored the impact of academic ability obtained through high school study on undergraduate degree studies (see, for example, Tho, 1994; Evans & Fancy, 1998; Mckenzie & Schweitzer, 2001; Birch & Miller, 2005; and Tickell & Smyrnois, 2005). These research studies indicate that mathematics at high school, overall high school results and high school attended are the most significant factors determining a student's performance in first year undergraduate accounting degree studies. A limited number of studies investigate performance in advanced accounting courses. Auyeung and Sands (1991; 1992) found that students' results in introductory financial accounting courses have a positive and significant impact on their performance in advanced financial accounting courses. This relationship was also found in a more recent

[22] In 1959, Parliament adopted legislation which established UWC as separate university for coloured people. Coloured people are part of designated groups classified as previously disadvantaged along with Black and Indian people. It can therefore be inferred that UWC is a previously disadvantaged university

study by Jansen (2012), who observed that result in first and second year financial accounting had a positive and significant impact in final year undergraduate financial accounting.

There is particularly scant research, however, on the performance of students in advanced management accounting. Rohde and Kavanagh (1996b) found that the best determinant of students' performance in introductory management accounting was their performance in the prerequisite financial accounting module, while Drennan and Rohde (2002) found that in advanced undergraduate management accounting, students whose first language is English and those who have not been exempted from the pre-requisite module, are likely to perform better.

General research on success factors for SAICA-accredited PGDA courses found that the longer it took students to obtain their PGDA, the worse their performance was in the SAICA ITC exams, which immediately succeeds the PGDA year (Van Wyk, 2011; Roos, 2009). To the authors' knowledge, however, no published research exists relating to the factors that could impact on students' performance in advanced management accounting, including when offered as part of a SAICA-accredited PGDA course.

According to Biggs' 3P model of learning, student endogenous factors both directly and indirectly affect learning outcomes (Biggs, 1987a, 1993a, 1993b). These student factors include students' prior knowledge and ability, which students actively need to build on in order to be successful in completing management accounting at PGDA level. This ability of students to actively construct their own knowledge is known as constructivism (Kruckerberg 2006). Using these concepts and the prior research described above, this study sets out to investigate the student endogenous factors which could impact on the performance of students in advanced management accounting within a SAICA-accredited PGDA programme.

3. Developing the hypotheses

This section will introduce the hypotheses for this study with reference to prior literature.
The first hypothesis is that a student's grade in MAC 751 is a function of their final year overall high school grade. Our aim is to test, within an advanced management accounting context, the findings of previous studies at introductory accounting level (Evans & Fancy, 1998; Mackenzie & Schweitzer, 2001; Birch & Miller, 2005; Tickell & Smyrnois, 2005) that a student's overall high school results are significant in predicting accounting course performance. It is acknowledged that the focus of this study is a PGDA module, but given that there is no documented evidence for performance in management accounting at PGDA level, we assess whether these findings hold true for MAC 751 given that a student's overall high school results is an important prerequisite at UWC.

H1: Students with a higher overall average grade at high school are likely to do better at MAC 751

The second hypothesis is that a student's grade in MAC 751 is a function of their high school mathematics grade as found in previous studies (Tho, 1994; Koh & Koh, 1999) which concluded that a student's high school mathematics results are significant in predicting their performance in introductory accounting degree modules. Once again it is acknowledged that the focus of this study is a PGDA module, but given that a student's high school mathematics results is an important prerequisite at UWC, we assess whether these findings hold true for MAC 751.

H2: Students with a higher high school mathematics grade are likely to do better at MAC 751

The third hypothesis is that students from private or ex-Model C [23]schools are likely to do better in MAC 751. Prior studies found that tertiary academic performance was significantly correlated to the type of secondary school a student attended (Evans & Fancy, 1998; Birch & Miller, 2005). According to the South African Institute of Race Relations (2011) private schools, along with ex-Model C schools are likely to offer a higher standard of learning than government schools. We will therefore assess whether the above findings hold true for MAC 751.

H3: Students from private or ex-Model C schools are likely to do better at MAC 751

The fourth, fifth and sixth hypotheses are that a student's grades in MAC 751 are a function of the grades in the pre-requisite modules for MAC 751. The aim is to replicate previous studies that tested this particular relationship (Rohde & Kavanagh, 1996b; Drennan & Rohde, 2002; Jansen, 2012). At UWC, management accounting is taught for the first time at the second year of the accounting undergraduate degree programme. In order to attempt Introductory Management Accounting (MAC 234), a student has to pass Financial Accounting 1 (FIA 132) and subsequently pass MAC 234 in order to attempt final year undergraduate management accounting (MAC 314). In order to ultimately attempt MAC 751, a student therefore has to pass MAC 314 (University of the Western Cape, 2010). This gives rise to the following hypotheses:

H4: Students with a higher FIA 132 grade are likely to do better at MAC 751

H5: Students with a higher MAC 234 grade are likely to do better at MAC 751

H6: Students with a higher MAC 314 grade are likely to do better at MAC 751

The next hypothesis is that students, who are attempting MAC 751 for their first time, are likely to outperform their counterparts, as found in prior studies (De Lange, Waldmann & Wyatt, 1997; Roos, 2009; Van Wyk, 2011). It is widely accepted that academically stronger students are generally those students who pass their examinations at the first attempt. We will therefore assess whether the above holds true for MAC 751.

[23] The term "Model C" is not officially used by the Department of Basic Education, but is widely used to refer to former whites-only schools (South African Institute of Race Relations, 2011)

H7: Students who attempting MAC 751 for the first time are likely to do better at MAC 751

Prior research of results in introductory undergraduate management accounting found no difference in the performance of students who has English as first language, and those who are not (Jackling & Anderson, 1994). We will replicate this study done by Jackling *et al.* for students who have completed the introductory management accounting modules at UWC and for whom first language information was available. Therefore this hypothesis will be stated in the null as follows:

H8: There is no difference in the performance of students in undergraduate management accounting between those who have English as first language and those who do not have English as their first language.

Jackling *et al.* (1994) observed that the introductory management accounting module observed was primarily of a quantitative nature, and thus negligible shortfalls in English language skills would not excessively affect students' academic performance. The undergraduate management accounting modules at UWC, namely MAC 234 and MAC 314 under hypotheses 5 and 6 respectively, have a similar quantitative focus. Therefore given that that the focus of this study is at PGDA level, we aim to expand on the findings by Drennan and Rohde (2002) who examined the impact of language in advanced undergraduate management accounting. Their findings were that where application of concepts to unfamiliar situations is required, students whose first language is English outperformed their counterparts. This therefore gives rise to the final hypothesis for this study:

H9: Students who have English as their first language are likely to do better at MAC 751 than those who do not have English as their first language.

4. Methodology

4.1. Population and data collection

The sample population consisted of data for all students enrolled for the module MAC 751 at UWC during the academic years 2009 to 2013. For each student the following details were extracted from student records: information relating to first language, high school attended as well as high school results, and tertiary academic record which provided final grades achieved in MAC 751, performance in pre-requisite modules to the latter, and number of attempts at MAC 751. The original sample included 155 students over this 5 year period. However, for 23 students who had transferred from other institutions the full data set was not available, resulting in. these students being excluded from the analyses in order to prevent distortion of the results. The final sample therefore consisted of 132 students.

4.2. Variables

The dependent variable in this study is a student's final grade in MAC 751. Students performance were ranked[24] one through seven (with seven being the best) based on their final

[24] Rankings

7 - Pass	6 - Pass	5 - Pass	4 - Pass	3 - Fail	2 - Fail	1 - Fail
75% or above	70% to 74%	60 to 69%	50 to 59 %	40 – 49%	30 – 39%	Below 30%

results in the module. For the purpose of testing Hypothesis 8 (only in selected models 1A and 1B as shown in Table 3), a student's grades in MAC 234 and MAC 314 were also classified as dependent variables, and ranked one through seven based on their final results in these modules. This was specifically done to distinguish between the impact of language in undergraduate management accounting (MAC234 and MAC 314) and the impact of language in PGDA management accounting (MAC751).

Descriptive statistics of all variables used in the statistical empirical tests are shown in Tables 2A and 2B. Students' final overall high school results, mathematics results and results in prerequisite modules for MAC 751 are expressed as a ranking of four[25] through seven. The other independent variables which related to the hypotheses include *Type School*, *Number Attempts* and *Language*. These independent variables consisted of continuous, ordinal and indicator variables. The continuous variable included *Num Att MAC 314 and Num Att MAC 751* (number of attempts), represents the number of attempts a student took at attempting MAC 314 and MAC 751 respectively. Indicator variables included *Language* which was coded 1 if English was identified as the student's mother-tongue and 0 otherwise. The variable relating to *Type School* was coded 1 if the student attended a school previously classified as either a Model C or private school, and 0 if not.

Table 2A – Descriptive statistics for variables

	Home language *	Type School *	Matric Agg	HS Maths Grade	FIA 132
N	132	132	132	132	132
Mean	NA	NA	5.644	4.500	5.000
Median	1.000	0.000	6.000	5.000	5.000
Mode	1.0	0.0	5.0	5.0	5.0
Std. Deviation	NA	NA	.8572	1.6738	.9410
Skewness	NA	NA	.096	-.759	.056
Kurtosis	NA	NA	-.750	.599	1.904
Minimum	0.0	0.0	4.0	0.0	1.0
Maximum	1.0	1.0	7.0	7.0	7.0

[25] No student who fails (i.e. receives a 1, 2, or 3) for the introductory management accounting course (MAC234) and final year undergraduate management accounting course (MAC 314) can proceed to advanced management accounting.

Table 2B – Descriptive statistics for variables (continued)

	MAC 234	MAC 314	MAC 751	Num Att (MAC314) *	Num Att (MAC751) *
N	132	132	132	132	132
Mean	5.523	4.705	3.568	NA	NA
Median	5.500	5.000	4.000	1.000	1.000
Mode	5.0	5.0	4.0	1.0	1.0
Std. Deviation	.9367	.7283	.8398	NA	NA
Skewness	.018	1.003	-.533	NA	NA
Kurtosis	-.861	1.211	.381	NA	NA
Minimum	4.0	4.0	1.0	1.0	1.0
Maximum	7.0	7.0	6.0	2.0	2.0

* These variables are ordinal data, thus certain descriptive statistics are not applicable
Matric Agg - overall final grade achieved in high school (1 through 7)
HS Maths - mathematics grade achieved in high school (1 through 7)
FIA 121 - grade achieved in financial accounting 1 (1 through 7)
MAC 234- grade achieved in introductory management accounting 1 (1 through 7)
MAC 314- grade achieved in final year undergraduate management accounting 1 (1 through7)
Num Att (MAC 314) - number of attempts at MAC 314 (1 or more)
Num Att (MAC 314) - number of attempts at MAC 751 (1 or more)

Descriptive statistics and linear regressions were used to analyse the data using a software package called SPSS[26], and the following regression models were constructed:

Primary linear regression model for study

Model 2 – At the time a student has completed advanced management accounting (MAC 751) at UWC:
MAC 751 Performance = β_0 + β_1*Matric Agg* + β_2*HS Maths Grade* + β_3*Type School* + + β_4*Language* + β_5*FIA 132* + β_6*MAC 234* + β_7*MAC 314* + β_8*Num Att MAC 314* + β_9*Num Att MAC 751*

[26] SPSS Statistics is a software package used for statistical analysis. SPSS stands for Statistical Package for the Social Sciences and was originally produced by SPSS Inc., but acquired by IBM in 2009.

Linear regression models for the purposes of hypothesis 8 only

<u>Model 1A – At the time a student has completed introductory management accounting (MAC 234) at UWC</u>:

MAC 234 Performance = $\beta_0 + \beta_1$*Matric Agg Grade +* β_2*HS Maths Grade +* β_3*Type School + +* β_4*Language +* β_5*FIA 132*

<u>Model 1B – At the time a student has completed final year undergraduate management accounting (MAC 314) at UWC</u>:

MAC 314 Performance = $\beta_0 + \beta_1$*Matric Agg Grade +* β_2*HS Maths Grade +* β_3*Type School + +* β_4*Language +* β_5*FIA 132 +* β_6*MAC 234 +* β_7*Num Att MAC 314*

5. Findings

The correlation matrices resulting from the linear regression models (Models 1A, 1B and 2) are presented in Table 3 below. The matrices presented for students in Model 1A, for the purpose of testing hypothesis 8, shows the correlation between their performance in introductory management accounting (MAC234) and the following variables: high school attended, high school overall grade, high school mathematics grade, language status, performance in financial accounting 1, and the number of attempts at MAC 234.

Model 1B also includes the correlation between performance in final year undergraduate management accounting (MAC 314) for the purpose of testing hypothesis 8, and includes similar variables as per Model 1A, including grades in MAC 234 and number of attempts at MAC 314.

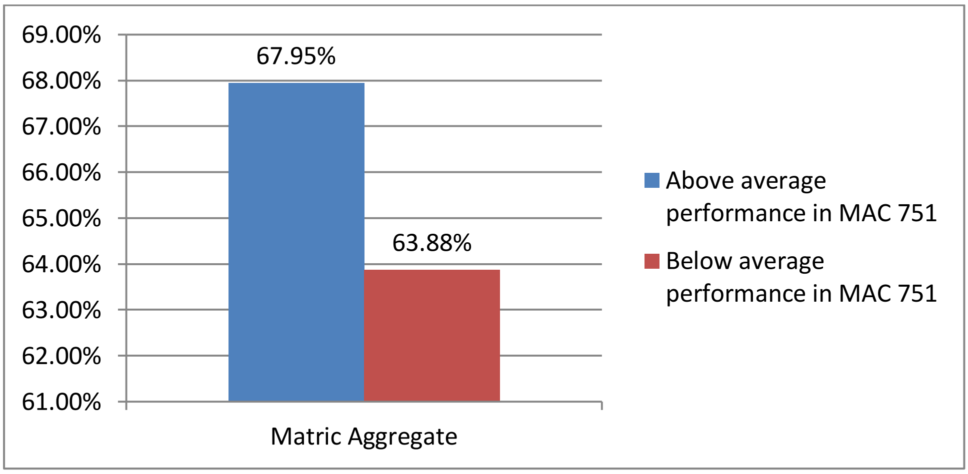
Finally, Model 2 provides the correlation between students' performance in advanced management accounting offered in PGDA (MAC 751) and similar variables as per Model 1B, including a students' grade in MAC 314 as well as the number of attempts at MAC 751.

5.1. Predicting performance in advanced management accounting offered in PGDA (MAC751).

For the 132 students for whom a full data set was available, the correlation matrix (Model 2, Table 3) reveals that a significant positive correlation ($\beta = 0.178$, $p = .039$) exists between a student's final overall high school grade and performance in MAC 751. This result indicates that a student's performance in PGDA advanced management accounting is significantly associated with their overall performance at high school. Although there is no documented evidence for performance in PGDA advanced management accounting, this finding is consistent with prior research exploring the impact of final year high school grades in first year tertiary accounting studies (Evans and Fancy, 1998; Mackenzie and Schweitzer, 2001; Birch and Miller, 2005; Tickell and Smyrnois, 2005), and indicates that students' overall high school results are a significant indicator of their performance in MAC 751.

Figure 1 shows the average overall high school grade obtained by students in the sampled population who have performed above the average final mark[27] for MAC 751, versus those who have performed below the average mark for MAC 751. This provides a graphical presentation as to why there is support for Hypothesis 1.

Figure 1 – Impact of performance in MAC 751 based on overall high school results



This figure depicts the average of overall high school results obtained by students who have performed above the average MAC 751 mark, versus those who have performed below average.

[27] The average final mark for MAC 751 was calculated based on the results obtained by the 132 students included in the final population. An average mark of 49% was calculated and thus a mark below 49% is regarded below average and vice versa where a student has gotten above 49%

Table 3: Linear Regression Models

Variable	Model 1A MAC 234 (Dependent variable)		Model 1B MAC 314 (Dependent variable)		Model 2 MAC 751 (Dependent variable)	
	Beta	P-val.	Beta	P-val.	Beta	P-val.
Language	-.015	.851	-.024	.727	.157	****.049**
School	.099	.220	.065	.365	.131	.106
Matric Agg	.040	.640	.055	.465	.178	****.039**
HS Maths Grade	.106	.184	.127	***.071**	.064	.442
FIA 132	.420	*****.000**	.326	*****.000**	.004	.967
MAC 234			.191	****.015**	.107	.234
MAC 314					.244	*****.008**
Num Att (MAC 234)	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Num Att (MAC 314)			-.362	*****.000**	.019	.812
Num Att (MAC 751)					-.231	*****.008**
Adjusted R^2	0.195		0.379		0.272	
N	132		132		132	
Model Sig	0.000		0.000		0.000	

***. Correlation is significant at the 10% level (2-tailed).**

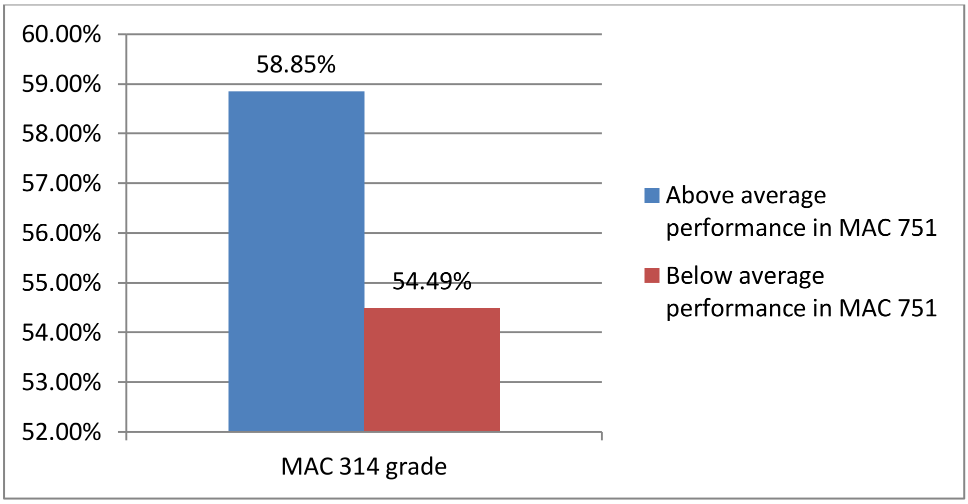
****. Correlation is significant at the 5% level (2-tailed).**

*****. Correlation is significant at the 1% level (2-tailed).**

Note: The statistics for the Num Att (MAC234) is regarded as not applicable, as all students in the sample have attempted the module only once

Table 3 (Model 2) also reveals a significant positive correlation (β = 0.244, p = .008) between a student's performance in MAC 314 and performance in MAC 751. This finding is consistent with Rohde & Kavanagh (1996b), Drennan & Rohde (2002) and Jansen (2012), and indicates that students' results in pre-requisite module (MAC 314) are a significant indicator of their performance in MAC 751 and therefore provides support for Hypothesis 6. This hypothesis is clearly illustrated Figure 2 below which provides a graphical view of the average performance of students in MAC 314 who have performed above average in MAC 751, against those who have performed below average.

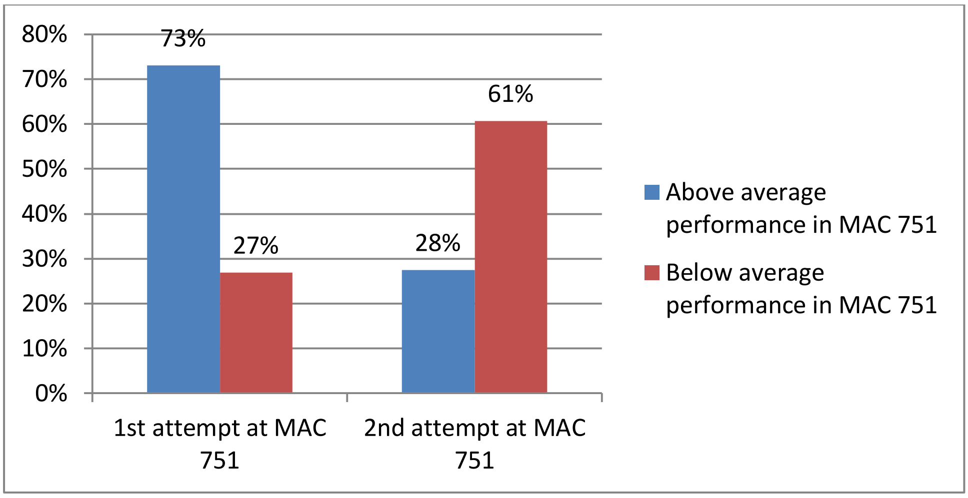
Figure 2 – Impact of performance in MAC 751 based on MAC 314 results



This figure depicts the average MAC 314 results obtained by students who have performed above the average MAC 751 mark versus those who have performed below average.

Finally a significant negative correlation (β = -0.244, p = .008) was found between the number of attempts at MAC 751 and performance in this module. This finding is consistent with De Lange, Waldmann & Wyatt (1997) and Van Wyk (2011), albeit in a different context. The maximum number of attempts a student is allowed in MAC 751 at UWC is two attempts. Therefore, this result indicates that students in their second attempt at MAC 751 are likely to exhibit lower performance in PGDA management accounting. This therefore provides support for Hypothesis 7, and is clearly depicted in Figure 3 below.

Figure 3 – Impact of performance in MAC 751 based on number or attempts



This figure provides a graphical view of students who attempted MAC 751 for the first time and their related performance categorised as either above or below the average performance in MAC 751. This categorised performance by first-time students are then contrasted to those by second-time students.

The correlation matrix (Model 2, Table 3) indicates that although a positive correlation exists between a student's performance in MAC 751 and the variables *Type School, HS Maths, FIA 132 and MAC 234*, these correlations were not found to be statistically significant ($p > .10$), and thus there is insufficient support for the hypotheses stated as Hypotheses 2, 3, 4 and 5.

5.2. The effect of English language on performance in management accounting

5.2.1. The effect of English first language on performance in undergraduate management accounting

The correlation matrices (Model 1A and 1B of Table 3) indicate that English as students' home language is not associated with variant performance in the undergraduate management accounting modules, MAC 234 (β=-0.015, p=.851) and MAC 314 (β=-0.024, p=.727). It is acknowledged that as no difference was hypothesised which is supported by this finding, we cannot conclude that there is no difference[28]. However the findings are consistent with Jackling *et al.*, (1994), where no correlation was also found between language and performance in introductory accounting degree modules.

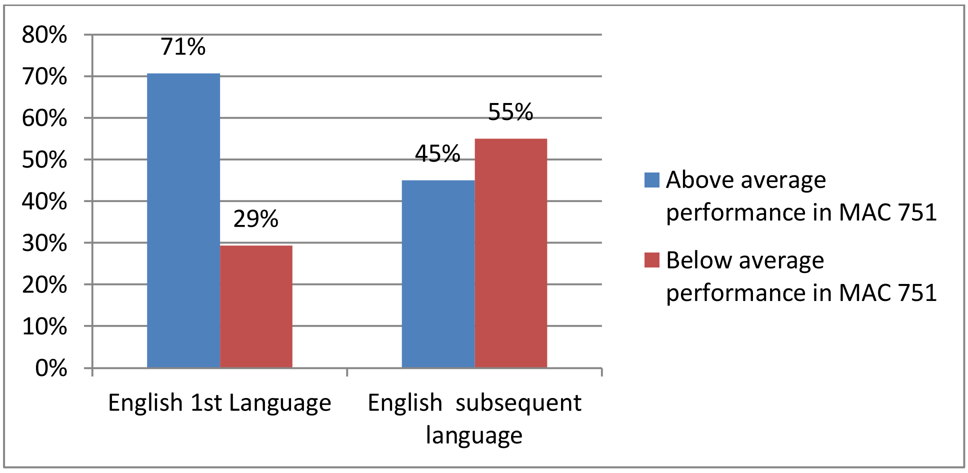
5.2.2. The effect of English first language on performance in advanced management accounting offered as part of a PGDA course accredited by SAICA

The correlation matrix (Model 2 of Table 3) indicate that English as a student's home language is significantly and positively associated with differential performance in MAC 751 (β=0.157, p=.049). This finding is consistent with Drennan & Rohde (2002), and indicates that students whose first language was English outperformed their counterparts whose first

[28] This is due to problems with testing a no effect hypothesis (Tressoldi, Giofre´, Sella & Cumming 2013).

language was not English, thus providing support Hypothesis 9 as clearly depicted in Figure 4 below.

Figure 4 – Impact of performance in MAC 751 based on language



This figure provides a graphical view of students who attempted MAC 751 that are English first language and their related performance categorised as either above or below the average performance in MAC 751. This categorised performance by English first language students are then contrasted to those who are not English first language.

6. Conclusion and ideas for future research

This exploratory study identified and explored student endogenous factors associated with variant performance in advanced management accounting offered as part of a PGDA course, accredited by SAICA. Specifically the study examines the impact of English first language as well as other student endogenous factors namely: a students' overall high school grade; overall high school mathematics grade; results in the pre-requisite modules for PGDA advanced management accounting (MAC 751 at UWC); as well as the number of attempts on performance in MAC 751.

Consistent with prior research, English as a first language was found not be related to differential performance in introductory and final year undergraduate management accounting studies. PGDA advanced management accounting is a subject which places emphasis on unstructured interpretation and application of constructs in unfamiliar contexts (Drennan & Rohde 2002). Therefore, where assessments focus on interpretation and application of key principles in unfamiliar scenarios, such as in PGDA advanced management accounting, there is evidence of higher performance by students whose first language is English.

It is also evident from the results reported in this study that there is a positive and significant correlation with a students' performance in final year undergraduate management accounting (MAC314), which is the pre-requisite module immediately precedes PGDA advanced management accounting (MAC 751). This finding indicates that a high level of alignment exists between the topics covered and level of assessment in MAC 314 and MAC 751. In addition these results also support the concept of constructivism, which is being able to build new knowledge or add new skills and abilities onto existing knowledge or existing skills sets. As a pre-requisite for MAC 751, MAC 314 is assumed to be one of the existing skill sets or knowledge that a student has to build on in order to be successful in MAC 751.

Also apparent from the findings reported in this study are that students' overall high school grade has a positive and significant correlation with performance in MAC 751. We surmise that a possible reason for this is that MAC 751 as explained requires interpretation and application in unfamiliar contexts, which requires a wide range of competencies such as numerical and analytical skills, as well as logical reasoning. As the overall high school grade incorporates a student's average over at least seven[29] grade twelve subjects, it could be argued that students with higher overall high school grades possess a greater range of competencies, which aid them to adapt efficiently to these unfamiliar contexts. It therefore also appears reasonable for UWC to have a student's year final high school grade as an input into the decision relating to their acceptance in the undergraduate programme.

Finally, the results reported in this study reveal that students who have attempted MAC 751 for the first time are likely to perform better than their counterparts. MAC 751 is one of subjects which incorporate some of the key competencies required to be displayed in the SAICA ITC exam. Van Wyk (2011) examined the performance of candidates writing the 2009 SAICA ITC exam, and found that first-time candidates have a greater chance of passing the SAICA ITC exam. In addition, the likelihood of a candidate's success in the ITC exam decreases as the number of attempts increase. Given that MAC 751 is one of the subjects a student has to successfully complete before sitting for the ITC exam, the same benefit of attempting the ITC exam for the first time is expected with MAC 751.

The current study was limited to explaining only 27% of the variation in student performance using the adjusted R^2 of Model 2 of Table 3, which contained all the variables hypothesized to have impact on performance in MAC 751. This is due to the research focusing only on student endogenous factors which could impact on performance in MAC 751.

Student endogenous factors are a sub category of the presage factors which affect learning outcomes as described by Biggs' 3P model. In order to allow more insight to be gained into the performance and success of students in PGDA advanced management accounting, future research could be conducted on the process factors as depicted by Biggs' 3P model, such as students' approaches to learning. In addition, the impact of the teaching context on performance in PGDA advanced management accounting can also be explored. These factors could include, amongst others, the quality and style of assessments, and the experience and aptitude of academic staff.

[29] According to the Department of Basic Education 2010, South African grade 12 learners study at least 7 subjects.

A significant area for further research is the fact that PGDA-level management accounting is only taught and assessed in English and/or Afrikaans at all SAICA accredited universities in South Africa. The impact of potential mother tongue interventions which aim to address the limitation of a student not being taught and assessed in their home language could be explored.

Lastly it is acknowledged that a sample size of 132 students is small given the number of variables, and although the findings in this study have potential importance it has limited generalizability by virtue of the population being students from one university. This study could therefore be replicated using data from other universities offering advanced management accounting as part of a PGDA programme accredited by SAICA. This could also lend itself to a comparative study between different institutions. It should however be noted that the results per institution when conducting a study of this nature, may not be directly comparable due to a difference in teaching contexts across institutions.

References

Auyeung, P. K., 1991, 'Secondary school accounting and student subsequent performance in the initial university accounting course: an Australian study', *Paper presented at Third Annual Conference of Accounting Academics,* March 26–27, Hong Kong.

Auyeung, P. K. & D. F. Sands, 1991, 'The relationship of secondary school studies and the initial university accounting course to subsequent performance in an accounting major program: An Australian study', *Working paper (Griffith University, Brisbane, Queensland)*.

Auyeung, P. K. & D. F. Sands, 1992, 'Relationship of secondary school performance to student performance in the first and second university accounting courses: a gender-based study, *Unpublished working paper (Griffith University, Brisbane, Queensland)*.

Biggs, J.B., 1987a, Student approaches to learning and studying, Camberwell, Vic: *Australian Council for Educational Research*.

Biggs, J.B., 1993a, What do inventories of students' learning process really measure? A theoretical review and clarification. *British Journal of Educational Psychology,* 63: 1-17

Biggs, J.B., 1993b, From theory to practice: A cognitive systems approach. *Higher Education Research and Development,* 12: 73-86

Birch, E., & Miller, P, 2005, The Determinants of Students' Tertiary Academic Performance. *Published book.*

De Lange, P., Waldmann, E. & Wyatt, K., 1997, Personal characteristics and academic achievement of undergraduate accounting students studying through open learning. *Accounting Education*, 6(4): 295-306.

Department of Basic Education, 2010. *Every child is a national asset*, viewed 29 January 2015 from http://www.education.gov.za

Drennan, L.G. & Rohde, F.H., 2002, Determinants of performance in advanced undergraduate management accounting: An empirical investigation. *Accounting Education and Finance,* 42: 27-40.

Evans, M; & Fancy, 1999,. Institutional characteristics and the relationship between students' first-year university and final-year secondary school academic performance. *Published book*.

Higher Education Quality Committee, 2011. *National Development Plan Vision 2030*, Pretoria.

Jackling, B., Russell, G. & Anderson, A, 1994, Student background and performance in accounting, *Presented at Accounting Association of Australia and New Zealand Conference*, July 3-6, Wollongong.

Jansen, J., 2012, '*Factors impacting on the performance of students attempting Financial Accounting 322/323 at University Anonymous'*. Masters dissertation, Department of Accounting, University of Pretoria, Pretoria.

Koh, M.Y., & Koh, H.C., 1999, The determinants of performance in an accountancy degree programme, *Accounting Education*, 8(1): 13-29.

Kruckeberg, R., 2006, A Deweyan perspective on science education: Constructivism, experience, and why we learn science, *Science & Education, 15,* 1-30.

Mackenzie, K & Schweitzer, R., 2001, Who succeeds at University? Factors predicting academic performance in first year Australian university students. *Higher Education Research and Development*, 20(1): 21-33.

MAS, 2014, marks administration System, computer software. University of the Western Cape, Cape Town.

Pillay, V. & Hoffman, R., 2009, 'How black are our universities?*', Mail and Guardian,* 5 November 2009.

Rohde, F. H., & M. Kavanagh, 1996b, Academic determinants of performance in first year management accounting. *Accounting Research Journal 9,* No. 2, 63-69.

Roos, S. 2009, Factors affecting Southern African students' performance in CIMA examinations, *Meditari Accountancy Research,* 17(1): 49-67.

SAICA, (South African Institute of Chartered Accountants) 2014, *January 2014 ITC exam statistics,* university release document. [Obtained: 27 March 2014].

SAICA, (South African Institute of Chartered Accountants) 2014, *June 2014 ITC exam statistics,* university release document. [Obtained: 21 August 2014].

South African Institute of Race Relations. *Model C is the model to emulate,* viewed 4 February 2015, from http://irr/org.za/reports-and-publications/research-policy-brief/research-and-policy-brief-model-c-is-the-model-to-emulate-1-february-2011.

Tho, L.M., 1994, Some evidence on the determinants of student performance in the University of Malaya introductory accounting course, *Accounting Education,* 3(4): 331-340.

Tickell, G., & Smyrnois, K., 2005, Predictors of tertiary accounting students' academic performance: A comparison of Year 12-to-university students with TAFE-to-university students, *Journal of Higher Education Policy and Management*, 27(2): 239-259.

Tressoldi, P., Giofre´, D., Sella, F., & Cumming, G., 2013, High Impact = High Statistical Standards? Not Necessarily, *PLoS ONE*, 8(2): e56180.

University of the Western Cape, 2010, *University Calendar: Faculty of Economic and Management Sciences,* faculty handbook, Cape Town, South Africa

Van Wyk, E., 2011, The SAICA Part I Qualifying Examinations: Factors that may influence candidates' performance, *South African Journal of Accountancy Research*, 25(1): 1-13.

MAF012 Total Beta: a review of theory and practice

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Abstract

Modern Portfolio Theory assumes that the marginal investor is diversified and therefore will only be compensated for systematic or non-diversifiable risks. A CAPM market or equity beta only reflects systematic risk. However, the assumption of well-diversified shareholders will often not apply to private companies. The owner of a private company will often have most of his/her wealth invested in the business and total risk may be more relevant than systematic risk. This would increase the cost of equity of private companies which have undiversified investors. Often, valuers will make upward adjustments by adding specific risk and size premiums to the CAPM cost of equity. An alternative approach is to apply Total Beta which captures the total risk of companies. This paper reviews the derivation of the Total Beta methodology and its level of acceptance in the academic literature and valuation reference books. The study then applies the total beta methodology to the JSE Sector Indices with the objective of establishing the average size of the adjustment by sector. The average (non-weighted) market or equity sector beta will increase from 0.76 to 1.61 and the average sector cost of equity based on current estimates for the risk-free rate and equity (market) risk premium will increase from12.2% to 16.8%. This increase is within the range of ad hoc adjustments often made to a company's cost of equity in order to value private companies. However, there remain significant limitations to using the total beta concept in practice.

Key words: total beta, CAPM, beta, systematic risk, equity risk premium, diversification, specific risk premium, Butler-Pinkerton calculator,

Total Beta: a review of theory and practice

Modern Portfolio Theory assumes that the marginal investor is diversified and therefore will only be compensated for systematic or non-diversifiable risks. A CAPM market or equity beta only reflects systematic risk and for listed companies this may reflect a reasonable assumption. However, the assumption of well-diversified shareholders will often not apply to private companies. As Damodaran (2006) points out, the owner of a private company will often have most of his/her wealth invested in the business. This means that an owner of a private firm is often very concerned about total risk and not only about market or systematic risk. Total Beta can be employed to determine a company's cost of equity that includes total risk instead of only systematic or market risk.

The specific questions to be addressed in this study are:

1. What is the derivation of the Total Beta approach?
2. Is the Total Beta approach recognised as acceptable to value private companies within the academic literature and by the appraisal community?
3. Is the Total Beta approach valid for unlisted subsidiaries of listed companies?

4. What are the Total Betas for the JSE sectors and are these betas significantly different from published JSE sector equity betas?
5. What is the cost of equity per sector using total and equity beta approaches and do these approaches result in significantly different cost of equity estimates?

The study is divided into three parts in order to address these questions. Part 1 analyses the source and derivation of the Total Beta concept from CAPM. Part 2 analyses its application as well as its acceptance within the academic literature, reference books and appraisal communities. Part 3 determines the total beta per JSE sector and sets out estimates of the cost of equity per sector. The total betas and cost of equity estimates based on a Total Beta methodology are analysed in relation to market or equity betas and cost of equity estimates based on equity betas.

The Total Beta Approach

It is expected that the cost of equity for private companies would be higher than for listed firms. If this is the case, then applying a CAPM beta will understate the risk of the business and therefore the cost of equity. Damodaran (2006) indicates that we can add a premium to the cost of equity to reflect this focus on total risk rather than on market risk. He also suggests the use of a Total Beta, which he defines as:

$$\text{Total Beta} = \text{Market beta}/\sqrt{R^2}$$

Effectively, we are dividing the CAPM beta by the correlation co-efficient[30]. This indicates the undiversified nature of private company investors. If the CAPM beta of a firm is 0.80 and the R^2 is 0.30, then the firm's total beta would be determined to be:

$$\text{Total Beta} = 0.80/\sqrt{0.30} = 1.46$$

If the risk free rate was 8% and the market risk premium was 5%, then this will imply that the cost of equity for a private firm would be:

$$\text{Cost of Equity} = 8\% + 1.46\ (5\%) = 15.3\%$$

The cost of equity for a listed firm assuming similar operating risks but diversified shareholders would normally be determined as follows:

$$\text{Cost of Equity} = 8\% + 0.8\ (5\%) = 12\%$$

As Total Beta reflects total risk, Butler and Pinkerton (2006) indicate that this will include a size premium and a company specific risk premium. Therefore in a modified CAPM setting, analysts may add a company specific risk premium (CSRP) and the use of a Total Beta would capture this risk as well as any size premium.

[30] Alternatively, we can present the beta as $\boldsymbol{\beta} = \boldsymbol{p}(\sigma s/\sigma m)$ where p is the correlation co-efficient and Total Beta = $\boldsymbol{\beta}/\boldsymbol{p} = (\sigma s/\sigma m)$. We will come back to this later in the study.

The concept of Total Beta can be derived from CAPM and is closely associated with Professor Aswath Damodaran of New York University who has published widely in finance and has published a widely used book on valuations, *Damodaran on Valuations*[31]. Total Beta is referred to in the book and applied to the valuation of a private company.

Derivation of Total Beta

The derivation of Total Beta can be seen as a natural extension of the CAPM market beta formula, which can be presented as follows;

$$\boldsymbol{\beta = p(\sigma_s/\sigma_m)}$$

where p is the correlation co-efficient and $\boldsymbol{\sigma}_s$ is the standard deviation of the individual share whilst $\boldsymbol{\sigma}_m$ is the standard deviation for the market index. This presentation of CAPM beta is often referred to in textbooks. For example, Brigham and Ehrhardt[32] in *Financial Management: Theory and Practice*, Mayo[33] in *Investments: An introduction* and Correia et al[34] in *Financial Management* all refer to this formula to determine a share's equity beta.

For completely undiversified investors, the correlation coefficient falls away, so that Total Beta **(**Tβ) is:

$$\mathbf{T\boldsymbol{\beta} = (\boldsymbol{\sigma}_s/\boldsymbol{\sigma}_m)}$$

Practically, from public information on betas and the R^2, (both of which are normally provided by service providers in the calculation of equity betas), it becomes simple to determine the Total Beta by dividing the equity beta by the correlation coefficient ($\sqrt{R^2}$)

$$\mathbf{T\boldsymbol{\beta} = \boldsymbol{\beta}/\boldsymbol{p}}$$

Although, the application of Total Beta is debatable, its derivation is relatively simple and many criticisms may also apply to CAPM and the use of equity betas. The reader is referred to Damodaran (2006) and Kasper (2008) and others to determine the issues regarding the use of Total Beta in the valuation of private companies.

In the determination of betas, σ refers to the standard deviation and not the variance and is derived from the covariance of share j's return with the market return, divided by the variance of the market return:

$$\beta_j = Cov_{jm}/Var_m = p_{jm}\sigma_j\sigma_{m/}\sigma^2{}_m$$

Modern Portfolio Theory and CAPM assume well-diversified investors.

The argument that a company, which is not diversified in relation to comparable companies, should use the Total Beta approach is not correct. In fact, the use of Total Beta refers to the

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31 Aswath Damodaran, (2006), Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd edition, Wiley Finance series, John Wiley & Sons, see pages 57-59 on Total Beta.

32 Brigham, E.F. & Ehrhardt, M.C.,*Financial Management: Theory and Practice,* 12 edition, Thomson South-Western, 2008, In Chapter 7 Portfolio Theory and Other Asset Pricing Models, page 254

33 Mayo, H., *Investments: An introduction*, 9th edition, Thomson South-Western, 2008, In Chapter 6 Risk and Portfolio Management, Page 174

34 Correia, C., Flynn, D. Uliana, E. & Wormald, M., *Financial Management*, 7th edition, Juta & Co., 2011, In Chapter 4, page 4-28, [stated in the form of $\beta = p(\sigma_s\sigma_m/\sigma^2{}_m)$]

lack of diversification of a company's shareholders, and not the degree of diversification within a company's operations. [35]

CAPM is based on the assumption that firms will not be compensated for diversification. For example, assume X Ltd is an auto-component manufacturer. The company may decide to diversify by investing in property. The company will not experience an increase in value due to diversification, as it is much easier for shareholders, rather than firms, to diversify. In fact some diversified groups trade at a discount to NAV[36]. Bradfield and Hendricks (2012)[37] state that:

> If we are not forced to take on unique risk (since it can be eliminated by diversification), then why should we be rewarded for it? However, no matter how much we diversify, we cannot eliminate market risk

The application of Total Beta takes into account the lack of diversification of the shareholders and may be applicable to the valuation of private companies. Damodaran and Margolis (2008) use a total beta approach to determine the cost of equity in a public to private transition and to value a company, Harmon, as a private company.

An extension of this idea is consideration of whether it is valid to apply a Total Beta to a non-listed subsidiary of a listed company. If a company is not listed but it is a division or subsidiary of a major listed company, then it would be reasonable to infer that most of its shareholders are well diversified. It would not be appropriate in this case to apply a Total Beta. In fact, Professor Aswath Damodaran confirmed via email correspondence that it would not be appropriate to use a Total Beta for an unlisted subsidiary of a listed company.[38] If a company is part of a listed group then it is generally assumed that the majority of its shareholders are either well diversified or able to diversify.

Diversification will reduce the risk of a firm's operations and for undiversified shareholders; it would make sense to diversify operations. However, as Bradfield and Hendricks (2012) confirm, it is easier for shareholders to diversify than for firms to diversify on behalf of shareholders and therefore shareholders will not reward diversification. The basis of CAPM, as imperfect as it is, is based on the assumption of efficient markets and diversified shareholders. The lack of diversification of a company's operations is not relevant. What is relevant is the lack of diversification of a company's shareholders.

The use of Total Beta in financial theory and the determination of the cost of equity on the basis of total risk or relative volatilities are based on the premise that a private company's

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[35] A company that operates in numerous sectors will have an equity beta that is a weighted average of the individual sector/divisional betas and we need to derive the individual division's beta when using comparable company data. This is very different to the concept of a Total Beta.

[36] For example, Remgro traded at a discount of 6.5% (7.3%) to its intrinsic net asset value in 2014 (2013).

[37] Bradfield, D. & Hendricks, D., (2012) Equity Risk Service on the JSE Securities Exchange, published by BNP Paribas Cadiz Securities, Quantitative Research, June 2012, Vo. 14, No. 2

[38] I did not refer to GT or the holding company but presented a hypothetical example of a private company that is the subsidiary of a listed company.

shareholders are completely undiversified. This does not always apply. Damodaran's (2006) view is that Total Beta should only apply for private companies with undiversified shareholders.

We are not aware of analysts or corporate finance practitioners using Total Beta to value undiversified firms. Yet, the PWC surveys (2009/10, 2012) indicate that most practitioners do make specific risk adjustments and size adjustments to the cost of equity determined on the basis of CAPM. This means that the cost of equity determination will be subject to adjustments not indicated by CAPM and will in most cases result in a higher cost of equity than determined by only CAPM.

South Africa has challenges regarding the duality of the JSE in that there may be a significant over-weighting of resources in relation to the CAPM definition of a market portfolio, which may impact on betas. Also, there is the size effect and the performance of low price-earnings firms over time[39], and other factors, which may impact on the application of CAPM[40]. However, the use of the traditional CAPM beta is widespread as indicated by surveys of practice.

Surveys of the use of CAPM in South Africa

The 2011 KPMG Cost of Capital Survey[41] found that 96% of companies surveyed used historic betas in determining the cost of equity. In the same survey, KPMG states that beta "expresses the systematic risk (market risk) i.e. the risk that shareholders are unable to eliminate by diversification." The survey found that 47% of firms used raw betas and 53% of firms used adjusted betas. An *adjusted beta* refers to the use of a weighted average of the *raw beta* of a company and the *market beta* of 1 and reflects the tendency of betas to move to unity over time.

The 2009/2010 and the 2012 PricewaterhouseCoopers Valuation Methodology Surveys[42], found that almost all companies surveyed use the CAPM and that companies surveyed source their betas mainly from Bloomberg, BNP Paribas / Cadiz Financial Risk Service and McGregor BFA. These beta service providers provide betas that are based on traditional CAPM betas and these service providers' beta estimates do not reflect Total Betas, although they do provide R^2 and measures of annualised total risk enabling one to determine total betas.

The PwC 2010 and 2012 surveys also found that over 80% of companies would either frequently or sometimes add a premium for specific firm risks. Such unique risks include

[39] See for example, Van Rensburg, P. & Robertson, M. (2003), Size, price-earnings and beta on the JSE, *Investment Analyst Journal*, No. 58.

[40] See for example, Van Rensburg, P. (2002) "Market Segmentation on the Johannesburg Stock Exchange", *Journal of Studies in Economics and Econometrics*, Vol. 26, No. 3 and Bowie, D.C. & Bradfield, D.J. (1997), Some evidence on the stability of beta coefficients on the JSE, SA Journal of Accounting Research, Vol.11

[41] KPMG Corporate Finance, Cost of Capital and Impairment Testing Study: 2011, Empirical survey of South African companies, kpmg.co.za

[42] PricewaterhouseCoopers Corporate Finance, Signs of the times. Valuation Methodology Survey, 2009/2010, 5th edition, http://www.pwc.co.za/en/assets/pdf/pwc-valuation-methodology-survey-2010.pdf

such factors as dependence on key management, dependence on one key customer or supplier, lack of a track record, significant growth expectations and other risks. However, this does not reflect the application of Total Beta although the effect may be similar in relation to increasing the cost of equity. Companies may adjust for specific risks by using the traditional CAPM beta and then add a premium for specific risks but the current experience in South Africa is not to employ a Total Beta methodology. For example, in a regulatory setting, NERSA permits adjustments to CAPM - if applicable for a size premium, specific risks and a liquidity premium.

Is the Total Beta concept widely accepted in the academic literature, valuation reference texts and appraiser communities?

In this section we wish to determine whether valuation analysts and appraisers use Total Beta in practice and whether the concept is accepted within the academic literature and the recognised valuation reference books.

Although surveys of valuation methodologies and cost of capital practices by KPMG (2011) and PWC (2012) indicate a widespread use of CAPM betas, none of these surveys have indicated any use of Total Betas by valuation practitioners in South Africa.

Although closely aligned with Professor Damodaran, Total Beta was first referred to as the "Beta Quotient" by Robert Camp and Arthur Eubank in an article, which was published in the *Journal of Portfolio Management* in 1981.[43] Other academic support for Total Beta, (defined as the volatility of a company's return to the volatility of the market index), was published by Chris Tofallis in the *European Journal of Operational Research*[44].

In the valuation community, the use of Total Beta was given further impetus by Peter Butler who came across Total Beta in the article, *Estimating the Cost of Equity for a Private Company* by Aswath Damodaran, which was published on Damodaran's website[45].

In the USA, appraisers and valuators would normally determine the Total Cost of Equity (TCOE) of a private company by adding a Company Specific Risk Premium (CSRP)[46] so that;

$TCOE = R_f + \beta\ (ERP) + SP + CSRP$

ERP = equity risk premium
SP = size premium

[43] Camp, R.C. & Eubank, A.A. (1981) The Beta Quotient: A new measure of portfolio risk, *Journal of Portfolio Management*, Vol. 7, No. 4, pages 53-58
[44] Tofallis, C., (2008), Investment volatility: A critique of standard beta estimation and a simple way forward, European Journal of Operational Research, Vol. 187, pages 1358-1367
[45] http://pages.stern.nyu.edu/~adamodar/New_Home_Page/valquestions/totalbeta.htm
[46] See for example, Pratt, S.P. & Niculita, A., Valuing a Business: The Analysis and Appraisal of Closely Held Companies, 5th edition, McGraw-Hill, 2008, page 200.

The derivation of the first three factors can be obtained from independent service providers and each of these variables is market driven and independent of individual appraisers and is obtained from services and books such as the *SBBI Valuation Yearbook*. The estimation of CSRP however is much more subjective and is based on an appraiser's estimate. Butler and Pinkerton used Total Beta to determine TCOE, so that:

$$\text{TCOE} = R_f + \mathbf{T}\beta\,(\text{ERP}) = R_f + \beta\,(\text{ERP}) + \text{SP} + \text{CSRP}$$

As the Total Beta ($\mathbf{T}\beta$) reflects total risk, it also includes the Size Premium and Butler and Pinkerton determine that one can therefore determine a firm's CSRP by using the market data relating to $R_f + \beta\,(\text{ERP}) + \text{SP}$ so that:

$$\text{CSRP} = R_f + \mathbf{T}\beta\,(\text{ERP}) - \text{SP}$$

It is simple to determine Total Beta and TCOE for publicly listed companies and so Butler and Pinkerton could therefore *estimate* the total cost of equity (TCOE) for a private company by analysing the TCOEs of comparable listed companies.

The selection of comparable companies would continue to require professional judgement but it is expected that estimates are more objective in relation to the alternative, which is a highly subjective estimate of CSRP. Butler and Pinkerton founded an online subscription service, which has become known as the Butler-Pinkerton Calculator (BPC)[47] which will for a fee enable one to determine the total beta of specified comparable (guideline) listed companies.

Whilst the CAPM beta assumes a well-diversified investor, the use of BPC or Total Beta assumes that a shareholder in a private company is not diversified at all. Therefore, this may also be unrealistic and will need to be adjusted for the degree of diversification of shareholders.

The Total Beta or the BPC is now included in well-known and respected valuation and cost of capital textbooks such as *Financial Valuation* by James Hitchener (2011)[48], *Cost of Capital* by Shannon Pratt and Roger Grabowski (2010)[49], and *Understanding Business Valuation: A Practical Guide to Valuing Small to Medium-Sized Businesses* by Gary Trugman (2008)[50]. Yet the BPC and Total Beta has been subject to controversy in relation to its application and acceptance by the academic and valuation communities.

Trugman (2008) (see pages 371-373) is generally positive about the contribution that Total Beta can make to determine the Total Cost of Equity of guideline companies in the valuation of private companies.

[47] Go to www.bvmarketdata.com and click on the *Butler Pinkerton Calculator* option.

[48] Hitchener, J.R. *Financial Valuation: Applications and Models*, 3rd edition, 2011, Wiley Finance Series, John Wiley & Sons

[49] Pratt, S.P. & Grabowski, R.J. Cost of Capital: Applications and Examples, 4th edition, 2010, Wiley Finance Series, John Wiley & Sons

[50] Trugman, G. *Understanding Business Valuation: A Practical Guide to Valuing Small to Medium-Sized Businesses, 3rd edition, 2008, AICPA*

Hitchener (2011) (see pages 214-215) focuses on the limitations of using data for the income approach from the same sources used to apply the market approach to valuing a firm. Hitchener (2011) (on page 215) states;

> It should also be noted that there has been some lively debate and a high degree or criticism over the proprietary of the TBM (total beta model) that will likely continue as analysts evaluate the applicability of this resource to help calculate unsystematic risk.

Pratt and Grabowski (2010) are generally critical of the use of Total Beta and quotes Ibbotson and Associates on page 308, that "the cost of capital should reflect the risk of the investment, not the cost of funds to a particular investor".

Pratt and Grabowski (2010) include other criticisms of the Total Beta approach which includes the proposition that if diversified investors are prepared to pay more for firms than undiversified investors, then prices and values will approach the values of diversified investors. Pratt and Grabowski (2010, page 307) go on to state:

> How can a company estimate its cost of capital if it needs to guess if the pool of likely buyers is diversified? Using total beta to estimate the cost of equity capital determines investment value (the value to a particular investor), not fair market value or fair value for financial reporting. The total cost of equity derived from total beta may not be consistent with the definitions of fair market value or fair value. As the more diversified buyer is likely to pay a higher price, the value of the business and business interests in most cases must be greater than their value determined using total beta.

Total Beta has been subject to significant criticism by some academics whilst a number of academics have supported the use of Total Beta. Kasper (2008)[51], Helfenstein (2009)[52] and Walker (2010)[53] are highly critical of the use of Total Beta. Kasper (2008) states that TCOE has not gained scholarly support and violates financial theory. Butler and Pinkerton have written a number of rebuttals to this criticism[54].

Petersen, Plenborg and Scholar (2006) specifically investigated the use of total beta by private equity firms and found that private equity firms that invest in unlisted entities do not use a Total Beta approach although the sector will often increase the required rate of return due to an investment's lack of liquidity, risk, debt structures and uncertainty as to achieving a viable exit strategy.[55] In private equity transactions that are based on highly leveraged

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[51] Kasper, L. (2008) The Butler Pinkerton Model for Company-Specific Risk Premium – A Critique, Business Valuation Review, Vo. 27 (Winter), pages 233-243

[52] Sarah von Helfenstein, (2009), Revisiting Total Beta, *Business Valuation Review*, Vo. 28, No. 4, pages 201-223

[53] Walker, M.M. (2010), Evaluating the Butler-Pinkerton Model: Is it better than the Buildup Method?, *Business Appraisal Practice*, 3rd quarter, pages 22-31

[54] Please refer to www.bvmarketdata.com for rebuttals by Butler or Pinkerton – specifically, http://www.bvmarketdata.com/defaulttextonly.asp?f=bpmarticles

[55] See for example, Petersen, C., Plenborg, T. and Scholar, F. (2006), Issues in Valuation of Privately Held Firms, Journal of Private Equity, Vol. 10, No.1, pages 33-48. This study specifically investigated the use of total beta by private equity firms.

financial structures, any Hamada relevering of an unlevered CAPM beta will result in a high cost of equity.

Damodaran offers relevant insights and whilst in agreement with Total Beta, cautions against use of the model in a number of situations. For example, he states the following as quoted in Hitchener (2011)[56]:

> It is not the appropriate measure of risk if an asset is being valued to a potential buyer, who is partially or mostly diversified. Thus, when valuing a private business for sale to a publicly traded company, it is not appropriate to use total beta (and cost of equity).
>
> If asked to assess fair value, where fair value is the value to the best potential buyer of a business, using total beta is unlikely to provide the answer, unless you happen to be in a business where all of the potential buyers are undiversified.

Whilst the Total Beta is generally derived from CAPM, we are really analysing an investment on the basis of the relative volatility of an investment with the volatility of the market as indicated by respective standard deviations.

There is a lack of evidence that Total Betas are used in South Africa nor is there evidence of the use of alternatives to CAPM such as APT, although a few companies are now employing the Fama-French three-factor model.

Whilst the application of Total Beta may be useful in the valuation of private companies, particularly in relation to an unsatisfactory alternative (a subjective CSRP), it remains to be seen whether this method will become generally accepted over time by academics and by practitioners. At this current time, it is a fair to conclude that the use of the Total Beta method is generally not yet accepted in practice or in research studies. Further, there is little empirical testing on comparing returns for private companies relative to the market index over time to evaluate whether the Total Beta approach is valid to predict returns.

Determination of Total Betas and Cost of Equity for JSE Sector Indices

The application of the Total Beta methodology to determine the cost of equity of a private company with undiversified shareholders requires that the total beta of a comparable listed company be employed to determine the cost of equity of a private company. In this section, the equity betas of JSE Sector indices are adjusted by applying the following formula to the JSE Sector indices:

$$T\beta = \beta/\sqrt{R^2}$$

The objective is that in the valuation of a private company with undiversified shareholders, total risk indicated by a firm's Total Beta would be more relevant rather than any adjustment made for systematic risk indicated by the CAPM beta. The use of the comparable sector's

[56] Wisehart, D. Boston's Battle of the Beta, in *Financial Valuation: Applications and Models* by J.R. Hitchener, Chapter 6, Addendum 3, page 6

Total Beta would be employed to determine the Total Beta of the private company being valued. The objective in this section is to indicate the materiality of the adjustment to a company's cost of equity that may arise from the use of a Total Beta methodology in South Africa.

The equity betas are sourced from the BNP Paribas /Cadiz Financial Risk Service for the December 2014 quarter. Figure 1 presents the comparative equity and total betas for the JSE Sector Indices.

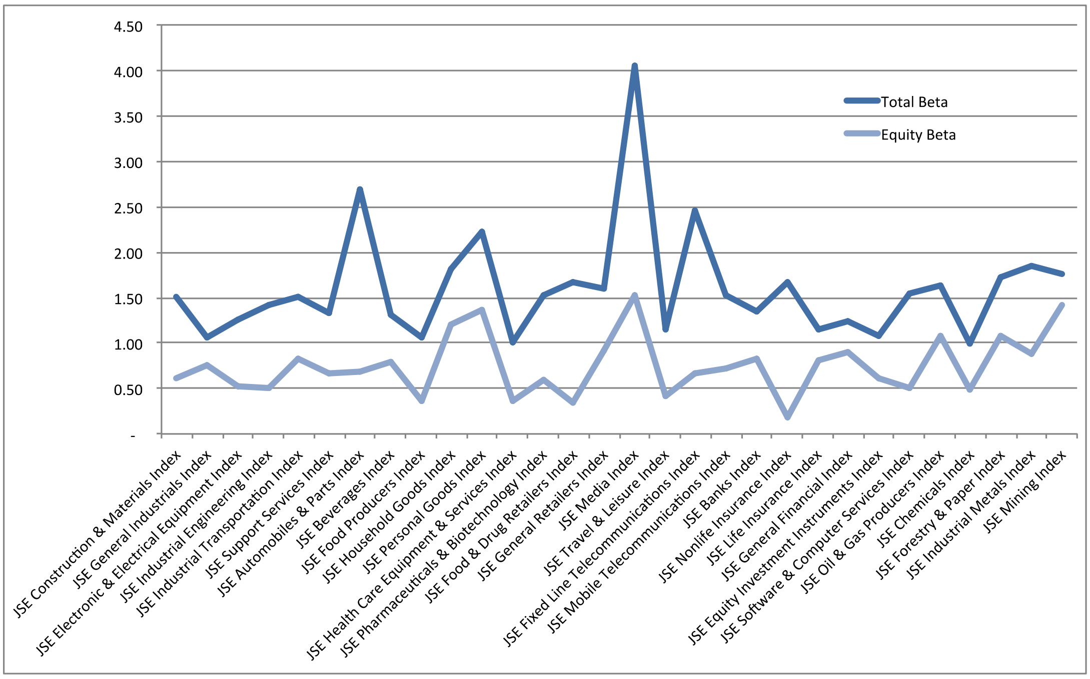

Figure 1: The Total Betas of the JSE Sector Indices

In order to determine the likely impact on each sector's cost of equity, the CAPM cost of equity is determined using a risk-free rate of 8% which reflects the rounded up yield on the R186 government bond at 31 December 2014 which was 7.96%. A market risk premium of 5.5% is employed, which is a reasonable estimate of the likely market risk premium (see Correia et al, 2015, p.7-26).

Figure 2 sets out the cost of equity per sector on the JSE as at 31 December 2014 and using the BNP Paribas / Cadiz Financial Risk Service betas as at 31 December 2014. The cost of equity for each sector is significantly higher than the cost of equity based on a sector's market or equity beta.

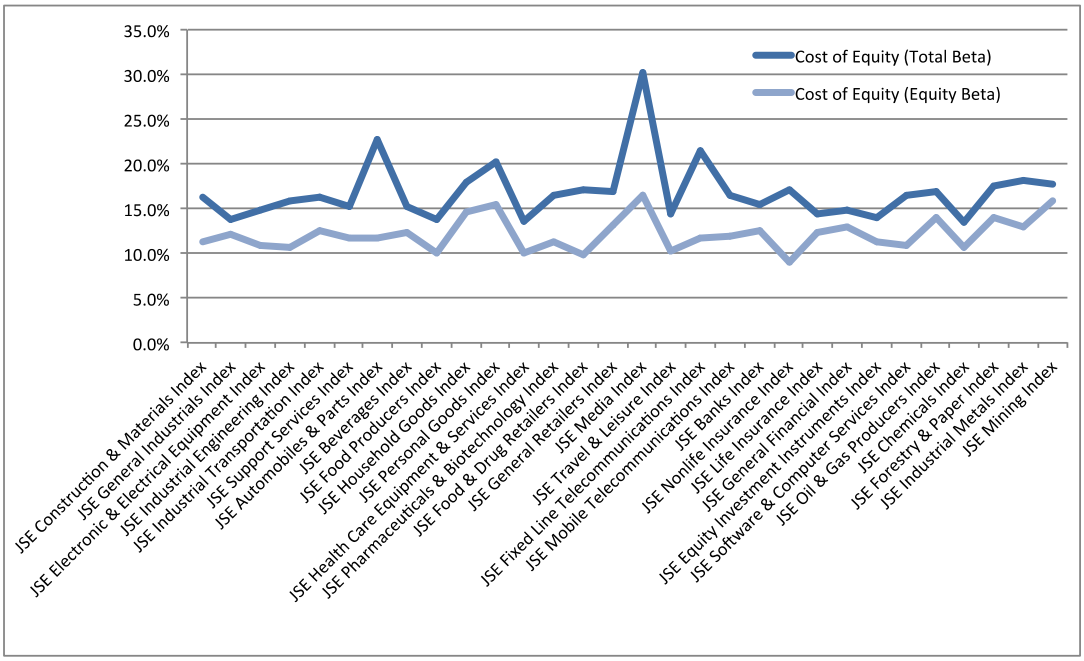

Figure 2: Cost of Equity per JSE Sector Index

The average Sector equity and total betas, which are not weighted on the basis of market capitalisation, as well as the estimated average cost of equity per sector, are set out in Table 1 below:

Table 1: Average total beta, equity beta and cost of equity estimates

Average JSE Sector Indices	Total Beta	Equity Beta	T-test	P-value
Beta	1.61	0.76	6.6604	0.00001
Cost of Equity	16.8%	12.2%	6.3988	0.00001

The average beta is 2.12 times the average equity beta. The average equity beta of 0.76 is low as the average sector beta is not value weighted and the JSE ALSI is disproportionately affected by the high beta of the Mining sector, which forms about 30% of the market capitalisation of the JSE and has an average equity beta of 1.43. The average estimated cost of equity increases from 12.2% to 16.8%, a difference of 4.6% if a total beta approach is employed to determine a sector's cost of equity. The differences in means are statistically significant at the 1% level. The increase of 4.6% represents an increase of 38% relative to the CAPM average cost of equity of 12.2%.

This adjustment is in line with average adjustments to the CAPM cost of equity made by practitioners and reflected in the PWC surveys (2010, 2012). Furthermore, many companies use hurdle rates, which are higher than the weighted average costs of capital (WACC) based on CAPM. This includes companies such as Sasol and Grindrod, which multiplies a CAPM-determined WACC by 1.3, and these companies have *diversified* shareholders.

Therefore the adjustments made by valuation practitioners and companies (even those with diversified investors) indicate that CAPM is not able to accurately determine a company's cost of equity. Although, CAPM is employed, it is adjusted for such factors as a size premium and specific risk factors. These adjustments will often reflect professional judgement.

Does this mean that we consider the total beta approach to be a valid alternative approach to determine the cost of equity of private companies? The total beta approach is based on CAPM and is anchored to CAPM and therefore if CAPM is unable to fully capture systematic risk, then the total beta approach will be unable to capture total risk. Furthermore, it is based on the assumption that investors in private companies are completely undiversified. This will often not be true and the level of diversification will vary for each investor.

Private companies will be of value to listed companies or diversified investors and the valuation of private companies may reflect the views of fully diversified investors as listed companies may acquire the equity shares of such private companies at a premium to the value set by an undiversified investor. Furthermore, future research into the applicability of the Fama-French Three Factor Model (1992) to South African companies may be more relevant to firstly determine the cost of equity of listed companies and thereafter we can make adjustments for a lack of marketability and other factors. The concept of total beta is useful in order to focus on the impact of total risk on required returns but we consider its wider use would be premature until further research is undertaken into its validity and empirical relevance. Calvert and Smith (2011) indicate that the total beta approach does not yet pass the judicial checks for reliability of testimony[57].

Conclusion

This paper explored the concept of Total Beta for determining the cost of equity for companies, which have undiversified shareholders. Whilst the Total Beta method to derive the cost of equity of private companies is subject to continuing debate, it is important to consider the alternative that is often applied in practice, which often consists of adding size and specific risk premiums to a CAPM determined cost of equity. This is set out in the KPMG (2011) and PWC Valuation Methodology surveys (2009/10, 2012). The estimation of these size and specific risk premiums is subject to the possibility that such adjustments are arbitrary and are subject to the skill and experience of a practitioner in deriving the cost of equity of a private company.

The use of a total beta has the advantage that this is based on market data and derived from data provided by independent beta service providers. Yet, the method remains subject to

[57] Smith and Calvert state that "the four court standards for reliability are: (1) whether a theory or technique can be, and has been, tested; (2) whether the theory or technique has been subject to peer review and publication; (3) a techniques known or potential rate of error and the existence and maintenance of standard controlling the techniques operation; and (4) whether a particular technique or theory has gained general acceptance in the relevant scientific community."

debate and controversy in relation to its applicability, which requires an analysis of the diversified nature of a company's shareholdings. The assumption of completely undiversified investors for private companies is often not valid. Yet, CAPM assumes fully diversified shareholders and this condition may often not be met in the valuation of private companies. CAPM has its own empirical problems although it is conceptually appealing and widely used by practitioners at least as a first step to determine a company's cost of equity.

The fact is that the application of Total Beta method is generally not yet accepted in practice or in research studies. Further, there is little empirical testing on comparing returns for private companies relative to the market index over time to evaluate whether the Total Beta approach is valid to predict returns.

It is expected that practitioners will continue to make ad hoc specific risk and size adjustments to a CAPM cost of equity. Whilst, the use of Total Beta may provide a further tool for practitioners to test their specific adjustments to the CAPM cost of equity for private companies, it would be premature to promote the wider use of the total beta approach. It is more useful to further test The Fama-French Three Factor Model for South Africa and the validity of CAPM should be further analysed as the relevance of the total beta approach is tied to the relevance of CAPM.

References

Basiewicz, P.G. & Auret, C.J. (2010), Feasibility of the Fama and French three factor model in explaining returns on the JSE, Investment Analysts Journal, Vol. 71, pp. 13 - 25

Bowie, D.C. & Bradfield, D.J. (1997), Some evidence on the stability of beta coefficients on the JSE, SA Journal of Accounting Research, Vol.11

Bradfield, D. & Hendricks, D., (2012) *Equity Risk Service on the JSE Securities Exchange,* published by BNP Paribas Cadiz Securities, Quantitative Research, June 2012, Vol. 14, No. 2.

Brigham, E.F. & Ehrhardt, M.C.,*Financial Management: Theory and Practice*, 12 edition, Thomson South-Western, 2008, In Chapter 7 Portfolio Theory and Other Asset Pricing Models, p. 254

Butler, P. & Pinkerton, K. (2006), Company-Specific Risk—A Different Paradigm: A New Benchmark. *Business Valuation Review*, Vol. 25, No. 1, pp. 22-28.

Camp, R.C. & Eubank, A.A. (1981), The Beta Quotient: A new measure of portfolio risk, *Journal of Portfolio Management*, 7(4), pp.53-58

Correia, C., Flynn, D., Uliana, E., Wormald, M. & Dillon, J., (2015), *Financial Management*, 8th edition, Juta & Co., In Chapter 7, pp. 7-26

Correia, C., Flynn, D., Uliana, E., & Wormald, M., *Financial Management*, 7th edition, Juta & Co., 2011, In Chapter 4, pp. 4-28

Damodaran, A. (2006), Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd edition, Wiley Finance series, John Wiley & Sons, pp. 57-59.

Damodaran, A. & Margolis, D. (2008), The anatomy of an LBO: Leverage, Control and Value, *CFA Institute Conference Proceedings Quarterly*, September, Vol. 25, No. 3, pp. 16 - 27

Fama E. & French K. (1992) The cross-section of expected stock returns. *Journal of Finance*, Vol. 47 pp. 427-465.

Hitchener, J.R. *Financial Valuation: Applications and Models*, 3rd edition, 2011, Wiley Finance Series, John Wiley & Sons

Kasper, L. (2008), The Butler Pinkerton Model for Company-Specific Risk Premium – A Critique, Business Valuation Review, 27 (Winter), pp. 233-243.

KPMG Corporate Finance, Cost of Capital and Impairment Testing Study: 2011, Empirical survey of South African companies, kpmg.co.za

Mayo, H., (2008), *Investments: An introduction*, 9th edition, Thomson South-Western, 2008, In Chapter 6 Risk and Portfolio Management, p. 174

Petersen, C., Plenborg, T. and Scholar, F. (2006), Issues in Valuation of Privately Held Firms, *Journal of Private Equity*, Vol. 10, No.1, pp. 33-48.

Pratt, S.P. & Niculita, A., (2008), Valuing a Business: The Analysis and Appraisal of Closely Held Companies, 5th edition, McGraw-Hill, 2008, page 200.

Pratt, S.P. & Grabowski, R.J. (2010), Cost of Capital: Applications and Examples, 4th edition, 2010, Wiley Finance Series, John Wiley & Sons

PricewaterhouseCoopers Corporate Finance, (2010) *Signs of the times. Valuation Methodology Survey, 2009/2010*, 5th edition

PricewaterhouseCoopers Corporate Finance, (2012) *An African perspective. Valuation Methodology Survey, 2012*, 6th edition

Smith, C. and Calvert, B., (2011), Company-Specific Risk Premiums: Update on the Scholarly Evidence, Available at SSRN: http://ssrn.com/abstract=1791213 or http://dx.doi.org/10.2139/ssrn.1791213

Tofallis, C., (2008), Investment volatility: A critique of standard beta estimation and a simple way forward, *European Journal of Operational Research*, 187, pp. 1358-1367

Trugman, G. (2008), *Understanding Business Valuation: A Practical Guide to Valuing Small to Medium-Sized Businesses, 3rd edition, 2008, AICPA*

Van Rensburg, P. & Robertson, M. (2003), Size, price-earnings and beta on the JSE, *Investment Analyst Journal*, No. 58, pp. 1-11

Van Rensburg, P. (2002) "Market Segmentation on the Johannesburg Stock Exchange", *Journal of Studies in Economics and Econometrics*, Vol. 26, No. 3

Von Helfenstein, S.,(2009), Revisiting Total Beta, *Business Valuation Review*, Vo. 28, No. 4, pp. 201-223

Walker, M.M. (2010), Evaluating the Butler-Pinkerton Model: Is it better than the Buildup Method?, *Business Appraisal Practice*, 3rd quarter, pp. 22-31

Wisehart, D., (2008) Boston's Battle of the Beta, in *Financial Valuation: Applications and Models* by J.R. Hitchener, Chapter 6, Addendum 3, p. 6

Websites

http://pages.stern.nyu.edu/~adamodar/New_Home_Page/valquestions/totalbeta.htm

www.bvmarketdata.com [Click on the *Butler Pinkerton Calculator* option]

http://www.bvmarketdata.com/defaulttextonly.asp?f=bpmarticles

http://www.pwc.co.za/en/assets/pdf/pwc-valuation-methodology-survey-2010.pdf

MAF013 Towards developing sustainable national health insurance in South Africa

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Abstract

Recently South Africa embarked on a process to implement a National Health Insurance (NHI). Internationally a number of countries have or are in the process of implementing a national health care system. Several countries that introduced the system are however faced with the reality of an unsustainable system. This paper used an archival research method to identify challenges other countries faced in order to ensure the future sustainability of the South African National Health system. The initial analyses revealed that two themes exist when considering why systems are not sustainable. The first theme was the continuous increase in the cost of providing health care, especially due to increases in life expectancy and aging populations. The second theme focused on the provision of adequate financing to sustain the system, especially in the light of the ever increasing cost.

Internationally three main sources are used to finance national health care systems with each country using a different model depending on the country's fiscal capacity. Several countries finance all or most of their health care cost through allocations from tax collections. Countries included in the study made use of different tax collection strategies with some countries making use of targeted sin taxes to support the health care system whilst other merely allocated funds from their general tax collections. The second funding option that is used is 'out-of-pocket payments'. The analysis revealed that there is a fine line between charging too little, which can result in misuse of the system and charging too much with excludes poor people from the system. Some developing countries are dependent on donations to maintain their health care systems (the third financing option). National Treasury has announced that, at least initially, the national health insurance in South Africa will be financed through transfers from the National Revenue Fund to the Department of Health, who is responsible for administering the National Health Insurance. A more sustainable funding model must however be developed to ensure sufficient funds are obtained to maintain the system in the long term.

Key words: National Health Insurance (NHI), out-of-pocket payments, national health care system, sustainable health care

INTRODUCTION AND BACKGROUND

The South African government is in the process of developing and rolling out a National Health Insurance (NHI) with the aim of achieving 'universal coverage' in health care. This project has the potential to improve the lives of the 69.9% of South Africans who are dependent on public health (Statistics South Africa, 2013). Implementing a national health system has internationally proven to be problematic, specifically the development of a sustainable financing model (de la Rosa & Scheil-Adlung, 2007; World Health Organisation, 2012). The main challenges in designing a sustainable health care system are twofold, namely managing the cost incurred to provide the services as well as obtaining the resources required to fund the system.

This principle is based on the principles contained in the basic accounting equation (E = A – L). The change in the equity, assets and liabilities for a period is the result of the income and expenditure for that period ($E_i = i_i - e_i$). The components considered in this paper are based on this basic equation namely the funding required to maintain the system (i_i) and the expenditure to provide the services (e_i). As any National Health insurance does not aim to make a profit at the end of the year it is expected that $i_i = e_i$ (or E_i = R0). Based on lessons from other countries this paper considers the different financing options and specific cost considerations.

Even more so than for other social development programs provided by government, the national health insurance scheme is and will be faced with severe cost pressures. Several of these cost increases (also referred to as medical inflation) are as a result of international improvements in health care, for example, technological advances in equipment used to provide medical care (biotech developments), improvements in drugs used to treat life threatening diseases and scarce resources required to provide required medical services. For the system to be financially sustainable the *fiscus* (i.e. National Treasury) must find adequate resources to finance the cost, not only initially, but also in the long term. Internationally both developing and developed countries have and are facing challenges in ensuring the sustainability of their national health care programs.

The research objective of this paper is to consider problems experienced by other countries in developing a financially sound national health care program. A review of historical data was undertaken to identify what actions (successful or unsuccessful) other countries took to provide sustainable funding. It should be noted that the historical background of a country has a significant impact on the challenges and solutions developed by each countries. This research paper firstly provides a theoretical framework for developing a financially sustainable national health insurance. This will be followed by a brief overview of the historical development of the South African health care system and how it has contributed to the current state of health. This is an important aspect of the research as it provides the country context to be considered when developing the systems. In the final part of the paper experience will be draw from countries which are currently operating, introducing or have previously operated a national health care systems. These countries will be analysed to consider problems experienced in their health care systems, how these were addressed and if policy makers can learn any lessons from it. This information can provide the South Africa government with valuable insight in ensuring universal coverage is obtained. According to Tanner (2008) by reviewing and analysing the data and problems experienced in other countries important lessons can be learnt.

RESEARCH PROBLEM AND METHOD

The research objective of this paper is to consider problems experienced by other countries in developing a financially sustainable national health system. Although cost is an important challenge in all systems, some of these costs are beyond the control of the scheme, for example, new equipment required to treat diseases and the global increase in chronic diseases. Some countries have however identified controllable costs that must be addressed in the development and implementation of a national health care system. The biggest challenge faced in developing a financially suitable health care system is obtaining the required funding. In order to achieve the objective of this paper the following research questions was formulated:

What lessons can be learnt from other countries to ensure that
the South African National Health Insurance is financially sustainable?

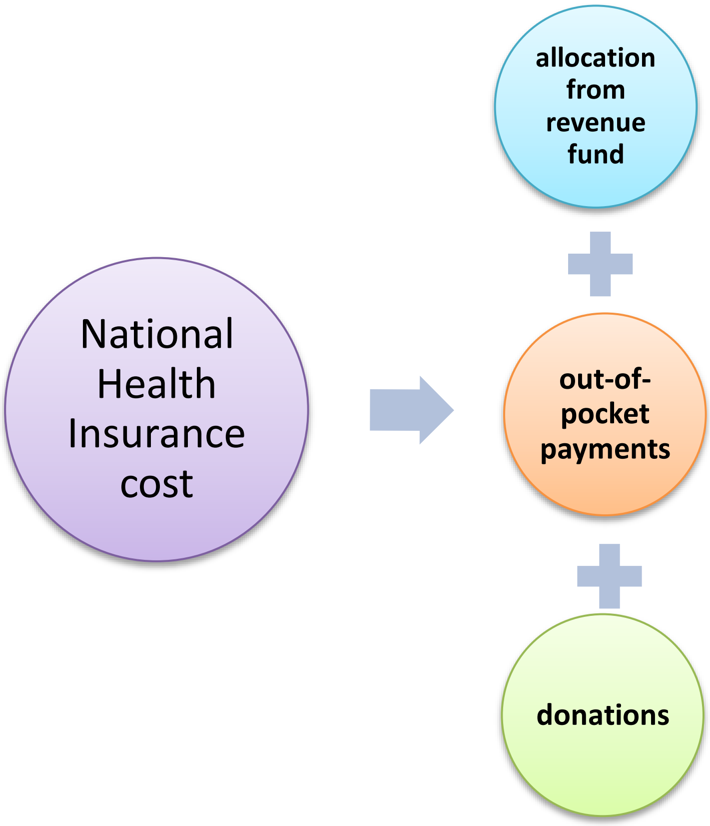
The paper adopted an interpretive research approach as it seeks to understand and describe events (Babbie & Mouton, 2009). An archival research method was used as historical documents, reports and article were examined to identify information relevant to the topics under review. The documents were obtained from library searches conducted with the assistance of a librarian as well as seminal work used by other authors in their documents, reports and articles.

DEVELOPING A SUSTAINABLE NATIONAL HEALTH CARE SYSTEM

Internationally, the high and rising costs of providing medical services have been identified as risks in establishing a sustainable national health care system (Mossialos, *et al*, 2002). The World Health Organization (2010) recommended that low income countries spend approximately US$60 per capita per annum in order to reach the Health Millennium Development Goals by 2015. It is interesting to note that in 2012 South Africa spent US$645 per capita per annum (World Bank, 2012) which far exceeds the WHO's recommendation yet it is still not achieving universal coverage. This high spending in South Africa indicates that not only are managing costs a problem in the system but also significant funding will be required to develop a sustainable National Health Insurance.

Internationally countries use various sources to obtain the funds required to maintain their national health care systems, each with its own benefits and disadvantages. Goodwin (2008) identifies the following major revenue sources that can be used: allocations from revenue funds (funds collected from direct taxes, indirect taxes, social health insurance premiums), out-of-pocket payments made by users and loans, grants or donations. Each national health care system should find a balance between expenditure incurred and funding received (required). The funding required to sustain the health care system can either be from one source or a combination or mix of different sources (Mills & Bennett, 2002). Figure 1 illustrates how the system should be balanced.

Figure 1 Balancing a national health care system's finances



According to figure 1, after determining the costs required by the NHI to provide the health care services, the next step is to determine which source(s) should be used to finance these costs. Internationally the three main funding options used are (World Health Organisation, 2010; Yisa, Fatiregun & Awolade, 2004; Mills & Bennett, 2002; de la Rosa & Scheil-Adlung, 2007; Fineberg & Hunter, 2013):

- *Allocations from revenue fund*: Also known as single payer funds. A portion of the revenue collected by the government, normally through different forms of taxes, is allocated to the health care system.
- *Out-of-pocket payments:* The system is also referred to as user charge system or pay as you go system. Under this system a portion of the cost to provide the services is recovered from the user at the time of usage.
- *Donations:* International organisations like the United Nations support the health care in certain countries by donating either money or medical supplies to the country.

The resources allocated as well as the services obtained may significantly affect health care in a country (Jönsson & Musgrove, 1997). The importance of managing the cost of the system is critical as evidenced by a World Health Organization report in 2010 where it is estimated that globally between 20% and 40% of all health spending worldwide is wasted through inefficiency and the lack of implementation of policies (World Health Organization, 2010).

The World Health Organisation (2010) reiterates that when developing a sustainable health care system it is critical to understand the context within which the system must operate. Two aspects should be considered namely the current services being provided and the funding options available. The next section provides a brief overview of the history of health care in South Africa and its impact on the current state of health.

THE HISTORY OF THE SOUTH AFRICAN HEALTH CARE

The World Health Organization states that health care is a basic human right that a just society (through its government) is obligated to provide, as far as possible, to all its citizens (World Health Organization, 2010). The South African history is permeated with discrimination based on race and gender (Coovadia, Jewkes, Barron, Sanders & McIntyre, 2009). Prior to the 1994 democratic elections, South Africa's health system was biased and fragmented (Coovadia, *et al* 2009; Van Rensburg and Benatar, 1998; Phatlane, 2006).

Even before democratisation various committees (the 1994 Healthcare Finance Committee, the 1995 Committee of Inquiry and the 2002 Taylor Committee) recommended the establishment of a national health system (Dhai, 2011; McIntyre, Baba, & Makan, 1998). Following the recommendations in 2002 by the Taylor Committee the National Health Act was passed in 2004 which provided a framework for a single health system for all of South Africa. More than a decade later this has not yet been realised. However, the proposed implementation of a National Health Insurance started the process of assessment to address the current situation, as well as the challenges in the South African health system.

Despite the fact that South Africa spent 8.8% of its GDP on health care in 2012, it performed poorly if measured against the health millennium goals of the World Health Organisation (WHO Report, 2010; Vega, 2013). The reason for this can partly be found in the fact that 4.1% of GDP is spent in the private sector and 4.2% in the public sector. The 4.1% spent in the private sector caters for the needs of 8.2 million people which accounts for 16.2% of the population. The other 4.2% of the budget caters for the needs of 42 million people which accounts for 84% of the population. (World Bank Statistics, 2012).

To improve the services provided in the public health care system in the long term, it is imperative that the national health insurance being implemented is sustainable. A pre-requisite for a sustainable system is that it should be adequately funded to provide and maintain the health care services provided, and this brings us back to the purpose of this study the Minister of Finance announced that the system will be funded through transfers from government until alternatives have been investigated (National Treasury, 2013).

Although National Treasury is responsible for managing the government's income and expenditure, the specific expenditure incurred is managed by a specific department, in this case the Department of Health.

As part of the process of implementation, Government has announced that the National Health Insurance would be introduced over a 14-year period and will require the following funding:

2012	R125 billion
2020	R214 billion
2025	R255 billion

(National Treasury, 2013)

From the brief overview it is clear that the South African health system faces many challenges in providing adequate service to all its residents in order to meet its objects of universal coverage. In South Africa the funding required to sustain the health system poses various challenges including wide-spread poverty that limits the use of out-of-pocket payments as a source of funding and this in turn leads to a decline in revenue collected by government. The next section analyses the problems experienced in implementing a national health care system (either national health insurance of similar scheme).

RECOMMENDATION WHEN IMPLEMENTING A NATIONAL HEALTH CARE SYSTEM

Introduction

This section considers the findings by studies investigating the implementation of national health care systems in other countries. There are inevitable comparability concerns when comparing the experience in other countries even when considering a similar group of countries. What is culturally acceptable in one country may not be acceptable in another country. The population distribution, employment patterns, perceived corruption in the system and the levels of literacy all contribute to the success of a system. For all these reasons, the financing and management of a health care system may work well in one society may not work well in another (Abel-Smith, 1985). Yet despite these limitations, valuable insights can be obtained when analysing successes and failure of other countries that have implemented a new system, such as a national health system (Mills & Bennett, 2002).

At the turn of the millennium several low and middle income countries considered implementing a health care system or needed to sustain or improve their existing systems, e.g. China (Bloom & Xingyuan, 1997), Thailand (Tangcharoensathien, Supachutikul, & Lertiendumrong, 1999; Nitayarumphong & Pannarunothai, 1998; Khoman, 1997), Vietnam (Ensor, 1999), Indonesia, Philippines, Bangladesh (Harpham & Tanner 1995), Kazakstan (Ensor, 1999), Russia (Sheiman, 1995), Bosnia, Romania (The InterHealth Institute, 1998), Hungary (Donaldson & Gerad, 1993; Deppe & Oreskovic, 1996) and the Czech Republic (Deppe & Oreskovic, 1996). Some countries are still in the process of implementing their systems or deciding to postpone the implementation of their systems. The results presented in this section are limited to those countries, including high income countries, which have implemented a national health insurance or similar system and for which research results have been published.

For each of the countries a short overview of some of the important features of the system are provided followed by the aspects South Africa should consider when implementing their National Health Insurance. It should be noted that due to the limited scope of the paper, the overview provided does not aim to provide a comprehensive discussion of all the features of the system under review.

South Korea

Already in the 1960's the Republic of Korea began building infrastructure to support health care (Mathauer, Xu, Carrin & Evans, 2009). Since 1989 universal coverage was at the heart of the political agenda and in 2010 this was achieved (universal coverage in excess of 98.5%; Jeong, 2010). One of the key events that lead to this achievement was the 2000 change in legislation that integrated more than 300 individual insurers into a single national fund (Kwon, 2003). This change resulted in a more equitable distribution of resources and a reduction in the out-of-pocket payments (Kumar, 2011). The current system uses compulsory wage-based contributions, medical aid schemes and out-of-pocket payments.

Lessons from South Korea

- The single fund provided strong economies of scale that reduced the cost of health care in the country (McIntyre, 2011).
- The out-of-pocket payments hampered patients from seeking certain medical treatment which in the long term led to an increase in the number of people with chronic diseases or requiring hospitalisation (Kumar, 2011).
- To reduce the high cost of hospital care for chronic diseases (for example HIV/AIDS and TB) a well-developed community-based chronic disease management programme should be introduced at primary care facilities (Blecher, Kollipara, DeJager, & Zulu 2011).

Thailand

Thailand's socio-economic conditions are dominated by an informal economy (World Health Organization, 2007). Initially Thailand had numerous health schemes with inefficiencies prominent in all of these schemes (De la Rosa & Scheil-Adlung, 2007). In 2002 a universal coverage scheme known as the "30 bhat scheme" was introduced. In terms of the scheme a person only had to pay 30 bhat (approximately $0.70 US in 2002) per medical visit or hospital admission, as the cost of health care was mainly financed through a combination of payroll, general and sin taxes. The effect of this scheme was that coverage increased to 95% of the population (Chanwongpaisarn, 2010).

Lessons from Thailand

- Sustainability should be planned for by identifying and earmarking additional sources of funding such as an additional or a portion of a specific sin tax. These taxes should be aimed at products that increase the future cost of health care for example tobacco (Tangcharoensathien, 2011).

- Good governance forms the corner stone of success, including decision-making mechanisms, developing capacity building and communication policies that are geared towards the patient (Tangcharoensathien, 2011).

Ghana

After independence in 1957 Ghana's health care system was a no fee system as it was mainly financed through external donor support and general taxation revenue (Eghan, 2011). Since the 1980's fees to cover part of the costs of government facilities were introduced. This saw a simultaneous increase in the number of private health care providers (McIntyre, *et al*, 2008). The high out-of-pocket cost and lower heath care coverage lead to the introduction of the National Health Insurance System in 2003, with the aim of providing basic health care services to residents (De La Rosa & Scheil-Adlung, 2007). The National Health Insurance Scheme was funded through premiums and registration fees which were supplemented by a 2.5% mandatory contribution from formal sector worker pension's contributions and 2.5% health insurance levy (Eghan, 2011).

Lessons from Ghana

- Collaboration with international agencies and donors is essential to ensure technical and financial assistance is obtained to service poor communities (De La Rosa & Scheil-Adlung, 2007).
- Mixed financing mechanism must be used to obtain a health system that provides universal coverage, but is still affordable. Out-of-pocket payments reduce the unnecessary use of medical services (De La Rosa & Scheil-Adlung, 2007).
- The successful implementation of a health care system requires proper enforcement of legislation (both in terms of levies imposed as well as out-of-pocket cost).
- One of the major challenges identified by Ghana's authorities is the lack of adequate information technology capacity. Due to an increase in the volume of claims and a weak communication strategy to update stakeholders and suppliers several problems were experienced. Current improvements to the system include the rollout of regional offices to provide administrative services (Eghan, 2011).
- During the implementation of the system, investment must be made in good governance, public awareness campaigns and strengthening the capacities required in the system (Eghan, 2011).

Germany

Since the first introduction of Social Health Insurance in Germany in 1883 it took more than 100 years to reach its objective of universal coverage (Barnighausen & Sauerborn, 2002; Rompel, 2011). The German health system was founded on the principles of free choice of providers (patients have the freedom to choose to be a member of the publicly administered Social Health Insurance or a private health insurance). The German system offers more than 100 insurance options but all with largely unified compensation system for the providers.

Membership options and payment are based on the individuals need, with elements being subsidised to ensure access by the poor (Reid, 2011).

Lessons from Germany

- Every country needs a clear vision of its objectives which in turn needs to be communicated to all stakeholders and supported by legislation to ensure that human rights and patient safety are protected (Reid, 2011).
- Emphasis should be placed on efficiency to ensure value for money and in generating resources to sustain the system (Rompel, 2011). In Germany adequate and almost equal access to benefits was achieved within a diverse environment with measures to ensure effective cost containment.
- Different options can exist in one health care system. Although additional benefits exist in private medical funds more that 87% of the population belong to the public Social Health Insurance (Reid, 2011).

Australia

Australia has for several decades had a mix of public and private health care. In the early 1970's, 80% of the population belonged to a private health insurance (Sayer, Miller, Charles, Scahill, Horn, Bhasale, & McGeechan, 1999). This changed since 1975 when a universal tax-financed health insurance was introduced (Maynard & Dixon, 2002). Under the public system everybody has free access to medical care in public hospitals (with some out-of-pocket costs charged for some services). It should be noted that private health insurance does not discriminate based on health status and can provide lifetime health coverage if taken up early (Mooney, 2011).

Lessons from Australia

- Inequalities in access to health services can mainly be attributed to high transport costs and long distances to travel for health care services (Pulver, 2010).
- A lack of accountability in the Australian system results in shifting blame for problems. Therefore accountability should be enforced by governmental laws to ensure success (Mooney, 2011).
- Policy makers and those charged with implementation need to monitor demand led services as these resources tend to be abused if not linked to a cost. However, patient payments need to be kept as low as possible as unaffordable patient payments have shown to undermine the objectives of universal coverage (Mooney, 2011).

Duckett and Jackson (2000) point out that caution must be applied when considering the Australian model as their policies and intervention's to achieve universal coverage are more radical and comprehensive than other countries and could result in the South African government subsidizing more high income earners.

United States of America

Despite having the highest spend on health care (both overall and per capita) the US is the worst performing industrialized country when measuring health care using indices such as infant mortality, life expectancy, and access to health care (Barr, 2011).

In the 1930's and the 1950's a national health care plan was not introduced as it was considered to be too far reaching and expensive. In the 1960's and 1970's the health care system was extended to provide health care for the elderly and the poor (Barr, 2011). As health care costs continued to rise, more and more people were being left without health insurance. In 2010 the Affordable Care Act and a companion reconciliation bill (so called 'Obama care') was passed which promised affordable health insurance to more than 30 million Americans (Westmoreland, 2011).

Lessons from the United States of America

- The US system has very high voluntary prepayments and is challenged with significant levels of fragmentation limiting access for all. Cost must be controlled as far as possible (McIntyre, 2011).
- Some form of mandatory prepayment (probably in the form of a tax) is essential to ensure sustainability of affordable health care (McIntyre, 2011).

CONCLUSION

When introducing a national health system no country starts afresh. All countries have some form of system in place which was developed within the country's historical constraints and opportunities. Building on existing services a national health care plan can be developed to achieve universal coverage, but several countries have shown that achieving this objective is a difficult and long process. When developing a national health care system (like South Africa's National Health Insurance) it is imperative to plan for sustainability. The analysis of other countries' health care systems identified two core components that must be considered. The first being the cost incurred in providing the health care which must be adequately managed. The second aspect that needs to be considered is the funding model that will be used as government, and effectively the taxpayers of a country, will have to fund shortfalls in the system.

The sustainability of health care is problematic due to the expenditure pressures many countries face. The first factor contributing to this is the global nature of health care products and services. Improvements in health care have resulted in increases in life expectancies, which in turn result in increases in chronic diseases associated with age. Some countries' experiences indicate that accountability is a key requirement for an effective system. The results also suggest that economies of scale can reduce the cost of providing health care, provided that adequate infrastructure exists and is managed appropriately. When developing the fiscal policy dealing with health care sufficient funds should be allocated to develop the necessary infrastructure and the management systems as required by the **Public Finance Management Act 2012**.

The fiscal policy should provide for a sustainable funding model which is critical to the success of any health care system. The consensus amongst authors is that a mixed funding model should be used to ensure that the system provides universal coverage at an affordable price. Out-of-pocket payment should be used to prevent the misuse of the benefits that are provided. It is however important to note that experience from other countries found that high out-of-pocket payment could result in certain people, especially the poorer section of the population, being excluded from the health care system.

Several countries mainly finance their health care system through transfers from government (through their annual budget). The funds so transferred are either from general tax collected or by identifying a specific tax, for example, a sin tax, that can be used to maintain and improve the system, or a combination of the two. National Treasury indicated that initially the funding required to implement the system will be provided from general tax collection. Considering the projected cost of the National Health Insurance fiscal policy will have to be adapted to find additional tax revenue or the effectiveness of the system will have to be improved to reduce the cost.

BIBLIOGRAPHY

Barbie, E. and Mouton, J. 2009. *The practice of social research*. Cape Town: Oxford University Press South Africa.

Bärnighausen, T. and Sauerborn, R. 2002. One hundred and eighteen years of the German health insurance system: are there any lessons for middle-and low-income countries? *Social Science & Medicine,* 54(10): 1559-1587.

Barr, D.A. 2011. *Introduction to US health policy: the organization, financing and delivery of health care in America*. JHU Press.

Blecher, M., Kollipara, A., DeJager, P., & Zulu, N. (2011). Health financing. *South African Health Review*, 29-48.

Bloom, G., & Xingyuan, G. (1997). Health sector reform: lessons from China. *Social Science & Medicine*, *45*(3), 351-360.

Chanwongpaisarn, L. 2010. *Essays in public health insurance in life-cycle economies*. Boston University.

Coovadia, H., Jewkes, R., Barron, P., Sanders, D. and McIntyre, D. 2009. The health and health system of South Africa: historical roots of current public health challenges. *The Lancet*, 374(9692): 817-834.

De la Rosa, J. and Scheil-Adlung, X. 2007. *Enabling transition to formalization through providing access to health care: the examples of Thailand and Ghana*. Geneva: International Labour Organisation (ILO) Social Security Department.

Deppe, H. and Oreskovic, S. 1996. Back to Europe: back to Bismarck? *International journal of health services*, 26 (4): 776-802.

Dhai, A. 2011. Healthcare reform in South Africa: A step in the direction of social justice. *South African Journal Of Bioethics And Law, 4*(2), 48. doi:10.7196/sajbl.181

Donaldson, C. and Gerard, K. 1993. Economics of Health Care Financing: The Visible Hand. New York: St.

Duckett, S.J. and Jackson, T.J. 2000. The new health insurance rebate: an inefficient way of assisting public hospitals. *The Medical Journal of Australia*, 172 (9): 439-442.

Eghan, K.E. 2011. *National Health Insurance conference: "Lessons for South Africa".* National Consultative Health Forum. Department of Health, Republic of South Africa, pp 21.

Ensor, L. 2013. SA 'achieving more positive health outcomes'. *Business Day*. Available at: http://www.bdlive.co.za (accessed on 20 June 2014).

Fineberg, H.V. and Hunter, D.J. 2013. A global view of health—an unfolding series. *New England Journal of Medicine*, 368(1): 78-79.

Goodwin, N. 2008. *National health systems: overview*. London, UK: Elsevier Inc.

Harpham, T., & Tanner, M. (Eds.). (1995). *Urban Health in Developing Countries: Progress and Prospects*. Earthscan.

Jackson Pulver, L. R., Haswell, M. R., Ring, I., Waldon, J., Clark, W., Whetung, V., & Sadana, R. (2010). Indigenous health: Australia, Canada, Aotearoa, New Zealand and the United States: laying claim to a future that embraces health for us all. *World health report*.Jönsson, B. and Musgrove, P. 1997. Government financing of health care. *Innovations in Health Care Financing*: 41-65.

Khoman, S. 1997. Rural health care financing in Thailand. *World Bank Discussion Papers*: 183-194.

Kumar, A. 2011. *National Health Insurance conference: "Lessons for South Africa".* National Consultative Health Forum. Department of Health, Republic of South Africa, pp 16.

Kwon, S. 2003. Healthcare financing reform and the new single payer system in the Republic of Korea: social solidarity or efficiency? *International Social Security Review*, 56(1), 75-94.

Mathauer Inke, X. K, Carrin, G. and Evans, D. 2009. *An analysis of the health financing system of the Republic of Korea and options to strengthen health financing performance*. Geneva: World Health Organization.

Maynard, A. and Dixon, A. 2002. Private health insurance and medical savings accounts: theory and experience. In: *Funding health care: options for Europe*, 109-127.

McIntyre, D., Garshong, B., Mtei, G., Meheus, F., Thiede, M., Akazili, J., & Goudge, J. (2008). Beyond fragmentation and towards universal coverage: insights from Ghana, South Africa and the United Republic of Tanzania. *Bulletin of the World Health Organization*, *86*(11), 871-876.

McIntyre, D., Baba, L. and Makan, B. n.d. Eq*uity in Public Sector Health Care Financing and Expenditure in South Africa: An Analysis of Trends between 1995/96 to 2000/01*. Technical Report to Chapter 4 of the 1998 South African Health Review. Health Systems Trust: Cape Town.

Mcintyre, D.I. 2011. *National Health Insurance Conference: Lessons for South Africa*. National Consultative Health Forum, Department of Health, Republic of South Africa.

Mills, A. and Bennet, S. 2002. Lessons on the sustainability of health care funding from low and middle-income countries. In: Mossialos E, Dixon, A., Fuguras, J. and Kutzin, J. (eds). *Funding health care: options for Europe*. Milton Keynes: Open University Press, pp. 206-225.

Mooney, G. 2011. *National Health Insurance conference; "Lessons for South Africa".*

Mossialos, E., Dixon, A., Figueras, J. and Kutzin, J. 2002. *Funding health care: options for Europe*. European Observatory on Health Care Systems. Buckingham, Philadelphia: Open University Press.

National Treasury. 2013. Budget Review. Pretoria.

Nitayarumphong, S. and Pannarunothai, S. 1998. Achieving universal coverage of health care through health insurance: the Thai situation. *Achieving universal coverage of health care.* Nontaburi: Ministry of Public Health: 257-280.

Phatlane, S.N. 2006. *Poverty, health and disease in the era of high apartheid: South Africa, 1948-1976*. Phd of Literature and Philosophy. Pretoria. University of South Africa.

Reid, S. 2011. *National Health Insurance conference:"Lessons for South Africa"*. National Consultative Health Forum. Department of Health, Republic of South Africa, pp 25.

Rompel, M. 2011. *National Health Insurance conference: "Lessons for South Africa".* National Consultative Health Forum. Department of Health , Republic of South Africa, pp 25.

Sayer, G., Miller, G., Charles, J., Scahill, S., Horn, F., Bhasale, A., & McGeechan, K. (1999). *Bettering the evaluation and care of health: general practice activity in Australia 1998-99*. Australian Institute of Health and Welfare.

Statistics South Africa (StatsSA). 2013. *Mid-year population estimates*. Pretoria: Statistics South Africa.

Tangcharoensathien, V., Supachutikul, A. and Lertiendumrong, J. 1999. The social security scheme in Thailand: what lessons can be drawn? *Social science and medicine,* 48: 913-923.

Tanner, M. 2008. *The grass is not always greener: a look at national health care systems around the world.* CATO Institute.

Van Rensburg, H.C.J. and Benatar, S.R. 1998. 'The legacy of apartheid in health and health care', in Cockerham, W.C. et al. (eds), *Readings in Medical Sociology*. New Jersey: Prentice Hall.

Vega, J. (2013). Universal health coverage: the post-2015 development agenda. *The Lancet*, *381*(9862), 179-180.

Westmoreland, T.M. 2011. *National Health Insurance conference: "Lessons for South Africa".* National Consultative Health Forum. Department of Health, Republic of South Africa, pp 28.

World Bank. 1993. *World Development Report 1993: Investing in health. Washington:* Oxford University Press.

World Bank. 2012. *World Development Indicators 2012*. Washington, DC: World Bank. Available at: https://openknowledge.worldbank.org/handle/10986/6014 (accessed on 23 March 2013).

World Health Organisation. 2012. *National health accounts statistics*. Available at: http://www.int/nha/country/annex (accessed November 2012).

World Health Organization. 2007. *World Health Statistics 2007*. Available at: www.who.int/whosis/shostat2007_6healthsystems_nha.pdf (accessed 20 September 2013).

World Health Organization. 2010. *Constraints on scaling up the health Millennium Development Goals: costing and financial analysis gap analysis.* Geneva: World Health Organization (Background document for the Taskforce on Innovative International Financing for Health Systems). Available at: http://www.internationalhealthpartnership.net//CMS_files/documents/workinggroup_1_ technical_background_report_(world_health_organization)_EN.pdf (accessed on 16 May 2012).

Yisa, I. O., Fatiregun, A. A., & Awolade, V. (2004). User charges in health care: A review of the concept, goals and implications to national health systems.*Annals of Ibadan Postgraduate Medicine*, *1*(2), 49-54.

MAF016 The Determinants of corporate cash holding levels: Evidence from selected South African retail firms

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Abstract

With corporate cash holding on the rise, there is a need to know at what levels does cash holdings become detrimental to corporate value. Studies have identified the following as determinants of corporate cash holdings; firm size, growth opportunities, liquid asset substitutes, capital expenditure, leverage, cash flows and dividend payments, little literature are available especially from the context of South African retail industry. Hence, this study undertakes to investigate the determinants of corporate cash holding in the South African retail industry. The paper uses panel data to test the relationship between cash holding level and its determinants. This study intends to extend existing financial literature by adding empirical evidence from a growth geared African country into the ongoing discussion of corporate cash holdings.

Keywords: pecking order theory; trade-off theory, free cash flow theory; precautionary motives, speculative motives and transaction motives.

INTRODUCTION

There has been a notable increase in corporate cash holding levels with recent reports showing that Apple and GM Motors were each holding more cash than the US treasury. But just how much cash is too much and what informs the decision on how much cash a firm should hold. This study undertakes to investigate what determines the levels of corporate cash holdings. A majority of literature on corporate cash holdings has also focussed on the determinants of corporate cash holdings. For instance, Kim, Mauer and Sherman (1998) studied the determinants of cash holdings for some US companies and found that firms with higher costs of external financing, firms with unstable earnings, together with firms with relatively lower returns on assets hold larger cash reserves. Opler, Pinkowitz, Stulz and Williamson (1999) also show that small firms and firms with good growth opportunities and volatile cash flows hold huge amounts of cash. The majority of these studies, however, have mainly focussed on western countries with a few studies focusing in Asia ((Pinkowitz, Stulz and Williamson, 2014; Fischer, Marsh and Brown, 2014; Uyar and Kuzey, 2013; Horioka and Terada, 2013; Islam, 2012). Little or no research has been done in African countries especially South Africa. The purpose of this study is to investigate the determinants of cash holdings of the JSE listed non-financial companies.

But why do companies hold cash? Several studies in the US, and of late, in Europe, Asia and a few developing countries have focused on corporate cash holdings based on the following theories; the trade-off theory (Myers, 1977), the pecking order theory (Myers and Majluf,

1984) and the free cash flow theory. Although there has been a number of cash holding studies (Kim et al., 1998; Pinkowitz and Williamson, 2001; Opler et al., 1999; Bates et al., 2009; Ferreira and Vilela, 2004 and Hardin et al., 2009), we are not aware of any study targeting cash-holding determinants in Africa, a continent with high growth potential. This study attempts to address that gap and to encourage further research on the determinants of cash holdings for the firms operating in this developing continent albeit in South Africa. This study should extend existing financial literature by adding empirical evidence from a growth geared African country into the ongoing discussion of corporate cash holdings.

PROBLEM STATEMENT

Corporate policies regarding cash and cash equivalents such as marketable securities have significant importance in the finance theory and applied corporate world (Ali and Yousaf, 2013). Managers are expected to hold an optimal level of cash that will enhance shareholder value. With corporate cash holding on the rise, there is a need to know at what levels does cash holdings become detrimental to corporate value. Users of financial information should be able to understand the reasons why a particular firm is holding cash and whether it is in the best interest of the shareholders or not. Studies in the US, Europe and Asia had identified the following as determinants of corporate cash holdings; firm size, growth opportunities, liquid asset substitutes, capital expenditure, leverage, cash flows and dividend payments (Pinkowitz, Stulz and Williamson, 2014; Fischer, Marsh and Brown, 2014; Uyar and Kuzey, 2013; Horioka and Terada, 2013; Islam, 2012). Although much study has been done on the determinants of corporate cash holding, little literature are available especially from the context of South African retail industry. Hence, this study undertakes to investigate the determinants of corporate cash holding in the South African retail industry.

AIM OF STUDY

The aim of this study is to evaluate the determinants of corporate cash holdings among South African Retail Firms.

RESEARCH HYPOTHESIS

1. Hypothesis 1: Cash holdings are negatively related to firm size
2. Hypothesis 2: Cash holdings are negatively related to leverage
3. Hypothesis 3: Cash holdings are positively related to Investment opportunities
4. Hypothesis 4: Cash holdings are negatively related to liquid asset substitutes
5. Hypothesis 5: Cash holdings are negatively related to capital expenditure

LITERATURE REVIEW

Introduction

Recent studies (Faulkender and Wang, 2006; Dittmar and Mahrt-Smith, 2007) have confirmed the Jensen (1986)'s free cash flow hypothesis that an additional dollar that a firm holds is actually less than one dollar. Daher (2010) argues that underlying these finding is the assumption that excess cash conceals the benefits of externally sourced funds as the monitoring tool as well as allowing managers to extract personal benefits. Be that as it may, recent studies have provided empirical evidence of an increasing trend in the cash holdings for US firms (Bates, Kahle and Stulz, 2009) and for European Union (EU) firms (Ferreira and Vilela, 2004).

In perfect markets with no information asymmetry, taxes and agency and/or transaction costs, companies have no need to hold cash as there are no benefits or costs of allocating cash. When internal cash held by the firm is not sufficient to meet the needs, the firm can obtain external financing at fair prices that do not compromise growth and investment (Gomes, 2012). In such a frictionless world, cash holding would have no effect on firm value () nor on shareholder wealth (Opler et al., 2001). Markets are however imperfect and these imperfections cause external financing to be more expensive than internal resources. Therefore in the real world of imperfect markets, corporate cash holding is a strategic component of the corporate capital structure.

As highlighted by Gomes, 2012, empirical literature has focused greatly on the determinants of corporate cash holdings. These include US firms (Dittmar and Mahrt-Smith, 2007; D'Mello, Krishnaswami and Larkin, 2008; Foley, Hartzell, Titman and Twite 2007; Harford, Mansi and Maxwell, 2008; Opler, Pimkowitz, Stulz and Williamson, 1999); UK setting (Ozkan and Ozkan, 2004; Al-Najjar and Belghitar, 2011); European single countries (Bigelli and Sanchez-Vidal, 2012 - Italian firms; Bruinshoofd and Kool, 2004 - Dutch firms; Deloof 2001 - Belgian firms; Drobetz and Gruninger, 2007 - Swiss non-financial firms; Garcia-Teruel and Martinez Solano, 2008 – Spanish firms); EU firms (Ferreira and Vilela, 2004; Pal and Ferrando, 2010) and cross-country comparisons (Al-Najjar, 2012; Dittmar, Mahrt-Smith and Servaes, 2003; Guney, Ozkan and Ozkan, 2007; Pinkowitz and Williamson 2001; Ramirez and Tadesse, 2009). Studies have examined the trade-off theory, perking order theory, the agency theory and motives of holding cash in trying to gauge the optimal level of cash holding.

In the next section, we begin to expound the three theories of cash holdings that have been used to explain the pattern of cash holdings across various industries. The same theories are expected to be relevant even to the retail industry.

THEORETICAL GROUNDING

Trade off theory

According to Afza & Adna (2007), management with a focus to maximise shareholder wealth should aim to achieve an optimal cash holding level by weighting the marginal benefits and marginal costs of holding cash. Opler et al. (1999) as well as Ferreira and Vilela (2004) explains two fundamental motives that make cash-holding beneficial. Firstly, the transaction motive reasons that firms will retain cash in order to minimise the transaction costs that are normally incurred in raising funds as well as to avoid having to liquidate assets to make payments. The cash held becomes a buffer between the company's sources of and uses of funds and this reduces costs (Ferreira and Vilela, 2004). Lastly, the precautionary motive is when a firm hoards cash in anticipation of turbulent times, when financial markets may not be an attractive source of funding for growth (Myers and Majluf, 2004). This motive pushes smaller firms that have riskier cash flows and firms with good opportunities for investment and growth to hold more cash (Kim, Kim and Woods, 2010). Holding more cash, however, comes with a price as firms have to pay a liquidity premium in the form of the lower rate of return generated by these stored liquid assets. Shah (2012) posits that the main cost of holding cash is the opportunity cost of capital invested in liquid assets. Firms that hold cash incur opportunity costs, such as forfeited profitable investments (Ferreira and Vilela, 2004).

The Pecking order theory

The pecking order theory of Myers and Majluf (1984) refutes the existence of an optimal cash level. Rather they envisage that the existence of asymmetric information between firms and capital markets makes external funds more expensive for firms and thus incentivizes the holding of cash. To avoid these costs, firms will opt to use internal resources to finance investments before tuning to safe debt and risky debt and lastly, if needs be, equity (Ferreira and Vilela, 2004). This order of financing was also found in the survey by Myers (2003) and is supported Demir, Seref Kalayci and Ismail Celik (2007), and Chikashi Tjuji (2011). Key to this theory is the presence of asymmetric information which implies that management has more information that the external stakeholders. This makes external financing more expensive than internal sources as the less informed stakeholders would want to be compensated for the risk of not having equal information. Against this backdrop, managers with a mandate to increase shareholder wealth would prefer to finance their new investment projects in this order, firstly with internal resources, secondly with cheap debt and lastly with equity. Cash holding is thus a result of the different financing and investment decisions suggested by the pecking order of finance (Dittmar, Mahrt-Smith and Servaes, 2003).

The Free cash flow theory

In financial management, the agency theory addresses the problems that often arise between the principal (shareholders) and the agent (management). The agent has the duty to act and conduct the firm’s business in a way that maximises shareholders’ wealth. Researchers have found that among other things, there is often a conflict between maximising shareholders’ wealth and maximising management remuneration. Another conflict arises when the principal and the agent have contrasting risk outlooks (Thieu and Ngoc, 2013). “In the first case, conflicts occur when actual decisions of managers are out of control of shareholders because they are difficult and expensive to verify. In the second situation, when judgements of risk are diverse seriously, shareholders and managers cannot be unanimous how to settle the problem, conflicts arise unavoidably.” (Thieu and Ngoc, 2013:7). Hence Daher (2010)’s conclusion that as regarding corporate cash holdings, the agency theory include two suppositions: a) the free cash flow hypothesis b) the risk-reduction hypothesis.

Free cash flow hypothesis

The free cash flow hypothesis by Jensen (1986) objects to the existence of a target cash level. According to Harford (1999), corporate cash holdings are perceived as free cash flows since they can be used to serve management’s own interests at the expense of the shareholders. The free cash flow hypothesis thus envisages that managers are more inclined to stock up cash as it increases the amount of assets under their control. This in turn affords them more unrestricted investment prerogative. With a stockpile of cash, managers can easily avoid the capital markets and do not have to comply with their transparency requirements regarding possible investments (Ferreira and Vilela, 2004). “Managers’ selfish behaviours can include lavish spending on luxurious offices and unjustifiable mergers and acquisitions. Hence, excess cash can create overinvestment problems because they may be used to fund negative NPV projects.” (Thanatawee, 2011:53). This agrees with Dittmar and Mahrt-Smith (2007)’s notion that shareholders ascribe an inferior value to a marginal dollar of cash reserves when there is a greater probability for agency problems in a firm.

Risk-reduction hypothesis

While the free cash flow hypothesis has received fear coverage in the agency theory literature, only a few researchers have focussed on the risk reduction hypothesis namely Opler et al. (1999), and Zhenxu Tong (2006). The risk reduction hypothesis addresses the conflict that might occur when management and the shareholders have different risk attitudes. “Since corporate cash holdings can be viewed as risk-free investments, a risk-averse and self-interested CEO can allocate more firm assets to corporate cash holdings to reduce firm risk at the expense of giving up some positive NPV but risky projects, which is not beneficial to shareholders.” (Tong, 2006:3). In his study, Tong (2006) investigates how the CEO’s risk incentives influence the level of a firm’s cash holding where the CEO’s risk incentive is measured by “the sensitivity of the value of executive stock options (ESO) to the volatility of stock returns ESO risk incentives.” (Tong, 2006:4). His findings were that firms with lower ESO risk incentives were holding more cash reserves confirming the hypothesis that risk-averse and self-seeking managers will channel company assets to cash holdings with the effect of reducing firm risk in a fashion that is detrimental to the shareholders.

MOTIVES OF HOLDING CASH

Further to the above theories, there are various other motives that influence firms to hold cash. The most outstanding, in literature, of these are the transaction motive, the precautionary motive and the tax motive. These are discussed below.

The transaction motive

The transaction motive is a classic model for optimal demand for cash which gained popularity in the 60s with the major proponents being Miller and Orr (1966).The reasoning behind this motive is that in a case where a firm does not have cash to meet its financial obligations or to invest in lucrative projects, the firm either has to approach the financial markets or dispose noncash financial assets to raise the finance needed. The cash needed to make these payments is the optimal demand for cash. Unfortunately, these fund-raising transactions oftentimes incur significant costs (Bates et al., 2009). Saddour (2006), states that in a world of imperfect markets a firm can circumvent transaction costs by increasing its cash holding.

The precautionary motive

Firms tend to retain more cash if they anticipate future cash flows to be volatile and access to capital markets to be costly (Bates et al, 2009). According to Mikkelson and Patch (2003), if future cash flows are expected to be volatile firms will increase their cash holding as a way of hedging against the future uncertainty. These differential cash holdings are known in literature as precautionary cash holdings. Evidence by Almeida, Campello and Weisbach (2004) suggest that the precautionary motive is largely relevant to financially distressed firms than to their unstressed peers. “Financially unconstrained firms have no use for cash, but also face no cost of holding cash (i.e., their cash policies are indeterminate).” (Almeida, Campello and Weisbach, 2004: 1778). Ham and Qui (2006) extend the study of Almeda et al (2004) by investigating how firms’ precautionary cash holdings, cash flow uncertainty and financial constraints influence one another. Their study bases on the findings that firms, “whose primary aim is to maximise the present value of dividend pay-outs to investors,” are often short of ways of diversifying from future cash flows uncertainty and have to choose between current and future investments (i.e. there is an intertemporal trade-off between current investments and future investments). Thus the limitation in diversifying from future cash flows uncertainty and the resulting intertemporal trade-off between present and future investments are seen as the drivers of precautionary cash holdings. Han and Qui (2007) concur with the findings of Almeida et al. (2004) in that financially unconstrained firms do not have precautionary motives of holding cash. Rather they find that distressed firms are unable to commit to future investments without cutting back on current investments as they have depleted their external financing resources. Therefore the precautionary motive of cash holding results in a direct relationship between cash flow volatility and cash holdings and an inverse relationship between “current investments and cash flow volatility for financially constrained firms.” (Han and Qui, 2007:3). Lastly, a model by Acharya, Almeida and Campello (2007) posited that if there is a low correlation between operating income and growth opportunities, firms would rather hoard more cash than to pay off debt.

The tax motive

While the transaction motives and the precautionary motives have largely been cited in empirical literature to be driving corporate cash holdings, Hartzell, Titman and Twite (2005) found evidence that the cash holdings by US transnational firms were in part influenced by the repatriation taxes. The US imposes taxes on the income earned by the foreign operations of local firms, although they award tax credits for the foreign taxes paid by the foreign operations. In this study, Hartzell et al. found that US firms with foreign subsidiaries tend to hold the cash earned in the foreign subsidiaries to avoid taxes upon repatriation. These overseas subsidiaries will use their earnings to invest in profitable projects with the remainder of the earnings being kept as cash reserves. Foley, Hartzell, Titman and Twite (2007) found that firms exposed to greater tax burdens on repatriated earnings will hold more cash. While Hartzell et al. (2005)’s and Foley et al. (2007)’s findings apply to the US and many other countries, the South African tax laws are different.

RESEARCH HYPOTHESIS: THE DETERMINANTS OF CASH HOLDING

Firm size

Larger firms are more likely to hold less cash than smaller firms as they have easier and cheaper access to capital markets and as such minimal borrowing constraints when compared to smaller firms (Ozkan and Ozkan, 2004). This agrees with the trade-off theory that predicts a negative relationship between firm size and the corporate cash holding.

There is considerable literature that upholds this negative relationship between firm size and cash-holding level. In a study focussing on spin-offs D'Mello., Krishnaswami, S., Larkin, P.J. (2008) found the same negative relationship, as did Harford et al. (2008) and Bates et al. (2009). Based on these theoretical and empirical findings, we hypothesize a negative relationship between size and cash holdings. In this study, firm size is measured using the natural logarithm of total assets (TA). The logarithm is chosen in order to reduce the significant asset variance across the retail firms (J. Kim et al., 2011).

H1: Cash holdings are negatively related to firm size

Leverage

Both the trade-off and the pecking order theories envisage a negative relationship between cash holdings and leverage. Bates et al. (2009) and Ferreira & Vilela (2004) concur with Opler et al. 1999) that firms with high debt ratios have low cash reserves as they have to pay out their outstanding debts. Highly levered firms are likely to hold less cash as they are more subject to monitoring by the capital markets to prevent unfettered management discretion Ferreira and Vilela (2004). This negative relationship has been supported by Bates et al. (2009), D'Mello et al. (2008) and Hardin et al. (2009). On the strength of these theoretical and empirical findings, we hypothesize a negative relationship between cash holding level and leverage.

H2: Cash holdings are negatively related to leverage

Investment opportunities

Pinkowitz and Williamson (2007) found that cash is more valuable for firms with greater and more volatile investment opportunities. As such firms with valuable growth opportunities are more likely to demand greater funds in the future to finance these investments (D'Mello et al., 2008). Unfortunately these firms operate in opaque informational environments and this asymmetry pushes up the cost of external funding. While the escalation of the cost of external financing increases the probability of missing out on profitable investment opportunities, holding liquid assets , like cash, allows firms to exploit profitable opportunities whenever they arise (Hardin et al., 2009). Consequently, firms with higher investment opportunities will hold larger amounts of cash to reduce the likelihood of giving up on these lucrative opportunities. The precautionary motive theory also supports the notion that there is a positive relationship between investment opportunities and cash holdings as firms with more investment opportunities will hold onto more cash because adverse shocks and financial distress are dearer to them than to firms with fewer investment opportunities (Bates et al., 2009). Complimentary arguments of this relationship were raised by Ozkan and Ozkan (2004), while empirical studies (Bates et al., 2009; Ferreira and Vilela, 2004; Hardin et al., 2009) confirm the positive relationship between investment opportunities and cash holdings. We thus hypothesize a positive relationship between investment opportunities and cash holdings in restaurant firms.

Market-to –book value ratio is used as a proxy for retail firm's investment opportunities.

> H3: There is a positive relationship between cash holdings and investment opportunities

Liquid asset substitute

While the pecking order theory posits that there is no relationship between cash holding levels and liquid asset substitutes, the trade-off theory predicts a negative relationship between two variables. Liquid asset substitute can easily be turned into cash more cheaply than any other asset (Ozkan and Ozkan, 2004), hence the more liquid asset substitutes a firm has the lower its cash reserves. Essentially these non-cash liquid assets can be treated as substitutes for cash (Bates et al., 2009) and firms with plenty of these liquid asset substitutes can rely on them instead of capital markets (Ozkan and Ozkan, 2004). J Kim et al. (2011), Hardin et al. (2009) and Ferreira and Vilela, (2004) provide empirical evidence that liquid asset substitutes have a negative relationship with firm's cash holding levels. We therefore hypothesize that there is a negative relationship between liquidity and cash holdings of retail firms in South Africa. Like previous studies (J. Kim et al. (2011), Hardin et al. (2009) and Ozkan and Ozkan (2004), this study uses the ratio of net working capital minus cash to total assets to quantify a retail firm's degree of liquid asset substitutes.

> H4: There is negative relationship between cash holdings and liquid asset substitutes

Capital expenditure

Kim et al. (2011) found that firms with greater capital expenditures hold less cash. Bates et al. (2009) argued that an increase in capital expenditures leads to lower cash holdings as improvements made through the capital expenditures can be used as collateral when borrowing. This negative relationship concurs with the pecking order theory that says capital spending consumes firm's cash. The trade-off theory however suggest a positive relationship since firms with high capital expenditure are likely to hold cash as a buffer against transaction costs that arise from using external capital. Taking sides with the perking order theory as well as empirical findings a negative relationship between cash holding level and capital expenditure is hypothesized. Again this study like Bates et al. (2009) and Kim et al. (2011) measures a retail firm's capital expenditure using the ratio of capital expenditure to total assets.

> H5: There is a negative relationship between cash holdings and capital expenditure

METHODOLOGY

Research design

In order to understand the determinants of corporate cash holding from theoretical and empirical evidence, this study used a quantitative research method. Like other studies before (J. Kim et al., 2010; Ozkan and Ozkan, 2004 and Ferreira and Vilela, 2004) we use panel data analyses to test the relationship between cash holding level and its determinants.

Population and Sampling

The population of this study is made up of the retail firms listed on the Johannesburg Stock Exchange (JSE). There are 26 listed retail firms. The sample consists of 10 randomly selected retail firms of the 26 listed retail firms on the Johannesburg Stock Exchange (JSE). As the 10 firms were a random sample of the retail firms listed on the JSE, it can be assumed that they are representative of the entire population.

Data Collection

The data for the variables used in the study were collected from annual reports available on the selected firms' websites. Data on market to book ratio, the measure for growth opportunities, was collected from Inet BFA. A panel data of year 2009-2014 was used for the empirical testing of the hypothesis discussed under the literature review section.

Data Analysis

Following Shah (2012) and Islam (2012), the study used the multiple regression analysis to conduct data analysis.

ANALYSIS AND DISCUSSION

Multiple Regression Analysis

Multiple regression analysis was utilised to measure the influence of the explanatory variables on the dependent variables (see Appendix 1 and 2). The results are presented in table 4.1 below.

Table 4.1

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	1.0275	0.340755	3.0154	0.00421	***
Size	-0.225124	0.0933331	-2.4120	0.02000	**
Lev	-0.00573302	0.0259686	-0.2208	0.82627	
MTV	-0.00882373	0.00887469	-0.9943	0.32541	
Liqasset	-0.00920737	0.0731819	-0.1258	0.90044	
Capex	0.0142554	0.0191407	0.7448	0.46028	

Table 4.1 shows that of all the explanatory variables, only Size has a significant influence on Cash holding. The hypothesised relationships are found to be valid for Size, Lev and Liqasset but an opposite relationship is found for MTV and Capex.

The observed relationship can be expressed as:

$$Cash = 1.028 - \mathbf{0.225}\boldsymbol{Size} - 0.006Lev - 0.009MTV - 0.009L\boldsymbol{iqAst} + \mathbf{0.014}\boldsymbol{Capex} + \mathbf{0.34}$$

Table 4.2

Mean dependent var	0.135341	S.D. dependent var	0.116899
Sum squared resid	0.263887	S.E. of regression	0.076578
R-squared	0.672700	Adjusted R-squared	0.570873
F(14, 45)	6.606310	P-value(F)	5.45e-07
Log-likelihood	77.66106	Akaike criterion	-125.3221
Schwarz criterion	-93.90696	Hannan-Quinn	-113.0339
Rho	0.046411	Durbin-Watson	1.661991

Test for differing group intercepts -
Null hypothesis: The groups have a common intercept
Test statistic: F (9, 45) = 5.84965
with p-value = P (F (9, 45) > 5.84965) = 2.28132e-005

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square (2) = 1.1866
with p-value = 0.552501

The adjusted R-squared value shows that about 57% variation in cash holding levels is explained by the variations in the five variables; firm size, leverage, investment opportunities, liquid asset substitutes and capital expenditure.

The analysis find that only firm size had a significant negative relationship with cash holdings confirming the trade-off theory as well as Ozkan and Ozkan (2004) who posits that larger firms have easier and cheaper access to capital markets and as such faces minimal borrowing constraints. These larger firms will thus hold less cash than smaller firms as they can get cash easily and cheaply elsewhere. Leverage, Investment opportunities, liquid asset substitutes and capital expenditure have no significant influence on cash holding levels.

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

Conclusion

This study concludes that the major determinant of corporate cash holding in the JSE listed retail firms is firm size. The other four variables (leverage, investment opportunities, liquid asset substitutes and capital expenditure) do not show any significant influence on cash holdings. The studied variables explain 57% of the variation in cash holdings, while the remaining 43% variation is owing to unknown factors that were not studied in this study.

The study seems to support the trade-off theory of holding cash since smaller firms will hold more cash either as a precautionary and transaction motive.

Limitations

This study only focuses on a sample of South African retail firms and such the findings can only be generalised to retail firms similar to the ones used in the study. The sample size of 10 firms is also very small.

Recommendations

Future research should look at other sectors other than the retail industry.

References

Afza, T., Adnan, S.M. (1998). Determinants of Corporate Cash Holdings: A Case Study of Pakistan. Available: https://editorialexpress.com/cgibin/conference

Al-Najjar, B. (2012). The financial determinants of corporate cash holdings: Evidence from some emerging markets. International Business Review 22(1): 77-88.

Al-Najjar, B., Beighitar, Y. (2011). Corporate Cash Holding and dividend Payments Evidence from Simultaneous Analysis. Managerial and Decision Economics 32: 231-241.

Bates, T.W., Kahle, K.M., Stulz, R.M. (2009). Why do US firms hold so much more cash than they used to? The Journal of Finance 64(5): 1985-2021.

Bigelli, M., Sanchez-Vidal, J. (2012). Cash holdings in private firms. Journal of Banking & Finance 36: 26-35.

Bruinshood, W.A., Kool, C.J.M. (2004). Dutch corporate liquidity management: new evidence on aggregation. Journal of Applied Economics 7: 195-230.

Chikashi, T. (2011). An International Survey of the Evidence on the Pecking Order Theory of Corporate Financing. Business and Economics Research. Available: http://www.macrothink.org/journal/index.php/ber/article/view/952/729.

Daher, M. (2010). The determinants of cash holding in UK public and private firms. Available: http://www.professionalfinancieres.com/docs/2011104904_25--the-determinants-of-cash-holdings.pdfings.pdf.

Deloof, M. (2001). Belgian intragroup relations and the determinants of corporate liquid reserves. European Financial Management 7 (3): 375-392

Dittmar, A., Mahrt-Smith, J. (2007). Corporate governance and the value of cash holdings. Journal of Financial Economics 83: 599-634.

Dittmar, A., Mahrt-Smith, J., Servaes, H. (2003). “International corporate governance and corporate cash holdings. Journal of Financial and Quantitative Analysis 38: 111-133.

D’Mello, R., Krishnaswami, S., Larkin, P.J. (2008). Determinants of corporate cash holdings: evidence from spin-offs. Journal of Banking and Finance 32 (7): 1209-1220.

Drobetz, W., Gruninger, M.C. (2009). Corporate cash holding: Evidence from Switzerland. Finance Markets Portfolio 21: 293-324.

Faulkender, M. and Wang, R. (2006).Corporate Financial Policy and the Value of cash. Journal of Finance 61:1957-1990.

Ferreira, M.A., Vilela, A.S. (2004). Why do firms hold cash? Evidence from EMU countries. European Financial Management 10 (2): 295-319.

Foley, C.F., Hartzell, J., Titman, S., Twite, G.J. (2007). Why do firms hold so much cash? A tax based explanation. Journal of Financial Economics 86: 579-607.

Garcia-Teruel, P.J.M., Martinez-Solano, P. (2008). On the Determinants of SME Cash Holdings: Evidence from Spain. Journal of Business Finance & Accounting 35 (1 & 2): 127-149.

Hardin, W.G., Highfield, M.J., Hill, M.D., Kelly, W. (2009). The determinants of REIT cash holdings. Journal of Real Estate Financial Economics 39 (1): 39-57.

Harford, J., Mansi, S., Maxwell, W. (2008). Corporate governance and a firm's cash holdings. Journal of Financial Economics 87 (3): 535-555.

Islam, S. (2012). Manufacturing Firms' Cash Holding Determinants: Evidence from Bangladesh. International Journal of Business and Management 7(6): 172-184.

Jensen, M.C. (1986). Agency Costs of Free Cash Flow, Corporate Finance and Takeover. American Economic Review 76:323-339.

Kim, C., Mauer, D.C., Sherman, A.E. (1998).The Determinants of Corporate Liquidity: Theory and Evidence. Journal of Financial and Quantitative Analysis 33:335-359.

Kim, J., Kim, H., Woods, D. (2011). Determinants of corporate cash-holding levels: An empirical examination of the restaurant industry. International Journal of Hospitality Management, 30(3):568-574..

Myers, S. (1997). Determinants of corporate borrowing. Journal of Financial Economics 5:147-175.

Myers, S.C., Majluf, N.S. (1984). Corporate Financing and Investment Decisions when Firms Have Information that Investors Do Not Have. Journal of Financial Economic 13:187-221.

Opler, T., Pinkowitz, L., Stulz, R., Williamson, R. (1999). The Determinants and Implications of Corporate Cash Holding. Journal of Financial Economics 52:3-46.

Pal, R., Ferrando, A. (2010). Financing constrains and firm's cash policy in the Euro Area." The European Journal of Finance 16: 153-171.

Pinkowitz, L., Williamson, R. (2007). What is the Market Value of a Dollar of Corporate Cash?" Journal of Applied Corporate Finance 19:74-81.

Pinkowitz, L., Williamson, R. (2001). Bank Power and Cash Holdings: Evidence for Japan. Review of Financial Studies 14:1059-1082.

Pinkowitz, L., Stulz, R., Williamson, R. (2006). Does the contribution of corporate cash holdings and dividends to firm value depend on governance? A cross-country analysis. Journal of Finance 61: 2725-2751.

Ramirez, A., Tadesse, S. (2009). Corporate Cash Holding, Uncertainty Avoidance, and the Multinationality of Firms. International Business Review 18:387-403.

Appendix 1

Advtech

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	1960	114	-717	1646	84
2013	337	98	-9	1398	70
2012	287	58	-35	1132	68
2011	1155	-24	-225	976	62
2010	985	38	-175	853	66
2009	928	40	-177	788	59
2008	799				

Cashbld

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	2616	704	466	873	101
2013	2069	124	520	693	82
2012	1926	488	494	583	65
2011	2137	721	367	552	56
2010	1861	542	358	463	49
2009	1718	348	309	378	42
2008	1605				

Clicks

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	6192	196	81	1772	220
2013	5445	92	371	1602	200
2012	4773	25	345	1505	183
2011	4235	18	170	1415	158
2010	4111	152	172	1384	128
2009	4181	410	81	1362	114
2008	3585				

CMH

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	2574	308	660	214	28
2013	2494	335	594	191	40
2012	2483	395	511	403	25
2011	2177	313	463	391	26
2010	2005	253	433	370	117
2009	1968	212	400	388	101
2008	2248				

JD

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	6852	890	45	6852	488

2013	9903	791	5669	9903	489
2012	5663	1523	7680	5663	307
2011	4682	1486	5805	4682	229
2010	9281	757	4628	9281	187
2009	8926	725	4526	8926	197
2008	8673				

Mr Price

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	6563	2252	3005	1137	215
2013	4898	1150	2588	927	216
2012	4296	1201	2228	744	190
2011	3861	1369	1965	608	197
2010	3610	1171	1595	686	180
2009	3271	661	1096	893	157
2008	2792				

PicknPay

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	14105	870	-1253	5740	948
2013	13022	-270	-1301	3918	896
2012	11819	1272	-1088	5098	808
2011	11101	-432	-538	4079	733
2010	11199	1055	-1313	4849	735
2009	10576	1073	-1297	4336	616
2008	4258				

Shoprite

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	40533	8100	6924	15730	1525
2013	33480	6114	6738	13304	1336
2012	30906	7916	6361	11095	1090
2011	20704	-81	1092	9288	934
2010	17992	1345	-570	7549	839
2009	16739	2811	-258	6049	754
2008	14854				

Spar

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	16946	-533	391	5692	184
2013	9787	1	582	2382	146
2012	9899	842	852	2226	125
2011	8302	-19	1022	2124	123
2010	7529	-446	286	2006	108
2009	6540	-283	294	1856	92
2008	5834				

Woolies

	Total Assets	Cash	Net Working Capital	Fixed Assets	Dep and Amor
2014	22269	1666	678	8192	872
2013	12203	1582	991	6773	755
2012	10069	2145	738	5015	606
2011	9065	2293	1438	4115	513
2010	9010	2917	1182	3663	442
2009	8305	2391	1978	3436	401
2008	11257				

Appendix 2

Advtech

	Cash	Size	Leverage	Investment Opportunity Market to book value	Liquid asset substitute	Capex
2014	0.058163	3.292256	1.11	4.06	-0.42398	5.065282
2013	0.290801	2.52763	0.91	3.22	-0.31751	0.418118
2012	0.202091	2.457882	0.68	3.06	-0.32404	-0.69264
2011	-0.02078	3.062582	0.54	3.45	-0.17403	0.235533
2010	0.038579	2.993436	0.45	3.54	-0.21624	0.132543
2009	0.043103	2.967548	0.52	3.29	-0.23384	0.235294

Cashbuild

	Cash	Size	Leverage	Market to book value	Liquid asset substitute	Capex
2014	0.269113	3.417638	1.04	2.47	-0.09098	0.313195
2013	0.059932	3.31576	0.78	2.53	0.191397	0.116822
2012	0.253375	3.284656	0.87	3.18	0.003115	-0.06832
2011	0.337389	3.329805	1.56	2.72	-0.16565	0.178399
2010	0.291241	3.269746	1.49	2.33	-0.09887	0.111758
2009	0.202561	3.235023	1.77	2.58	-0.0227	0.096573

Clicks

	Cash	Size	Leverage	Market to book value	Liquid asset substitute	Capex
2014	0.031654	3.791831	2.77	10.24	-0.01857	0.177594
2013	0.016896	3.735998	2.78	10.25	0.05124	0.182694
2012	0.005238	3.678791	2.33	10.42	0.067044	0.170248
2011	0.00425	3.626853	3.14	10.36	0.035891	0.068596
2010	0.036974	3.613947	2.36	8.26	0.004865	0.013872
2009	0.098063	3.62128	2.47	4.86	-0.07869	0.198047

CMH

	Cash	Size	Leverage	Market to book value	Liquid asset substitute	Capex
2014	0.119658	3.410609	3.55	2.11	0.136752	0.043304
2013	0.134322	3.396896	2.42	1.81	0.103849	0.02054
2012	0.159082	3.394977	2.69	1.6	0.046718	0.152044
2011	0.143776	3.337858	2.68	2.53	0.068902	0.098753
2010	0.126185	3.302114	2.98	1.93	0.089776	0.078252
2009	0.107724	3.294025	3.31	1.15	0.095528	-0.07963

JD Group

	Cash	Size	Leverage	Market to book value	Liquid asset substitute	Capex
2014	0.129889	3.835817	1.61	0.87	-0.12332	-0.25881
2013	0.079875	3.995767	1.48	0.78	0.492578	0.83507
2012	0.268939	3.753047	1.12	1.05	1.087233	0.275096
2011	0.317386	3.670431	0.98	1.05	0.922469	-0.47085
2010	0.081564	3.967595	0.83	1.42	0.417089	0.060721
2009	0.081223	3.950657	0.8	1.52	0.425835	0.051885

Mr Price

	Cash	Size	Leverage	Market to book value	Liquid asset substitute	Capex
2014	0.343136	3.817102	0.66	9.06	0.114734	0.38383
2013	0.23479	3.690019	0.47	8.21	0.293589	0.19041
2012	0.279562	3.633064	0.54	8.15	0.23906	0.161875
2011	0.354571	3.5867	0.61	6.27	0.154364	0.1241
2010	0.324377	3.557507	0.73	4.9	0.117452	0.158667
2009	0.202079	3.514681	0.81	3.3	0.132987	0.227794

PicknPay

	Cash	Size	Leverage	Market to book value	Liquid asset substitute	Capex
2014	0.06168	4.149373	3.83	7.87	-0.15051	0.155967
2013	-0.02073	4.114678	4.01	9.28	-0.07917	0.177595
2012	0.107623	4.072581	3.57	8.82	-0.19968	0.137465
2011	-0.03892	4.045362	3.79	9.72	-0.00955	0.056701
2010	0.094205	4.049179	3.89	8.9	-0.21145	0.128404
2009	0.101456	4.024321	4.84	8.98	-0.22409	1.628464
		3.629206				

Shoprite

	Cash	Size	Leverage	Market to book value	Liquid asset substitute	Capex
2014	0.199837	4.607809	1.28	4.89	-0.02901	0.256213
2013	0.182616	4.524785	1.13	6.13	0.018638	0.126513
2012	0.256131	4.490043	1.34	6.18	-0.05031	0.545402
2011	-0.00391	4.316054	1.76	6.97	0.056656	0.202646
2010	0.074755	4.255079	1.86	7.03	-0.10644	0.124978
2009	0.167931	4.22373	2.21	5.59	-0.18334	0.177663

Spar

	Cash	Size	Leverage	Market to book value	Liquid asset substitute	Capex
2014	-0.03145	4.229067	4.42	7.26	0.054526	0.750281
2013	0.000102	3.99065	2.01	6.55	0.059364	0.003435
2012	0.085059	3.995591	2.4	7.65	0.00101	0.20742
2011	-0.00229	3.919183	2.25	6.56	0.125391	0.119007
2010	-0.05924	3.876737	2.35	6.77	0.097224	0.167737

2009	-0.04327	3.815578	2.26	5.56	0.088226	0.136784

Woolies

	Cash	Size	Leverage	Market to book value	Liquid asset substitute	Capex
2014	0.074813	4.347701	2.12	8.82	-0.04437	0.896337
2013	0.12964	4.086467	0.9	8.62	-0.04843	0.28692
2012	0.21303	4.002986	0.97	8.36	-0.13974	0.177606
2011	0.252951	3.957368	1	5.54	-0.09432	0.063041
2010	0.323751	3.954725	1.39	5.48	-0.19256	0.13811
2009	0.287899	3.91934	1.46	3.17	-0.04973	-0.22661

PART E – TAXATION

Table of Contents

TAX002 ‘Born free’ to unemployment? A critical review of the Employment Tax Incentive

Crowley, M, Greeff, S & Patel, A

Abstract

Youth unemployment is a serious policy challenge confronting South Africa as 35% of South African youth are unemployed. This paper discusses a tax solution for the long-term employability of South African youth that has recently been implemented- the Employment Tax Incentive (ETI) or Youth Wage Subsidy. This analysis is achieved by performing a critical review of the ETI and comparing the scheme to other similar tax solutions that were implemented in other countries, namely the Polish Intervention Works Programme, Argentinian Proempleo Experiment, the French Apprenticeship System and the Australian Special Youth Employment Training Programme. These comparisons enrich the body of knowledge on the current Youth Wage Subsidy as a possible solution for youth unemployment in South Africa. In the performance of this comparison, this paper identifies that there are many strategies which can improve the current ETI scheme. The research finds that the ETI by itself will not resolve South Africa’s youth unemployment problem as the quality of both basic and higher education needs to improve through education interventions to achieve a sustainable employment future for the youth. However, the research does find that the ETI is an effective way to create some jobs in the economy. The findings also reflect that the implementation of the ETI, if fashioned and revised in light of international policies, is welcomed as it is likely to be a cost-effective measure to decrease unemployment among South African youth.

Keywords: Employment Tax Incentive; Youth Unemployment; Youth Wage Subsidy

1. Introduction and background to the Employment Tax Incentive scheme

Youth unemployment is a serious policy challenge confronting South Africa; the South African working age population consists 55.4% of youth, with the unemployment rate of individuals between the ages of 15 and 34 at an alarming 35.1% (STATS, 2014). Of the unemployed youth in South Africa, 68% of them have not had any form of higher education or training, while 66% have no job experience (National Treasury, 2011). A young person who has had some job experience is three times more likely to find employment, compared to a young person who has had no previous work experience (National Treasury, 2011) so it is imperative that a person is able to find employment in his/her first year of attempt.

The Employment Tax Incentive Act came into effect on the 1 January 2014 in an effort to address this critical problem. The ETI, often referred to as the Youth Wage Subsidy, is designed to assist young South Africans who are unemployed by providing employers with an incentive to hire these ‘poorly-skilled’ individuals who lack experience. The subsidy, although a National Treasury initiative, is administered through the South African Revenue Service (SARS) to ensure no undue administrative tasks are created and to minimise the misuse of the incentive and taxpayer funds by practitioners through potential fraud by creating fictitious employers and employees (National Treasury, 2011). The amounts that employers can claim from the incentive each month are presented in Table 1 below.

Table 1: Details of the ETI per qualifying employee (SARS, 2014):

	Year 1 ETI per month for qualifying employee	**Year 2 ETI per month for qualifying employee**
Monthly remuneration		
R0 - R2 000	50% of monthly pay	25% of monthly pay
R2 001 - R4 000	R1 000	R500
R4 001 - R6 000	R1 000 - (0.5*(monthly pay - R4 000))	R500 - (0.25*(monthly pay - R4 000))

This incentive is important as it lowers the cost of labour to the employer, or assists the employer with paying for training the employee, motivating job creation and resulting in higher employment amongst the youth. The youth who qualify for this incentive would benefit by being employed in a position in which they can gain crucial experience while qualifying for the remuneration incentives of the ETI at the same time. After two years they are expected to have gained the necessary experience to be able to secure a position in which they can earn a marketable salary (SARS, 2014).

Studies conducted by Nevondwe and Odeku (2014) indicate that the continued high youth unemployment rate means that the youth are not acquiring the skills or experience necessary to drive the South African economy forward, resulting in the State's social assistance burden increasing more than ever before (Bhorat, Hirsch, Kanbur & Ncube, 2013). However, according to the National Treasury (2014), the percentage spent on social grants has remained constant since 2010/2011 to 2013/2014 and is expected to decrease to 3.2% by 2016/2017.

This is arguably because the National Treasury recognises that the persisting youth unemployment problem requires short- and long-term policies and measures that include increasing demand for labour, improvement of education and skills, and labour market interventions that result in the increased employability of the youth (National Treasury, 2011). The workplace must therefore be seen as a training ground that should be incentivised with financial assistance from the government, so that small businesses and other companies investing in the youth will create the much needed opportunity for the youth to gain the necessary experience and skills (Broumels, 2014).

In this regard, the shift towards a more labour-intensive growth path is supported by the ETI, in which tax revenue of R1 billion has already been foregone in the 2014 Budget to support this initiative. The ETI will create an estimated minimum of 423 000 jobs for qualifying youth and this is expected to cost approximately R5 billion in tax expenditure over the next three years (National Treasury, 2011). Moreover, the government plans to expand the programme in the years ahead (National Treasury, 2015). Whether or not the ETI scheme will indeed "solve" youth unemployment in the long-term is what this paper examines.

2. Research problem

This research paper aims to evaluate critically the appropriateness of the ETI as a policy option to address the unemployment situation in the long-term in South Africa. This will be answered by analysing and comparing the ETI to similar youth wage subsidies implemented internationally, in an effort to derive any lessons that can be learned for South Africa. This will be further analysed by means of a critical review of the negative and positive impacts of the current ETI system.

3. Objectives of the study

The research provides a critical review of whether the ETI is likely to meet its objectives and encourage long-term sustainable employment of the youth in South Africa. The objective of this paper is primarily to determine whether the ETI system positively or negatively affects unemployment in South Africa and whether any strategies can be learned from other countries' initiatives undertaken.

4. Research Methodology

This paper aims to provide a descriptive analysis of the ETI initiative in South Africa. A normative study and a literature review were conducted and analysed using discussion papers, budget reviews, journal articles, statistics, and Organisation for Economic Co-operation and Development (OECD) publications on youth wage subsidies.

The sample used to gather information about the ETI system is limited to the literature that currently exists on youth wage subsidies in South Africa and various other countries. The results from the existing literature on the ETI and its effect on the permanent employment of the South African youth was analysed and compared to the information gathered on other countries' (Poland, Argentina, Australia and France) initiatives and their outcomes. A broad systematic text analysis was performed to identify patterns and similarities within the existing literature on the ETI and these international countries (Leedy & Ormrod, 2013). These analyses shed insight on the scope of the ETI to improve long-term employment in South Africa.

Five important questions were used in evaluating these foreign wage subsidies, in line with the studies of Dar and Tzannatos (1999). These questions are: *Who received the wage subsidy? What was the duration of the wage subsidy? At what point economically was the wage subsidy implemented? Was the wage subsidy used on its own or in a combination of* *policies such as training? What was the effect that the wage subsidy had on the country or region?* (Dar & Tzannatos, 1999).

5. A comparison to other countries' employment incentive schemes

A summary of the following five countries' incentive schemes can be found in Appendix A at the end of this article.

5.1 General: Other Countries

Governments throughout the world would like to ensure that members of the population, who are able to work, find employment and do not need to be supported by the government through welfare systems (Galasso, Ravallion & Sal, 2001). The World Bank's opinion is that the majority of countries' wage subsidies (including transition and developing countries) do not appear to have an overall advantageous effect on the earnings of workers or on the long-term unemployment rates in those countries. However, wage subsidies utilised in developed countries have had positive implications for earnings and employment, especially with regards to the youth of the country ((Betcherman, Olivas & Dar, 2004). Further, wage subsidies that are utilised in combination with training and job search assistance are thought to have had the most positive impacts on the unemployment of a country ((Betcherman, et al., 2004).

Developed countries in the OECD spend more on Active Labour Market Programmes (ALMP) as a percentage of Gross Domestic Product (GDP) than transition countries (Betcherman, et al., 2004). These include programmes aimed at increasing training and self-employment, public works, employment services (such as job counselling), as well as wage and employment subsidies. This paper compares the ETI initiative to both developed (France and Australia) and transition countries (Poland and Argentina), so as to learn from their reforms and initiatives.

5.2 A lesson from Poland (Transition)

Poland is an example of a country that implemented a wage subsidy known as The Polish Intervention Works Programme (PIWP), which ran from 1992 until 1995. It is generally considered to have been effective in increasing employment in the country, as well as being cost effective (Betcherman, et al., 2004). Poland is classified as a transition country and spends between 0.34% and 0.54% of GDP on ALMP (Betcherman, et al., 2004).

5.2.1 Who received the subsidy?

PIWP allowed for a wage subsidy for employers who employed workers of any age. It is different from South Africa's ETI which is only available for employees aged between 18 and 29 years of age (National Treasury, 2011). The maximum value of the subsidy granted to employers was the level of compensation. This also differs from South Africa's ETI as the maximum value of the subsidy is R24 000 per annum (National Treasury, 2011).

5.2.2 At what point economically was the wage subsidy implemented?

Unemployment in Poland in 1989 was 0%. By 1994 unemployment had risen to 16.4% of the Polish population because Poland moved from a centrally planned economy to a market economy (along with a number of other European countries) (Puhani, 1998). By 1995, the end of the PWIP, the unemployment rate had decreased to 13.6% of the Polish population (O'Leary, 1998).

5.2.3 What was the duration of the wage subsidy?

The PIWP covered the cost of the employees' wages, as well as their insurance, for a period of six months. This differs from the South African ETI which will give employees a wage subsidy for a period of two years (National Treasury, 2011).

5.2.4 Was a combination of policies used with the wage subsidy?

The PIWP allowed an additional 150% subsidy if the employee remained part of the employer's workforce after the six-month period of the wage subsidy. The additional subsidy was an incentive to keep workers employed by the employer after the wage subsidy ended. South Africa's ETI system currently does not contain such provision (National Treasury, 2011). The PIWP aimed to incentivise the employer-employee relationship to continue for as long as possible. Accordingly, the workers participating in the PIWP also had an incentive to stay employed for at least 120 days (Kluve, Lehmann & Schmidt, 1998).

5.2.5 Effectiveness of the wage subsidy.

The effect of the PIWP resulted in a 60% retention of workers after the wage subsidy ended. The chance of finding employment after a person was employed with the PIWP (even if the PIWP was used up) increased by 26% and employment in Poland increased by 13.1% (National Treasury, 2011). The average age of people participating in the PIWP was 23. Women and the less educated people in Poland appear to have profited most from the PIWP (Puerto, 2007).

The negative effects of the implementation of the PIWP were the damaging impact on the earnings of employees who were under the age of 30 (National Treasury, 2011). Kluve, et al. (1998) cite this impact to be a result of the stigmatisation involved with being an individual who qualified for the wage subsidy and/or that employers may have fired workers once the wage subsidy was fully utilised, in order to hire workers that would qualify for the wage subsidy *('recycling of workers').*

5.3 A lesson from Argentina (Transition)

Argentina has a large number of unemployed, unskilled labourers, while skilled labourers are less affected by unemployment, a situation similar to that in South Africa. South Africa and Argentina also have other unemployment trends in common such as a large supply of poorly skilled workers and a strong demand for skilled workers (Centre for the International and Comparative Labour and Social Security Law, 2007).

5.3.1 Who received the subsidy?

The wage subsidy was available to employers whose workers were registered with the State employment agency (Centre for the International and Comparative Labour and Social Security Law, 2007).

5.3.2 At what point economically was the wage subsidy implemented?

The Argentinian Proempleo Experiment (APE) was a well-designed and successful programme that targeted the poorest people of the country; 80% of the people who participated in the APE fell into the lowest income quartile of Argentina. The APE was implemented in two cities in Argentina, namely, Cutral Co and Plaza, both with high levels of unemployment due to the downscaling and privatisation of large factories in the areas (Galasso, et al., 2001).

5.3.3 What was the duration of the wage subsidy?

A wage subsidy could be utilised by the employer of an employee who qualifies for the wage subsidy under the APE for a period of a year and a half (Galasso, et al., 2001).

5.3.4 Was a combination of policies used with the wage subsidy?

The APE was a combination of a wage subsidy with training to decrease unemployment in the country. The workers that participated in the Proempleo Experiment were people who previously received welfare from the Argentinian government (Galasso, et al., 2001).

The first component of the APE was the wage subsidy: an employer who officially registered employees received a wage subsidy of $150 per month for workers who were over the age of 45, and $100 per month for workers who were under the age of 45 years. When officially registering an employee, the Argentinian government paid the social security costs for the employee, which was estimated to be 30% of the employee's gross wages (Galasso, et al., 2001).

The second component of the APE was the training component which comprised two training elements. The first was a three-day mandatory workshop which taught participants skills like how to find work in the area, information about demand for labour in the area as well as skills that could assist them in becoming self-employed. Those who were successful were invited to participate in further training and received another training voucher which enabled them to participate in a training programme. This training programme lasted 2300 hours and taught them identified (community) skills such as welding, house construction, running small businesses, cooking, electrical skills and farming pigs and plants. Participants were able to choose from twelve subjects which were based on the labour demand in the area (Galasso, et al., 2001).

5.3.5 Effectiveness of the wage subsidy.

30% of people who were given the training vouchers did not use these (Galasso, et al., 2001), implying a 70% success rate. Moreover, the amount of money that was spent by Argentina's welfare in the first five months of the year 2000 was only 29% of the welfare that was spent in the last five months of the year 1999 (Galasso, et al., 2001). This reflects the cost-effectiveness of implementing the APE.

The substitution effect of the Proempleo Experiment was limited due to the fact that employers would need to pay a significant severance benefit package to any employee who was fired (National Treasury, 2011). The success of the APE is undisputed and it is the only wage subsidy programme implemented in a developing country that has been evaluated by the World Bank. The evaluation found that, eighteen months after the programme, 14% of people who received the vouchers for the wage subsidy found private sector employment, while the control group who did not participate in the APE achieved a 9% employment rate (Betcherman, et al., 2004).

5.4 A lesson from France (Developed)

France introduced labour market policies at the beginning of the 1970's because of employment challenges. The policies were implemented to assist the unemployed youth by providing financial assistance to entities that provided employment as well as to subsidise training courses these entities offered (Fougere, Kramarz & Magnac, 2000). These policies are essential to the French economy as according to Scarpetta, Sonnet & Manfredi (2010), France's youth faces a challenge with only one individual in every four finding employment.

5.4.1 Who received the subsidy?

The French apprenticeship system is a training scheme which offers individual participants a two year part-time employment in the entity, which is complemented by a part-time education programme in a public training organisation. The apprenticeship programme combines training in a company, based on exercising a professional activity, and teaching, dispensed in an apprentice training centre that leads to obtaining a professional diploma (Fougere et al., 2000). The apprentice's schedule is thus split between the training centre and the company (60-75% of his/her time) where the apprentice is under the authority of a tutor. An age restriction exists: the participants must be in the age group of 16 to 25 years of age (Ministere de 1'Education Nationale France, 2015).

5.4.2 At what point economically was the wage subsidy implemented?

As a result of the Labour Market policies introduced in France, 800 000 French individuals receive financial assistance annually through public programmes, which then allow them entry to a further training course or subsidised employment programme (Fougere et al., 2000). These labour market policies were initially targeted at the general body of unemployed individuals, as well as workers with the highest unemployment risks (such as young adults or older workers), but was subsequently amended to target the 16 to 25 age group only (Fougere et al., 2000).

5.4.3 What was the duration of the subsidy?

The normal duration of an apprenticeship contract is two years, however, it may vary between one and three years. This commences once the apprenticeship contract is signed by the employer and employee (Fougere et al., 2000).

5.4.4 Was a combination of policies used with the wage subsidy?

The French apprenticeship programme combines training in a firm where the participant exercises professional activity and formal educational learning at an apprentice training centre. The apprentice attains a national diploma, while receiving a monthly salary (Fougere et al., 2000). To achieve this, the government provides different incentives for employers to hire apprentices. These range from a tax relief for companies when they take on apprentices to the promotion of the remuneration of the apprentice (which is a minimum pay that is fixed nation-wide based on the apprentice's age and the level reached in the training cycle), amongst others. The French apprenticeship thus supplies theoretical and practical training to apprentices (who have completed compulsory schooling), which leads to a certificate of vocational or technological education at secondary or a higher level (Ministere de 1'Education Nationale France, 2015).

5.4.5 Effectiveness of the wage subsidy.

It is found that individuals in France who have successfully completed the apprenticeship programme (training and diploma) are more frequently hired with long-term employment contracts (Fougere et al., 2000). Some 61% of apprentices go directly into employment upon completion of the training and over 50% of those contracts are permanent/open-ended. Some 3 years after completion, 86% are in employment (Apprenticeship and Traineeship Schemes in EU27: Key Success Factors, 2013).

Bonnal, Mendes & Sofer (2002) show that former apprentices in France experience less long-term unemployment as young adults than those who go through full-time vocational schooling. Similarly, non-apprenticeship training programmes (without educational learning) for unemployed young workers have shown little to no impact on post-training wages or employment possibilities (Fougere et al., 2000). This is also supported by a number of studies reviewed by Ryan (1998, 2001) which show that compared to entering the labour market with only compulsory education, having completed an apprenticeship in France has positive effects in terms of both employment and wage returns. The apprenticeship is most effective as it assists the individual in attaining his/her national diploma as well as gaining some experience in professional activity throughout the duration of the apprenticeship (Fougere et al., 2000). This is in line with the findings of the World Bank, discussed in Chapter 5.1.

5.5. A lesson from Australia (Developed)

In Australia, the aim of the Special Youth Employment Training Programme (SYETP) introduced in the late 1970’s was to enhance the long-term prospects of participants so as not merely to enjoy a brief period of employment, but rather to increase the employability of participants permanently, similarly to the aim of the ETI (Richardson, 1998).

5.5.1 Who received the subsidy?

The SYETP targeted teenagers, unemployed for a minimum period of four months and was subsequently extended to cover individuals between the ages of 15 and 24 (Richardson, 1998).

5.5.2 At what point economically was the wage subsidy implemented?

The SYETP was introduced because of a rapid rise in teenage unemployment, together with the failure of a large-scale direct job creation programme previously implemented (known as Regional Employment Development Scheme) (REDS), which led the Australian government to introduce what was Australia's first wage subsidy (Chapman, 1985).

5.5.3 What was the duration of the subsidy?

The SYETP commenced in September 1970. The programme assisted unemployed youth in Australia for a period of nine years before coming to an end in December 1985 (Richardson, 1998). The subsidies were paid to participating employers at a flat rate that was proportionately greater for low wage workers, as seen with the ETI. The subsidies were valid for periods of 17 weeks at a time. The SYETP could be extended by further periods of 17 weeks to improve the skill sets of the participants, however, they often spent much longer periods than those required for eligibility (Richardson, 1998).

5.5.4 Was a combination of policies used with the wage subsidy?

Similar to the ETI, the SYETP consisted mainly of a subsidy/ incentive with no formal training, even though employers participating in the SYETP had to agree to a 'training plan' for each individual worker. However, this 'training plan' could have been nominal and simple in nature, for example an orientation/induction to the company was adequate in order to suffice as a 'training plan' for the purposes of the SYETP. And so it is generally considered to be an incentive scheme with no formal training (Richardson, 1998).

5.5.5 Effectiveness of the wage subsidy.

Richardson's study finds evidence of significant positive impacts on the probability of participants being employed in subsequent years. Much of this seems to stem from retention of jobs after subsidy expiry, contradicting the concern that firms will simply lay off participants as soon as the subsidy ends. His findings showed that the SYETP appeared to prolong the life of very short duration jobs that would otherwise have terminated before the subsidy expired (Richardson, 1998). His study also finds a great and significant positive effect on the subsequent employment of the individual participants, improving their employability (Richardson, 1998).

6 A critical analysis of the South African Youth Wage Subsidy scheme

6.1 The negative impacts of the ETI system on employment

COSATU has vehemently argued that the introduction of a youth wage subsidy could see the replacement of older workers by subsidised youth (Rankin, 2013). The risk of displacing existing workers that no longer qualify for the ETI is also recognised as employers may favour only those employees who qualify for the ETI (AFBD & OECD, 2012). This may result in the firing of or discrimination against workers who do not qualify for the youth wage subsidy. The ETI may also cause inefficiency in terms of a business's hiring policy as businesses may focus on short-term employment as opposed to longer-term employment.

It is estimated that a minimum of 3.7 million workers in South Africa are vulnerable to being substituted, and of these the majority are unskilled labourers (COSATU, 2012). With an estimated 29% of working South Africans belonging to unions, the remaining 71% of working South Africans will be vulnerable to substitution (COSATU, 2012). The National Treasury has argued that due to the ETI being introduced in South Africa during an economic recovery, the substitution rate would be less. However, there is limited empirical evidence supporting this argument. Another factor opposing the ETI is that employers may be incentivised to keep the wages they pay to employees low in order to qualify for the Youth Wage Subsidy and that it may actually increase poverty in the country in the long run (COSATU, 2012).

Economically, the Youth Wage Subsidy may have a possible adverse effect on competition between businesses. Since businesses that utilise the Youth Wage Subsidy will be able to produce goods and services more cheaply than businesses that do not utilise the ETI, this may cause job losses elsewhere in the economy. This is known as the displacement effect (Centre for the International and Comparative Labour and Social Security Law, 2007). Another aspect that must be borne in mind is that the wage subsidy initiative relies on private firms to create jobs for the youth, as South Africa's public sector only employs a small percentage of youth under the age of 30. This reality is not feasible over the long-term as the private sector is unable to absorb employees at the rate at which the labour force is growing (Yu, 2012).

The introduction of the ETI may also stimulate a 'deadweight loss' to occur in the economy, i.e. the Youth Wage Subsidy may not increase employment among youth any more than would have occurred without the subsidy. The subsidy would still, however, cost the country in the form of the tax deduction given to employers (Centre for the International and Comparative Labour and Social Security Law, 2007).

Further, the ETI does not guarantee that training and skills development will actually occur. The National Treasury has indicated that there will not be requirements in terms of training and skills development due to the fact that these administrative requirements will then be too burdensome for employers to carry, which may cause employers not to make use of the ETI at all (COSATU, 2012). Whether this absence of regulation will affect the overall objective of the ETI remains to be seen (however, this can be compared to the Australian SYETP in Chapter 5.5).

The government may be producing a 'dependency syndrome' as the Youth Wage Subsidy initiative does not address the need for good, quality, sustainable employment (Richardson, 1998). Given this concern, one must bear in mind that South Africa is not unique in its unemployment struggle. Many countries have tried to reform their economic situations: we can, and should, learn from their experiences. A similar 'dependency syndrome' is identified from the French Apprenticeship System (Chapter 5.4) in which training schemes (without formal educational learning) do not seem effective in promoting access to employment under a long-term labour contract in France (Fougere et al., 2000). This evidence indicates that the ETI system in South Africa could be the most heavily relied on initiative to curb youth unemployment and un-employability if educational policies (pre-employment) continue to have a minimal success rate.

The OECD identifies the transition of an individual from the schooling environment to the employment environment as a factor in the unemployment situation (AFBD & OECD, 2012). The ETI system is not able to address this neglect (Scarpetta et al., 2010): firms often require practical or technical skills, rather than only what is taught in the school system. It is acknowledged in the national Budget speech that quality education and training is essential to the growth of South Africa and in solving the unemployment crisis (Gordhan, 2013). However, the ETI may not be the most effective way to address this (AFBD & OECD, 2012). What is also of concern is that there is an inadequate functioning of FET centres which were, ironically, introduced as a mechanism to combat youth unemployment (Bhorat et al., 2013). As long as these remain unchanged, there will continue to be a mismatch of the skills demanded by employers and those available in the pool of unemployed workers (which will continue to result in a higher aggregate of unemployment), indicating that a subsidy without improved education may not be a solution (Richardson, 1998).

6.2 The positive impacts of the ETI system on employment

Rankin, Roberts and Schoer (2012) find that the Youth Wage Subsidy is fair relative to the average starting wage for unskilled labour and that a substantial number of South African firms, currently paying starting-wages, would qualify for the subsidy. The study found that 38% of firms responded positively to the potential hiring of youth with subsidies and indicated that they would, on average, hire an additional seven and a half young workers upon the formal implementation of the ETI system. The remaining 62% of firms indicated that the decision to hire young applicants with wage subsidies would depend on the number of openings that they had available (Rankin et al., 2012).

The Minister of Finance reported during the 2015 Budget speech that the employment of 216 000 individuals in December 2014 was supported solely by the ETI, whilst the most significant level of success of the ETI was during August 2014 at 268 000 young employees (National Treasury, 2015). Thus, the Youth Wage Subsidy has already exceeded the predictions of its inception according to the estimates of National Treasury in 2011, where it was estimated that an average of only 141 000 jobs annually were to be created as a result of the ETI. It must also be identified that a study by Ranchhod & Finn (2014) found that statistically, the initial six months of implementation of the ETI did not show a significant improvement in the employment of South African youth. Therefore, additional job creation can be expected as a result of the ETI in the next two years of the programme.

By example and by comparison with other ALMP initiatives, *'The Jobs Fund'* was established by National Treasury in 2011 to assist in the creation of sustainable employment. To date, a total of R4 billion has been budgeted for this project but it is expected to generate 150 000 jobs only (National Treasury, 2015). By using estimates made by the National Treasury in 2011, the cost of the ETI will be R5 billion and will (prudently) create an estimated 423 000 new jobs (National Treasury, 2011). It is thus evident that the Youth Wage Subsidy is a cost-effective ALMP in comparison to other ALMP initiatives by government.

Other studies have indicated that the ETI will work well in the short term: the youth who have access to a wage subsidy are more likely to be employed for up to two years after receiving the subsidies, compared to those without subsidies (Rankin, 2013). By international comparison, Richardson (1998) revealed that in Australia subsidies appeared to extend the duration of jobs, as well as have significant positive impacts on the probability of participants being employed in subsequent years, contradicting the concern that firms will simply lay off participants as soon as the subsidy ends.

It could be also said that through the ETI system, subsidised young workers will gain experience and skills from employment and potentially become more attractive to employers, even once they no longer qualify for the subsidy, because of the training and experience gained while they were employed with the subsidy (National Treasury, 2011). In addition, on a macro-economic level, inflation may be decreased by the implementation of the Youth Wage Subsidy as the employment in the country increases and the costs that businesses incur in the production of goods and services decrease due to reduced labour costs (Centre for the International and Comparative Labour and Social Security Law, 2007).

Commercially, the ETI may be an attractive solution to a problem currently faced by employers that young and inexperienced workers are expensive to train and these costs are generally borne by the employer. The Youth Wage Subsidy will effectively decrease employment training costs (Levinsohn, 2007). Socially, some positive impacts may also result, such as a decrease in crime and an increase in a person's dignity. This would decrease the burden that these social impact costs have on the country as a whole (Levinsohn, 2007).

Administratively, for a subsidy to work it has to be sufficient to overcome the administrative and other constraints, such as uncertainty involved in hiring inexperienced, young people (Rankin et al., 2012). The ETI has, in this light, been designed to ensure that it is administratively simple (National Treasury, 2013). Politically, the use of a targeted Youth Wage Subsidy can be used by the government to illustrate the priority to assist the youth of the country (Betcherman et al., 2004). Further, the ETI may promote equality within the economy as the gap between skilled and unskilled workers diminishes (Centre for the International and Comparative Labour and Social Security Law, 2007).

The substitution of workers who do not qualify to be subsidised with those who do qualify for subsidies in South Africa may also not be as great as some expect due to the Labour Laws regarding the dismissal of workers (Levinsohn, 2007). The Minister of Finance has stated that SARS will work together with the Department of Labour to ensure that the South African workforce is protected from possibly negative consequences that may arise from the implementation of the ETI, such as the substitution effect (National Treasury, 2013).

The OECD has indicated their belief that the South African Youth Wage Subsidy may have increased potential to alleviate youth unemployment compared to a number of other countries. This is premised on its belief that a form of job search assistance is generally the most efficient policy to decrease unemployment (OECD, 2010). This signifies that policies which address South Africa's large mismatch of skills (discussed earlier) are essential in decreasing unemployment in South Africa.

Continuing with international comparison, the findings of Fougere et al. (2000) show that in France the hiring of poorly-educated, young adults is more heavily subsidised by government within a *community service* job - the objective is not only to increase the employability of these individuals in these areas but to promote these community jobs too (Fougere et al., 2000) which is an aim that could be adopted within the ETI system. Of the many positive aspects noted of the ETI, most notable is the possibility that smaller firms who already employ young workers are expected to grow in response to the implementation of the ETI, given that smaller firms already employ a larger number of young workers and appear to pay lower starting wages (Rankin et al., 2012). Therefore, the growth of small businesses in South Africa could be aided and prioritised as a result of the Youth Wage Subsidy.

7. Conclusion and recommendation

The literature reviewed reveals that South Africa is confronted with an alarming unemployment rate, an education system that faces difficulty in improving the skills levels in the country, and unemployed people without any work experience. The ETI system is thus welcomed, as it is targeted at ensuring that the people who receive the wage subsidy are those that actually need it, which will minimise the 'dependency syndrome' the government is creating, as well minimise the 'deadweight losses' experienced by the government, as suggested by the literature (Chapter 6.1).

Although it could be argued that the ETI may only be one part of an approach to alleviate youth unemployment, ignoring a larger percentage of other unemployed individuals, the literature revealed that the problems encountered by the youth in gaining jobs illustrate the problems faced by all unemployed people in South Africa, and is unlikely to improve if it is not addressed at a youth level. This increase in employment of younger workers, at the expense of older workers, and the fear that workers will simply be fired after the ETI ceases, will indeed be a negative outcome. However, the literature also shows that this 'substitution/ displacement effect' can be limited by protecting the rights of workers, ensuring a minimum wage and by supervising the hiring policy of businesses, which is by and large common practice and a Constitutional right in South Africa. From this it can be seen that the ETI system is appropriately aimed: at present, there exist various learnership programmes to increase the skills of the youth in the country, as well as labour laws in place to protect the rights of all workers in South Africa.

In addition, it is the belief of the National Treasury that job creation is not the only benefit to be generated from the subsidies: the youth will be working, using their time constructively, practical skills will be attained and work experience will be gained by them. Further, other economic benefits such as a decrease in inflation and crime and an incentive for small business growth in South Africa can be expected.

Comparing the ETI system to other international countries, such as Australia and Poland, the findings noted that individuals who participated in an employment initiative had success in continuing to be employed in the future, increasing the confidence in the ETI initiative. When this study compared the ETI to other countries such as France, it found that South Africa can have a greater chance of success in the changing of unemployment if it adopts an educational assistance policy (in addition to an employment training policy), as is the case in France. The literature further shows that a formalised training component combined with a wage subsidy appears to be more successful than just a wage subsidy on its own, as seen in the case of the Argentinian Pompeii Experiment. Alternatively, a retainer post the ETI subsidy should be considered to increase the length of the employer-employee relationship, as in the case of the Polish Intervention Works Programme. This is also another worthwhile factor for South Africa to consider.

The Minister of Finance has stated that one of the main areas of focus for South Africa is to increase employment opportunities by furthering education as well as training and skills development prospects (National Treasury, 2011). Thus the ETI system should be embraced as it intends to serve as a wage subsidy but at the same time to decrease the cost of training and to co-function with improved educational development prospects (if successfully implemented and executed). It is hoped this will then address the concern that both long- and short-term policies need to be enacted to address the education, labour and skills shortage in South Africa, especially the concerns over the mismatch of skills and inadequate functioning of the FET centres.

Overall it appears from the findings of the literature that the introduction of the ETI in its current form is a much-needed, *temporary* yet cost-effective mechanism to assist in the reduction of the youth unemployment rate, and that the positives of the ETI initiative outnumber the negative. Undoubtedly a long-term solution that addresses the lack of quality of both basic and higher education should be investigated and implemented to ensure a sustainable employment future for the youth.

Reducing youth unemployment in South Africa undeniably requires a number of initiatives that include public sector involvement, private sector involvement, and a genuine interest from civil society. Accordingly, a joint venture in which all related parties actively work together to address the various problems resulting from unemployment is required to find a way forward.

8. Further research areas

This paper only focuses on one of the initiatives introduced by the South African government, the ETI scheme. It is clear that there are a number of other tax and non-tax solutions such as the learnership allowance, employment subsidies for special economic zones, etc. which could motivate the creation of job opportunities and enhance training and skills development in South Africa (National Treasury, 2011). It is important to study all of these solutions when considering appropriate ways to alleviate the problem of unemployment as they each have advantages and disadvantages and need to be applied in a way that is relevant to the South African context.

This research is restricted to provide a critical analysis of existing literature on the newly implemented ETI system only and endeavours to investigate literature available, with the assumption that the existing literature is extensive in knowledge on the ETI system from a governmental and private sector view in South Africa. It is recommended that future research be performed once the ETI system is complete to investigate/evaluate the actual effects of the incentive on long-term employment of the youth. As the ETI is relatively new, existing literature can provide only limited information associated with the initiative. The practical implementation of the ETI, however, needs to be studied through information provided by interviews/surveys with people in practice, as existing literature provides no information by job seekers and businesses on the practical implementation.

9. References

AFBD & OECD 2012. African Economic Outlook 2012. Promoting Youth Employment.

Apprenticeship and Traineeship Schemes in EU27: Key Success Factors, 2013, A Guidebook for Policy Planners and Practitioners, (Online) Available at: http://www.bibb.de/dokumente/pdf/Guidebook_Apprenticeship_Schemes_EU27.pdf [Accessed 11 May 2014]

Betcherman, G., Olivas, K.., & Dar, A., 2004. Impacts on Active Labour Programmes: New Evidence from Evaluations with Particular Attention to Developing and Transition Countries. [Online] Available at:

http://info.worldbank.org/etools/docs/library/251019/day6DiscussionPaperSeries0402April6Se1.pdf. [Accessed 14 July 2014].

Bhorat, H., Hirsch, A., Kanbur, R. & Ncube, M. 2013. Economic Policy in South Africa Past, Present, and Future

Bonnal, L., Mendes, S., Sofer, C., (2002) "School-to-work transition: Apprenticeship versus vocational school in France", International Journal of Manpower, 23 (5), 426–442.

Broumels, M. 2014. The Youth Wage Subsidy [Online]. Skills Development Summit. Available: http://www.skillssummit.co.za/articles/the-youth-wage-subsidy [Accessed 15 August 2014].

Centre for the International and Comparative Labour and Social Security Law, 2007. Evaluation of the implications of introducing a wage subsidy scheme in South Africa. [Online] Available at: http://www.treasury.gov.za/publications/other/ssrr/Session%20Two%20Papers/UIF%20-%20Wage%20subsidy%20report.pdf [Accessed 23 April 2014].

Chapman, B. 1985. Continuity and Change: Labour Market Programmes and Education Expenditure. The Australian Economic Review, 71, 98-112.

COSATU, 2012. The Youth Wage Subsidy in South Africa. [Online] Available at: http://www.cosatu.org.za/docs/discussion/2012/YouthWageSubsidy-SA.pdf [Accessed 1 May 2014].

Dar, A. & Tzannatos, Z., 1999. Active Labour Market Programmes: A review of evidence from evaluations. [Online] Available at: http://info.worldbank.org/etools/docs/library/75867/dc2003/proceedings/pdfpaper/module2ad.pdf [Accessed 20 July 2014].

Fougere, D., Kramarz, F. & Magnac, T. 2000. Youth employment policies in France. European Economic Review, 44, 928-942.

Galasso, E., Ravallion, M. & Sal, A., 2001. Assisting the Transition from Workfare to Work: Argentina's Proempleo Experiment. [Online] Available at: http://siteresources.worldbank.org/INTISPMA/Resources/383704-1153333441931/11255_Martin-PROEMPLEO-Evaluation.pdf [Accessed 16 July 2014].

Gordhan, P. 2013. Budget Speech. In: FINANCE, D. O. (ed.). [Online] Available at: http://www.treasury.gov.za/documents/national%20budget/2014/speech/speech.pdf [Accessed 30 April 2014].

Kluve, J., Lehmann, H. & Schmidt, C., 1998. Active Labour Market Policies in Poland: Human Capital Enhancement, Stigmatization or Benefit Churning. [Online] Available at: http://deepblue.lib.umich.edu/bitstream/handle/2027.42/39502/wp215.pdf?sequence=3 [Accessed 18 July 2014].

Leedy, P. D. & Ormrod, J. E. 2013. Practical Research planning and design., New Jersey., Pearson.

Levinsohn, J., 2007. Two Policies to Alleviate Unemployment in South Africa. [Online]. Available at: http://levinsohn.commons.yale.edu/files/2010/10/Policies_SA.pdf. [Accessed 26 April 2014].

Ministere de 1'Education Nationale France, 2015, (Online) Available at: http://www.ec.europa.eu/education/opportunities/vocational/.../france_en.pdf [Accessed 7 February 2015]

National Treasury, 2011. Confronting youth unemployment: policy options for South Africa. [Online] Available at: http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/PDF/Confronting%20youth%20unemployment%20-%20Policy%20options.pdf [Accessed 26 April 2014].

National Treasury, 2013. 2013 Budget Review. [Online] Available at: http://www.treasury.gov.za/documents/national%20budget/2013/review/FullReview.pdf [Accessed 27 April 2014].

National Treasury, 2014. 2014 Budget Review. [Online] Available at: http://www.treasury.gov.za/documents/national%20budget/2014/review/FullReview.pdf [Accessed on 03 April 2015].

National Treasury, 2015. 2015 Budget Review. [Online] Available at: http://www.treasury.gov.za/documents/national%20budget/2015/review/FullReview.pdf [Accessed 03 April 2015].

National Treasury, 2015. Estimates of National Expenditure 2015. [Online] Available at: http://www.treasury.gov.za/documents/national%20budget/2015/ene/FullENE.pdf [Accessed 03 April 2015].

Nevondwe, L. & Odeku, K. O. 2014. The Introduction of Youth Wage Subsidy under the Employment Tax Incentive Act, 26 of 2013 and Job Seekers' Grant. Mediterranean Journal of Social Sciences, 5, 779.

OECD, 2010. OECD Economic Surveys South Africa. [Online] Available at: http://www.treasury.gov.za/comm_media/press/2010/2010071901.pdf [Accessed 24 June 2014].

O'Leary, C. J., 1998. Evaluating the Effectiveness of Active Labour Programmes in Poland. [Online] Available at: http://research.upjohn.org/cgi/viewcontent.cgi?article=1015&context=up_technicalreports&seiredir=1&referer=http%3A%2F%2Fscholar.google.co.za%2Fscholar%3Fq%3DEvaluating%2Bthe%2Beffectiveness%2Bof%2BActive%2BLabour%2BPrograms%2Bin%2BPoland%2BChristopher%2B [Accessed 24 July 2014].

Puerto, O. S., 2007. International Experience on Youth Employment Interventions: The Youth Employment Inventory. [Online] Available at: http://siteresources.worldbank.org/INTLM/Resources/390041188243960961/YEI_LessonsLearned_rev07-06.pdf [Accessed 18 July 2014].

Puhani, P. A., 1998. Advantage through training? A micro econometric evaluation of the employment effects of active labour market programmes in Poland. [Online] Available at: http://econstor.eu/bitstream/10419/24274/1/dp2598.pdF [Accessed 24 July 2014].

Ranchhod, V., Finn, A. (2014).Estimating the short run effects of South Africa's Employment Tax Incentive on youth employment probabilities using a difference-in-differences approach. A Southern Africa Labour and Development Research Unit Working Paper Number 134. Cape Town: SALDRU, University of Cape Town

Rankin, N., Roberts, G. & Schoer, V. 2012. The Challenges that Young South Africans Face in Accessing Jobs: Could a Targeted Wage Subsidy Help?

Rankin, N. 2013. The impact of youth employment incentives and wage subsidies: results of a trial run.

Richardson, J. 1998. Do Wage Subsidies Enhance Employability? Evidence from Australian Youth. London School of Economics and Political Science, 1-37.

Ryan, P., (1998) "Is apprenticeship better? A review of the economic evidence", Journal of Vocational Education & Training, 50(2), 289-329.

Ryan, P., (2001), "The school-to-work transition: A cross-national perspective" Journal of Economic Literature, 39 (1), 34–92.

SARS. 2014. EMPLOYMENT TAX INCENTIVE (ETI) [Online]. Available: http://www.sars.gov.za/TaxTypes/PAYE/Pages/Employment-Tax-Incentive.aspx. [Accessed 5 July 2014].

Scarpetta, S., Sonnet, A. & Manfredi, T. 2010. Rising Youth Unemployment During the Crisis How to Prevent Negative Long-Term Consequences on a Generation OECD Social, Employment and Migration Working Paper No. 106.

STATS 2014. National and provincial labour market: Youth. In: AFRICA, S. S. (ed.). South Africa.

Yu, D. 2012. Youths in the South African labour market since the transition: A study of changes between 1995 and 2011. Stellenbosch Economic Working Papers: 18/12.

10. Bibliography

Burnett, S. 2014. Unemployed youth: ‘time bombs’ or engines for growth? African Security Review, 23, 196-205.

Cooper, R. 2011. Nuts and Bolts of the Proposed Youth subsidy [Online]. SAIT. Available: http://www.thesait.org.za/news/news.asp?id=101742&hhSearchTerms=%22youth+and+wage+and+subsidy%22 [Accessed 12 August 2014].

Department of Social Development, 2010. An overview of South Africa's Social Security System. [Online] Available at: http://webcache.googleusercontent.com/search?q=cache:83Ki_UYgv8IJ:www.issa.int/content/download/136354/2773086/file/2-South-Africa-national%2520monograph.pdf+An+overview+of+South+Africa's+Social+Security+System-+Department+of+social+development&cd=1&hl=en [Accessed 1 May 2014].

Karodia, A. M. 2014. THE MANAGEMENT OF JOB CREATION IN SOUTH AFRICA. Arabian Journal of Business and Management Review, 3, 13-16.

Marrian, N. 2013. Cosatu stands firm on opposing youth subsidy in spite of ANC’s assurances [Online]. Available: https://www.google.co.za/?gfe_rd=cr&ei=GWjuU5G8F8fH8geFnoLwBg&gws_rd=ssl#q=youthstats+number+of+unemployed+youth+south+africa [Accessed 15 August 2014].

OECD, 2013. OECD. [Online] Available at: http://www.oecd.org/about/membersandpartners/ [Accessed 15 July 2014].

OECD, 2013. OECD Economic Surveys: South Africa 2013. [Online] Available at: http://www.treasury.gov.za/comm_media/press/2010/2010071901.pdf [Accessed 5 July 2014].

Schoer, V. & Rankin, N. 2011. Youth Employment, Recruitment and a Youth-Targeted Wage Subsidy: Findings from a South African Firm Level Survey. World Bank, Human Development Unit, Africa Region.

Appendix A:

The following table summarises the findings of the South African ETI, the Polish Intervention Works Programme, the Argentinian Proempleo Experiment, the French Apprenticeship system, and the Australian Special Youth Employment Training Programme, which formed the basis of Chapter 5 of the paper.

	South African Employment Tax Incentive Scheme	**Polish Intervention Works Programme**	**Argentinian Proempleo Experiment**	**French Apprenticeship System**	**Australian Special Youth Employment Training Programme**
Who received the subsidy?	Individuals between the ages of 18 and 29 (SARS, 2014).	Employers that employed workers of all ages (National Treasury, 2011).	Employers that employed workers of all ages who were registered with the state employment agency (Centre for the International and Comparative Labour and Social Security Law, 2007).	Individuals between the ages of 15 and 25 (Fougere et al., 2000).	Teenagers unemployed for at least four months; as well as individuals between the ages of 15 and 24 (Richardson, 1998).
At what point economically was the wage subsidy implemented?	The ETI was implemented as in response to the high rate of youth unemployment in South Africa (National Treasury, 2011).	During the change from the Polish economy from a centrally planned economy to a market economy (O'Leary, 1998).	After large scale retrenchments that resulted in high levels of unemployment (Galasso, et al., 2001).	The labour policies in France were introduced initially in the 1970s when unemployment began increasing (Fougere et al., 2000).	The SYETP was introduced following a rapid rise in unemployment and the failure of a large scale direct job creation programme previously implemented (Richardson, 1998).
What was the duration of the wage subsidy?	The subsidy is available to employers for a three year period, however, each qualifying employee may be subsidized for a maximum period of two years (National Treasury, 2011).	The wage subsidy was available for a six month employment period (National Treasury, 2011).	The duration of the wage subsidy was a year and a half (Galasso, et al., 2001).	The apprenticeship contract is for a period of two years, but it can vary between one and three years (Fougere et al., 2000).	The SYETP was available for a period of nine years in 17 week intervals per participating individual (Richardson, 1998).

Was a combination of policies used with the wage subsidy?	The ETI is a tax incentive offered to employers only, there is no training or educational programmes associated with this incentive (National Treasury, 2011).	An additional subsidy was available if after a six month employment period the employer retained the employee. This additional incentive was used to increase the length of the employer-employee relationship (National Treasury, 2011).	A training programme was combined with the wage subsidy (Galasso, et al., 2001).	The training scheme offers participants part-time work in a firm, in conjunction with part-time education in a public training centre in the pursuance of a national diploma (Fougere et al., 2000).	The employer was required to submit a training plan, however the SYETP was a subsidy with no formal training needed to be effective (Richardson, 1998).
Effectiveness of the wage subsidy.	National Treasury believes two years is sufficient as it should align the large wage and productivity of these unskilled, inexperienced employees (National Treasury, 2011). The effectiveness of this initiative is yet to be determined.	Employment in Poland increased by 13.1%, and 59.7% of the programme participants were retained after the end of programme (National Treasury, 2011).	The use of the combination of training as well as the wage subsidy increased employment by 7.5%, and substitution effects were limited due to cost of severance pay if fired. (National Treasury, 2011).	A significant increase in the employment of low-income employees initially, however the training programmes offered have little to no impact on their post-training wages or other employment possibilities (Fougere et al., 2000).	Significant positive impacts are found on the probability of participants being employed in subsequent years (Richardson, 1998).

TAX003 A comparative study on the tax compliance burden for SMMEs in South Africa (SA)

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Abstract

Small, medium and micro enterprises (SMMEs) play a key role in the development of the economy and are a significant contributor to employment. To achieve the objective of economic growth, job creation as well as income redistribution, the government is actively promoting SMMEs. The SMMEs increase the average employment rate in SA by pulling into production unemployed low skilled labour, whose skills level is not sufficient to qualify for employment in larger businesses. How does the SA tax compliance burden for SMMEs measure up in comparison to the tax compliance burden for SMMEs in the United Kingdom (UK) and the United States of America (USA)? The research reviews the tax compliance burden of SMMEs in SA in comparison to the tax compliance burden for SMMEs in the UK and the USA. The research was conducted through an extensive review of the literature and has revealed that tax compliance act as a deterrent to the formalisation of SMMEs for tax purposes. The review of the literature also revealed that tax compliance burden for SMMEs in SA is in line with tax compliance burden of SMMEs in the UK and the USA.

Keywords: Income tax, small business, SMMEs, taxation, tax compliance costs, turnover tax, value-added tax (VAT).

1 INTRODUCTION

In many developing countries (both poor and middle-income), SMME's business owners complain that tax compliance costs (that is the cost of preparing, handling and submitting required tax forms to the country's tax authorities) add a serious burden to their operations and significantly affect their bottom line (FIAS, 2008). In SA, these complaints are compounded by anecdotal evidence that tax compliance costs also prevent many of SMMEs from registering (with the Companies and Intellectual Property Commission, the SARS and other regulatory bodies) and joining the 'formal'[1] economy (FIAS, 2008).

The burden of tax payments are a deterrent to the formalisation of being a taxpayer. There is strong evidence that the burden of tax compliance (the time and cost associated with preparing tax returns, filing, effecting payment and interacting with the tax authorities) can often be heavier than the amount of the tax payments themselves. (Coolidge, 2012:250).

[1] Sector which encompasses all jobs with normal hours and regular wages, and are recognized as income sources on which income taxes must be paid. (Business dictionary)

Taxation ranks high as a source of regulatory costs (time taken to register and comply, bookkeeping costs) for the private sector[2]. Each tax (for example, income tax, employees' tax, VAT) imposes administrative burdens on the taxpayer. Many of these tax returns are required to be submitted on a monthly basis which places the added burden on business to employ bookkeepers to keep its records up to date. For many SMME entrepreneurs, their role as the SARS's agent comes at a high price - high administrative costs, the burden of having to hire experts to manage the compliance burden (income tax returns, VAT returns and employees' tax returns) and cash flow problems (late payments by debtors). (Hudson, 2003).

To achieve the objectives of economic growth, employment generation and income redistribution, SA's SMME economy has been actively promoted since 1995 by the government (Berry, Von Blottnitz, Cassim, Kesper, Rajaratnam, and Van Seventer, 2002:1). The SMME sector of the economy increases the employment in the economy as a whole by 'pulling into production' unemployed low skilled labour, whose skill levels are not sufficient to qualify for employment in larger businesses (Berry et al., 2002:10).

The SMME sector is in itself the main key to whether SA will succeed or fail in confronting its employment and poverty challenges (Berry et al., 2002:10). It is estimated that SMMEs represent more than 95% of formal business enterprises in various countries throughout the world (De Clercq, Tustin and Venter 2006:9).

SMMEs play a key role in the development of the economy and are a significant generator of employment in SA. The government simplified financing of SMMEs by the creation of the Small Enterprise Finance Agency in 2012. The government has been progressively working to simplify the tax compliance burden for SMMEs (National Treasury, 2013:12).

In SA, the importance of small business as a creator of jobs, particularly for those with a low
skills level, is widely recognized. It is estimated that SMMEs contribute 36.1% of the country's gross domestic product (GDP) and employ 68.2% of the workforce in the private sector . In the agricultural, construction and retail sectors, it is estimated that SMMEs employ more than 80% of the total workforce in SA. (FIAS, 2007:1).

2 RESEARCH PROBLEM

The main problem for the research is how does the SA tax compliance burden for SMMEs measure up in comparison to the tax compliance burden for SMMEs in the UK and the USA?

3 OBJECTIVES OF THE STUDY

The primary objective of the research is to review the tax compliance burden of SMMEs in SA in comparison to the tax compliance burden for SMMEs in the UK and the USA.

[2] The part of the economy that is not state controlled, and is run by individuals and companies for profit. (Investopedia dictionary)

4 RESEARCH METHODOLOGY

This research will be performed using a qualitative approach in the form of an extensive literature review. The extensive literature review included the following sources: books, legislation, journals, electronic resources – internet and websites, and government publications.

This study will use SA as a comparative study with the studies done in UK and the USA. UK and USA are known as the international leaders in tax legislation (Broomberg, 2007: 112). Another reason for selecting these two countries is mainly based on the availability of the most recent literature on tax compliance costs for SMMEs in English.

5 COMPARISON BETWEEN TAX COMPLIANCE BURDEN FOR SMMEs IN SA VERSUS UK AND USA

Tax compliance costs fall most heavily on SMMEs. The literature review will analyse the tax compliance cost for SMMEs in SA in comparison to UK and USA and offer some recommendations.

Generally, compliance costs include among others, monetary, time and psychological costs as follows: Fees paid to tax advisors, lawyers and accountants, salary of staff working on preparation of tax returns and tax accounting (accounting for tax in financial records), tax literature and software, phone calls and postage, time spent by taxpayer on studying tax laws and filing tax returns, time spent to prepare and support tax audit, time spent to prepare tax appeals, stress and anxiety arising from complying with specific tax or from a tax related activity, frustration as a result of taxpayer harassment. (Engelschalk, 2007:11).

5.1 Benefits and costs associated with non-compliance with tax laws by SMMEs worldwide

In order to avoid the high tax compliance costs, some SMMEs may choose to trade informally so that they don't have to comply with tax laws and regulations. There are however costs as well as benefits associated with informal trading to SMMEs, Government and the public. Some of the advantages of informal trading for SMMEs are the comparative advantage due to the possibility of offering products at lower prices, less harassment from tax officers and the avoidance of high compliance costs. For tax administrators some of the advantages of non-compliance by SMMEs are lower administration costs and the possibility of allocating scarce resources to administering high potential clients. (Engelschalk, 2007:20).

Disadvantages of non-compliance for SMMEs are inability to obtain formal licenses and permits from local and other governmental agencies, challenges in securing credit from formal sources, to avoid attracting the attention of the authorities, informal business may need to maintain a low profile that will exclude the use of advertising. This will negatively affect growth for the business and suppress employment opportunities, informal trading will attract rent seeking by officials (bribes) to turn a blind eye to informality, inability to trade with the formal sector that may only buy from registered VAT vendors, inability to claim and offset withheld tax, possibly leading to over taxation in some cases and higher tax burden on compliant businesses. (Engelschalk, 2007:20).

In SA the cost of non-compliance originates in many ways. A business needs to be registered for tax before trading with government and a contract will only be issued if the business's tax issues are in order and up-to-date. Some government agencies request a tax clearance certificate every time they have to make a payment above certain thresholds. For those SMMEs whose tax matters are not up-to-date they may have to pay bribes in order to get contracts or payments from government.

Costs of non-compliance with tax laws by the SMMEs to government are incorrect revenue estimation of revenue potential for the SMMEs sector, loss of tax revenue due to tax evasion, violation of tax equity, risk of erosion of general compliance attitude, non-compliance with the tax system risks being associated with non-compliance with other laws. Costs of non-compliance by the SMMEs to the public are less tax revenues available for public service .(Engelschalk, 2007:20). According to Engelschalk (2007:6) factors influencing compliance behaviour of businesses can be categorised into a business profile (structure- sole trader, partnership, company, trust; size and age of business; type of activity carried out; business focus local or international;), industry (size of the industry, major participants in the industry, profit margins, cost structures, industry regulation, working patterns, infrastructure issues, level of competition), sociological (cultural norms, ethnic background, attitude to government, age and gender, education level), economic (investment, interest rates, tax system, government policies, international influence, inflation, markets) and psychological (greed, risk, fear, trust, values, fairness/equity, opportunity to evade) factors. (Engelschalk, 2007:6).

Research indicates that the level of activities of the underground economy (black market) is substantially higher in developing countries compared to developed countries. There is a correlation between the stability of small businesses and tax compliance attitudes. There is a higher likelihood of small businesses with fixed premises and multiple years of operation to comply with the tax system compared to businesses with no fixed premises and few years of operation. (Engelschalk, 2007:4).

5.2 Tax compliance burden of SMMEs in SA

Small businesses worldwide have the potential to grow the economy, generate jobs and reduce poverty. Research, however, indicates that they face many challenges, including relatively high tax compliance costs as a percentage of turnover. This is mainly due to the fixed costs associated with systems necessary to comply with the requirements of the tax system, the frequency for submitting certain returns such as provisional tax, income tax and employees' tax are the same regardless of the size of the business. (SARS, 2011/12:5).

The cost of complying with the tax system may involve a significant fixed cost component largely invariant to business size. This means high tax compliance costs measured as a percentage of turnover or assets for SMMEs compared to large businesses. The smaller the business measured using turnover or assets the higher the tax compliance burden measured as a percentage of turnover. (Clark and Thomas, 2009:93-94).

Small businesses (including sole proprietors, partnerships and corporations) need enabling regulatory environment, which are developed by taking into account the needs of SMMEs and facilitating their integration into the formal sector. This will require a tax system with low compliance costs (Engelschalk, 2007:43). The Grant Thornton's 2006 International Business Owners Survey confirmed that regulations and red tape are reported as one of the constraints to the expansion of businesses worldwide (Grant Thornton, 2006).

According to independent research commissioned by the SARS and the National Treasury in 2007, tax practitioners charge their small business clients an average of R7 030 a year for making sure that tax returns for income tax, provisional tax, VAT and payroll tax are prepared, completed and submitted (SARS, 2011/12:5).

Tax compliance costs are regressive in nature. According to the tax guide for micro businesses issued by the SARS, compliance costs ranges between 2.2% of turnover for businesses with a turnover of up to R300 000 per annum and 0.1% of turnover for businesses with a turnover of around R14 million per annum (R14 million is the old small business corporation turnover amount, for 2014 the amount is R20 000 000) (SARS, 2011/12:5).

The SARS and the National Treasury agreed to explore various options to reduce the tax compliance burden for SMMEs. It was for this reason that in 2009, an optional simplified tax system was introduced for businesses with a qualifying turnover not exceeding R1 million per annum. (SARS, 2011/12:5).

According to Venter and De Clercq (2007) the compliance burden of SMMEs varies according to the size of the business. The size of the organisation also has an impact on whether or not the taxation function of the business is outsourced or is performed internally. Bigger organisations hire accountants and tax specialists and are able to carry out the tax functions internally. The SMMEs however, do outsource the tax function due to a lack of capacity as well as funds; it is cheaper for an SMME to outsource compared to hiring a full time accountant who comes at a high price. (Venter and De Clercq, 2007:144).

The findings of a survey of tax practitioners in SA by FIAS (2007) confirmed the following:

- VAT is the most time consuming tax for small businesses. The number of hours required to comply with tax legislation increased as the size of the business increased; the hours are regressive if taken as a percentage of turnover (Smulders, Stiglingh, Franzsen and Fletcher, 2012:193).

- It requires small businesses an average of 251.95 hours per annum to deal with VAT, income tax and employee's tax compliance related matters. For businesses that are on the turnover tax system, a total of 155.2 hours were documented (which consists of 67.3 hours to comply with the turnover tax system and 87.9 hours to comply with employees' tax as the turnover tax system does not replace employees' tax). (Smulders et al., 2012:215).
- The total time spent by a micro-business registered on the turnover tax system on complying with tax is less than two thirds of the time (61%) in comparison with a normal business (business not registered on the turnover tax system) with a turnover of less than R1million. The turnover tax regime is meeting one of its intended objectives, reducing tax compliance costs for micro businesses by reducing the number of hours required for tax compliance activities. (Smulders et al., 2012:193).
- According to Table 1 (indicating in hours) recording information for VAT is the tax compliance activity that is the most time-consuming for small businesses. Employees' Tax takes up the most time to calculate, submit and pay tax due, because employees' tax returns are submitted to the SARS on a monthly basis. The number of hours spent dealing with the SARS and learning about tax was also the highest for Employees' Tax, due to tax changes by SARS. Tax planning and dealing with the tax advisor for SMMEs is the highest in respect of income tax. (Smulders et al., 2012:194).
- The total time spent in hours for recording information, calculating tax, filing returns and paying tax is 78.55 hours for VAT compared to 42.72 hours for income tax and 53.81 hours for employees' tax. The hours are higher for VAT due to VAT returns for SMMEs being submitted every two months which is equivalent to six returns annually while income tax returns are submitted three times a year (one income tax return per year and two provisional returns per year). Information regarding income and expenses is initially recorded when preparing VAT returns and when it is due to prepare income tax return some of the information has already been recorded while preparing VAT returns reduce the time required to record information for income tax by more than half compared to that required for VAT. The time spend to calculate, file and pay tax was the highest for employee's tax due to taxpayers that are required to submit returns monthly and over and above the monthly returns they are required in addition to submit employee's tax reconciliations twice a year. (Smulders et al., 2012:194).

Table 1: Number of hours spent by SMMEs on tax compliance (in hours)

Activity	VAT	Income tax	Employees' tax
Recording information	64.78	31.4	35.31
Calculating tax, filing return and paying tax	13.77	11.32	18.50
Dealing with the SARS	6.5	6.2	10.62
Tax planning	2.73	5.0	4.66
Dealing with tax advisors	5.14	8.2	5.48
Learning about tax	6.00	7.6	8.61
Other activities	0.00	0.00	0.00
Total time spent	98.92	69.85	83.18

Source: (Smulders et al., 2012:194)

In the survey conducted by the International Finance Corporation, the Multilateral Investment Guarantee Agency and the World Bank, tax practitioners were asked what tax would be the most burdensome to comply with for taxpayers with a turnover under R14 000 000 (R14 000 000 was the turnover threshold for small business corporations in 2007). The results show that provisional tax is regarded by tax practitioners, who deal with small businesses, to be the most burdensome tax. (FIAS, 2007:vii). In SA particularly, the reason for provisional tax to be the most burdensome is because the biggest client for small businesses is Government and research has indicated that they don't always pay on time. Therefore the taxpayer is faced with a situation where they need to pay the provisional tax before they receive the money from their clients and resulted that they have to pay from their pockets.

In a study 'Counting the Cost of Red Tape', conducted in SA, by the Strategic Business Partnerships (SBP) for business growth in Africa VAT was regarded as being the single most troublesome and time-consuming regulation for all businesses except the big companies (SBP 2005:34). Tax practitioners regarded VAT as the most time-consuming tax (FIAS, 2007:54).

Table 2: Summary of certain compliance costs incurred by a small business – including compliance costs expressed as a percentage of turnover (based on highest turnover in each turnover bracket)

	TURNOVER			
Service rendered	**R1-R300 000**	**R300 001-R1 000 000**	**R1 000 001-R6 000 000**	**R6 000 001-R14 000 000**
Once-off burdens				
Registration	R1 414	R1 488	R1 568	R1 629
Objection- interest & penalties	R892	R944	R1 031	R1 093
Audit/inspections	R3 084	R3 164	R3 297	R3 483
Written queries	R1 208	R1 262	R1 370	R1 449
	R6 598	**R6 858**	**R7 266**	**R7 654**
Recurring burdens				
Prepare tax returns	R6 604	R6 959	R7 372	R7 118
Prepare IRP5 reconciliation	R539	R580	R645	R600
	R7 143	**R7 540**	**R8 017**	**R7 717**
TOTAL TAX COST	**R13 740**	**R14 397**	**R15 283**	**R15 372**
% of turnover-total tax cost over max turnover	4.6%	1.4%	0.3%	0.1%

Source: (FIAS, 2007:40)

Table 2 illustrates that tax compliance costs are regressive in nature, the higher the turnover the lower the tax compliance cost as a percentage of turnover (FIAS, 2007: 40). For SMMEs with turnover of R300 000, their total estimated tax cost is R13 740 which is equivalent to 4.6% of turnover, compared to SMMEs with a turnover of R14 000 000 with a total tax cost of R15 372 which is equivalent to 0.1%, a huge variance. Even though the total tax cost is increasing with increases in turnover, the total cost as a percentage of turnover is regressive. (FIAS, 2007: p 40).

Tax compliance is not always a bad thing, it does have some benefits. Research has indicated that it can result in benefits such as cash-flow benefits arising from the use of tax revenues for a period before payment to SARS as is the case for VAT and employees' tax. Managerial benefits may arise in the form of better record-keeping, the use of technology, and improved knowledge of the financial affairs of the business and improved business or managerial decision-making due to a requirement in terms of tax legislation to maintain records. (Smulders et al., 2012: p 189).

According to the estimates of tax practitioners surveyed in the tax practitioner survey (The survey of tax practitioners was carried out by the Foreign Investment Advisory Service of the World Bank Group, with contribution from the Public Sector Governance Group of the Poverty Reduction and Economic Management Network of the World Bank Group and co-financing from the Government of Switzerland. It was performed with the assistance of the University of Pretoria and local survey company BLUEtub Design and Production, and with the cooperation of the South Africa Institute of Chartered Accountants, the South Africa Institute of Professional Accountants, and the South Africa Institute of Certified Bookkeepers), over 60% of businesses with a turnover of R300 000 and less decide to stay informal rather than formalise their business operations, when this research was done businesses were required to register for VAT when their turnover was R300 000, this may change now that businesses are required to register for VAT when their turnover is over R1million. To assist in reducing this percentage, it is recommended that the SARS make the tax compliance process, starting with registration, simple and quick. The SARS should intensify its educational campaigns by offering assistance to newly formed small businesses by means of training. Consideration should be given to expanding the tax content included in the syllabuses currently taught at high school level. Regular training sessions (offered at a nominal fee) for small businesses or aspirant small businesses can assist in reducing the lack of knowledge or understanding of the tax compliance requirements by small business owners. (FIAS, 2007: p xi).

SMMEs with more employees were more likely to express a likelihood to register (75% for those with six or more employees) than sole proprietors with no employees (61%). SMMEs who kept complete financial records on paper or computer were more likely to report an intention to register for tax (75%) than those not keeping such records (63%). SMMEs in the service sector reported a lower likelihood to register for tax (62%) than those in trade (66%) or agriculture, manufacturing and construction sectors (78%). (Coolidge, 2012:271).

Coolidge (2012) stated that those who rented separate premises for their business reported a much higher likelihood of registering for tax (74%) than others, perhaps because they were aware that their tax payments would be reported by their landlords. Those who were within 30 minutes of the SARS office reported a higher likelihood to register (75%) than those farther away (67%) and much higher than those who said they did not know where the nearest SARS office was located (57%).(Coolidge, 2012:272).

SMMEs who agreed that Government offers a good return on taxes paid in the form of government services reported a much higher likelihood of registration (80%) than those who disagreed (57%). The effect of the fear of getting caught was relatively less among the SMMEs who believed that more than 10% of non-registered businesses were caught by the SARS last year for tax. Those who believed that keeping books was relatively easy, or that tax compliance was relatively easy reported a higher likelihood of registering. (Coolidge, 2012:272).

5.3 Tax compliance burden for small businesses in the USA

The burden of complying with the tax system is significant for SMMEs in the USA. The Internal Revenue Service (IRS) estimates that owners of SMMEs (with less than $10 million in assets) spent between 1.7 and 1.8 million hours and around $15 billion in out-of-pocket expenses in preparing and filing tax returns in 2002 (DeLuca, Guyton, Lee, O'Hare and Stilmar, 2007). Toder value small business owners' time at an estimated $45.40 per hour (Toder, 2007). The estimates above imply a total compliance burden of about $100 billion per year on SMMEs (Gale and Brown, 2013:881).

The tax compliance cost is larger relative to business size for small businesses than large businesses (De Luca et al.,2007). Using an estimate of small business owners' time spent on tax of $25 per hour, it is estimated that compliance costs decrease from ±150% of gross receipts for businesses with gross receipts lower than $10,000, to ±10 % between $50,000 and $100,000, and decrease to 0.3% for businesses with receipts over $1 million. (Gale and Brown, 2013:881).

Small businesses account for a large share of tax evasion in the USA. According to the 2001 data provided by the IRS, business income accounted for 55% of all underreporting of income in the income tax. About 43% of all business income that should have been reported on the income tax form was not reported. This figure is a weighted average figure of the underreporting rate for non-farm proprietor income (57%), farm income (72%), rents and royalties (51%) and partnerships, corporations and trusts (18%). Individuals earning income from businesses have a higher chance of underreporting income since their earnings have fewer third parties reporting. (Gale and Brown, 2013:881).

5.4 Tax compliance burden of SMMEs in the UK

The burden of red tape falls most heavily on the smallest businesses and has caused most work for small businesses in the UK. On average small businesses with one or two employees spend 5.1 more hours per person per month dealing with government regulations compared to businesses that employ more than 50 employees, a significant difference. (Chittenden et al., 2003:104).

Furthermore in the UK, income tax imposes a lower compliance burden than VAT and pay as you earn (PAYE). At the time when these studies were conducted, income tax was, for most businesses, assessed and paid annually. In contrast, VAT and PAYE are continuously recorded and generally paid over to the Revenue authorities either monthly or quarterly. (Chittenden et al., 2003:101).

The UK indicated that the current tax regime and the VAT registration threshold in particular, act to restrain the growth and development of small business. The Small Business Research Trust (1998) found that 15.3% of VAT registered businesses have expressed the view that the registration threshold is a significant problem and 18% of non-registered businesses state that they intentionally decline growth opportunities for their business that their turnover can remain below the VAT registration threshold. (Chittenden et al., 2003:102).

Taxation is a major compliance cost for SMMEs; in the UK the area of red tape that has caused the greatest concern for small business is taxation (Small Business Research Trust, 2000). The Small Business Research Trust indicated that over 60% of business with 1 to 4 employees suggested that they spent most of their time dealing with taxation issues compared with less than 10% of small businesses who felt that other regulations such as employment, environmental and health and safety were more burdensome. (Chittenden et al., 2003:104).

In the UK, business taxpayers were grouped in terms of their annual turnover involving three categories: small (up to £100 0000), medium (between £100 000 and £1m) and large (over £1m). On average for every £1 000 of sales for companies with a turnover below £100 000 the average tax compliance cost is £33.6 compared to £1.7 for companies with a turnover over £1m. (Chittenden et al., 2003:101).

6 CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

SMMEs are integral to SA's economy, job growth, eradication of poverty and innovation. They are recognised as a key source of dynamism, innovation and flexibility in advanced, emerging and in developing economies. They are important not only in terms of the number of firms, but also in terms of their contribution to creating employment. They account for a large and growing share of employment in OECD countries. (Clark and Thomas, 2009).

For South African SMMEs VAT was considered to be the most time consuming (Smulders et al., 2012:193) while provisional taxes were considered to be the most burdensome form of tax for SMMEs (FIAS, 2007:vii). The UK indicated that the current tax regime and the VAT registration threshold in particular, act to restrain the growth and development of small business. The Small Business Research Trust (1998) found that 15.3% of VAT registered businesses have expressed the view that the registration threshold is a significant problem and 18% of non-registered businesses state that they intentionally decline growth opportunities for their business so that their turnover can remain below the VAT registration threshold. (Chittenden et al., 2003:102). Over 60% of SA's businesses with a turnover of R300 000 and less decide to stay informal rather than formalise their business operations.

In the USA it is estimated that compliance costs decrease from ±150% of gross receipts for businesses with gross receipts lower than $10,000, to ±10 % between $50,000 and $100,000, and decrease to 0.3% for businesses with receipts over $1 million. (Gale and Brown, 2013:881). In the UK on average for every £1 000 of sales for companies with a turnover below £100 000 the average tax compliance cost is £33.6 compared to £1.7 for companies with a turnover over £1m. (Chittenden et al., 2003:101).

For each of the countries referred to above, there is a widespread concern about the tax compliance burden on SMMEs. Tax compliance costs make up a major component of total regulatory costs for SMMEs. The literature review confirmed that tax compliance costs are regressive in nature and fall most heavily on SMMEs. The literature review also does indicate that the National Treasury as well as the SARS is trying very hard to reduce the tax compliance costs for SMMEs, this is also evidenced by the introduction of the Davies Tax Committee in 2013.

Delimitations

The study was limited to SA, the UK and the USA and tax revenue types were limited to income tax, employees' tax, VAT and turnover tax.

Limitations

SMME definitions are not consistent across SA, the UK and the USA. Different definitions are also applied within a country. The benchmark of comparison was not equal across all countries i.e. ZAR versus USD and GBP. Also, an hourly rate is used in the USA to calculate tax compliance cost for SMMEs while the number of hours is used in the UK to calculate the tax compliance cost for SMMEs. Direct comparability is not easy.

Recommendations

It is recommended that the SARS make the tax compliance process, starting with registration, simple and quick. The SARS should intensify its educational campaigns by offering assistance to newly formed small businesses by means of training. Consideration should be given to expanding the tax content included in the syllabuses currently taught at high school level. (FIAS, 2007: p xi).

It is recommended that the SARS consider allowing SMMEs to submit PAYE returns every quarter if their payroll taxes do not exceed a certain amount. It is also recommended that the SARS allows SMMEs to submit their VAT returns every six months if their turnover is below a certain amount. For SMMEs, the SARS may consider the cash basis of accounting for VAT and provisional tax as a result of cash flow problems experienced by SMMEs in the early stages.

The National Treasury must intensify the fight against corruption; those who agreed that government gives a good return on taxes paid in the form of services reported a much higher likelihood of registering for tax, compared to those who disagreed.

Further research

Further research should be conducted to establish the effectiveness of the initiatives undertaken by the SARS to reduce the tax compliance burden for SMMEs such as the effectiveness of the turnover tax system.

5. REFERENCES

Berry, A., von Blottnitz, M., Cassim, R., Kesper, A., Rajaratnam, B. and van Seventer, D. E. (2002), 'The economics of SMMES in South Africa', *Trade and Industrial Policy Strategies (TIPS) Report,* Johannesburg.

Business dictionary. (2014), 'Formal-sector' [http://www.businessdictionary.com/definition/formal-sector.html#ixzz3AkJZlHxJ] (accessed 10 August 2014).

Broomberg, E. B. (2007), 'Tax avoidance then and now', *Tax Planning Corporate and Personal*, 21(5), pp. 112.

Chittenden, F., Kauser, S. and Poutziouris, P. (2003), 'Tax regulation and small business in the USA, UK, Australia and New Zealand', *International Small Business Journal,* 21(1), pp. 93-115.

Clark, W. S. and Thomas, A. (2009), *'OECD Tax Policy Studies Taxation of SMEs: Key Issues and Policy Considerations'*, No 18. Organisation for Economic Co-operation and Development: France. <http://browse.oecdbookshop.org/oecd/pdfs/product/2309061e.pdf>.

Coolidge, J. (2012), 'Findings of tax compliance cost surveys in developing countries', *eJournal of Tax7 Research*, 10(2), pp. 250-287.

De Clercq, B., Tustin, D.H. and Venter, J.M.P. (2006), 'The organisational impact of taxation on small, medium and microestablishments in the business services sector in Gauteng', Unisa Press, Pretoria

DeLuca, D., Guyton, J., Lee, W.-L., O'Hare, J. and Stilmar, S. (2007), 'Estimates of U.S. federal income tax compliance burden for small business', In *Proceeding of the 2007 IRS Research Conference, IRS Research Bulletin*, Washington.

Engelschalk, M. (2007), 'Designing a tax system for micro and small businesses: guide for practitioners', working paper 42435, IFC World Bank Group, Pennsylvania Avenue, N.W., Washington D.C.

FIAS. (2007), 'South Africa tax compliance burden for small business: A survey of tax practitioners', [https://www.wbginvestmentclimate.org/uploads/FIAS_Tax_Practitioners_Report_-_FINAL_29+Aug.pdf] (accessed 16 August 2014).

FIAS. (2008), 'Tax compliance costs for small businesses in South Africa; Web survey of tax practitioners provincial data analysis', [http://www.ifc.org/ifcext/fias.nsf/AttachmentsByTitle/SouthAfricaTaxComplianceCosts2008/$FILE/South+Africa+Tax+Compliance+Costs1.pdf] (accessed 17 June 2013).

Gale, W. and Brown, S. (2013), 'Small business, innovation, and tax Policy: a review', *National Tax Journal*, 66(4), pp. 871-892.

Grant Thornton. (2006), 'Regulation and red tape remains the greatest constraint to business growth in SA', (Press release issued on Monday, 15 May 2006)

Hudson, J. (2003), 'RIAS and Private Sector Development: Some Thoughts from the South African Context', *Small Business Project*, Johannesburg, South Africa.

Investopedia dictionary. (2014), 'private sector', [http://www.investopedia.com/terms/p/private-sector.asp] (accessed 10 August 2014).

National Treasury. (2013). 2013 Budget Speech. Pretoria: Government Printer

SARS. (2011/12), 'Tax guide for micro businesses', [http://www.sars.gov.za/AllDocs/OpsDocs/Guides/LAPD-TT-G01%20-%20Tax%20Guide%20for%20Micro%20Businesses%20-%20External%20Guide.pdf] (accessed 31 January 2014).

Small Business Research Trust (1998), 'NatWest SBRT Quarterly Survey of Small Businesses in Britain', *SBRT,* 14(1).

Small Business Research Trust (2000), 'NatWest SBRT Quarterly Survey of Small Businesses in Britains' *SBRT*, 16(3).

Smulders, S., Stiglingh, M., Franzsen, R. and Fletcher, L. (2012), 'Tax compliance costs for the small business sector in South Africa-establishing a baseline', *eJournal of Tax Research*, 10(2), pp. 184-226.

Toder, E. (2007), 'Does the Federal Income Tax Favor Small Business?' paper presented at the National Tax Association Proceedings of the 100th Annual Conference

Venter, J. M. P. and De Clercq, B. (2007), 'A three-sector comparative study of the impact of taxation on small and medium enterprises', Meditari *Accountancy Research*, 15(2), pp. 131-151.

TAX004 An analysis of the income tax implications for the seller and purchaser in relation to the assumption of contingent liabilities in part settlement of a going concern

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Abstract

This paper addresses the proposed income tax treatment of contingent liabilities assumed when a going concern is sold. With the transfer of going concerns being common, a critical issue is how agreements should be structured to determine the income tax implications. Currently no prescribed income tax treatment exists in South Africa and the Ackermans case brought this aspect to the fore. The South African Revenue Service issued a discussion paper to address the income tax treatment regarding the assumption of contingent liabilities on the transfer of a going concern. This discussion paper was issued in draft and public comments were due by 31 March 2014. The income tax effects of these transactions can be high in value and have an impact on the future and current tax consequences of an acquisition. This paper will consider the development of the discussion paper and how it has been influenced by the historical treatment of these transactions and applicable case law. An analysis of Binding General Ruling 185, issued on 11 December 2014, which deals with the corporate rules, specifically the disposal of assets and liabilities as part of a group structure is provided. The paper concludes with recommendations as to how agreements should be structured and how these transactions could be treated for the purpose of the Income Tax Act No.58 of 1962.

INTRODUCTION

The assumption of contingent liabilities is a common issue with respect to the transfer of going concerns. No specific income tax treatment has been legislated and the only recourse is to the general income tax provisions as contained in common law and case law.

Cases brought before the courts have proved the importance of investigating and finding a suitable income tax treatment for the assumption of contingent liabilities. In addition, the South African Revenue Service (SARS) issued the following discussion paper in draft for public comment by 30 March 2014: "Discussion Paper on the tax implications for the seller and purchaser in relation to the assumption of contingent liabilities in part settlement of the purchase price of assets acquired as part of a going concern" (the discussion paper).

This paper will provide a critical analysis of the discussion paper in the context of case law and the Income Tax Act No. 58 of 1962 (the Act). It will compare the ruling in Binding Private Ruling 185, issued on 11 December 2014, and dealing with the corporate rules[3], with the discussion paper.

[3] Sections 41-47 of the Act

The paper will also attempt to provide a suitable method for dealing with the tax consequences of similar transactions in accordance with the proposed treatment in the discussion paper and where necessary recommend alternatives.

PURPOSE

The purpose of this paper is to analyse the proposed treatment in the discussion paper in the context of the Act and recent case law. Further, the paper analyses the proposed treatment and considers whether it is appropriate and can easily be applied in practice. It also recommends a solution which is fair to both the fiscus and the taxpayer. Further developments affecting the treatment in the discussion paper are assessed.

RESEARCH METHOD

This paper will address the following question: *"How should free-standing contingent liabilities be treated for income tax purposes when there is a transfer of a going concern?"*

In order to answer this question, the study will investigate the following:

a) What a contingent liability is,
b) The requirements to claim a deduction,
c) Case law dealing with similar concerns and the impact of such on the proposed treatment in the discussion paper,
d) The historic treatment of such transactions,
e) Whether the discussion paper provides a solution which is in accordance with the legislation and which can be applied efficiently.

While undertaking the analysis to address the research question the study will examine the following sub-questions:

a) How can proceeds accrue to a seller on transfer of a contingent liability?
b) Will either taxpayer be able to claim a deduction on such contingent liability if it becomes unconditional?
c) Will the assumption of the contingent liability defer deductions for the purchaser of the going concern?

Limitations of study

This paper takes into account information available as at 30 April 2015. The study will only focus on the income tax implications regarding the transfer of contingent liabilities of South African taxpayers.

AN EXAMINATION OF CONTINGENT LIABILITIES

In terms of International Financial Reporting Standards (IFRS) liabilities are categorised into three groups depending on the level of uncertainty. These liabilities are an ordinary liability which is a definite obligation and has been incurred, a provision which is a liability which will most likely be incurred and a contingent liability which is a possible obligation.

In the legal sense there are two types of liabilities namely a contingent liability and an unconditional liability. A contingent liability is a liability which has an element of uncertainty and therefore has not been incurred and will accordingly only be incurred when the specific uncertainties / conditions have been met. In the decision in *Nasionale Pers Bpk* v *KBI* (1986 (3) SA 549 (A)) the court made it clear that a liability is only actually incurred for income tax purposes when the outcome is certain.

The accounting treatment and recognition of a liability and a contingent liability.
In terms of the conceptual framework within IFRS a liability is defined. IAS37 in IFRS outlines three types of obligations and the recognition thereof. Firstly, the liability which is a definite obligation for which the reporting entity is unconditionally liable. The second is a provision and the third is contingent liability.

A provision, in terms of IAS37, is a liability where there is uncertainty in the timing or the amount; whereas a contingent liability is only a possible obligation where the existence is confirmed by the happening of a uncertain future event (IAS 37,10). Therefore the distinguishing factor between a provision and a contingency for financial reporting purposes is that a contingency has a greater element of uncertainty.

IFRS 3;10 provides guidance on the recognition of liabilities on the acquisition of a business it states *"The acquirer shall recognise, separately from goodwill, the identifiable assets acquired, the liabilities assumed…"*

The standard further provides guidance in terms of IFRS3:23 that contingent liabilities should also be recognised even though it is only a possible obligation. This treatment differs from tax treatment.

Contingent liabilities defined in terms of the discussion paper
The discussion paper provides detailed explanations regarding liabilities and only deals with free-standing contingent liabilities. It notes that a contingent liability is an obligation whose existence will only be confirmed by the occurrence or non-occurrence of an uncertain future event. Further a free-standing liability is one which is not linked to a particular asset as those type of liabilities such as an allowance for doubtful debts is a valuation provision.

The discussion paper takes account of the fact that these liabilities are often recognised in the accounting records, however as held in *Sub-Nigel* v *CIR* (1948 AD) there is a difference between accounting and tax treatment and one must look to the language in the Act when considering the relevant tax treatment (Olivier, 2007:601) .

As noted in the discussion paper, a contingent liability cannot be deducted due to the fact that it would not meet the requirements of section 11(a) of the Act as it has not actually been incurred. This is despite the fact that when a provision is raised in the accounting records, which has the same substance as a contingent liability for tax, it is not recognised for income tax purposes, unless it falls into a specific deduction.

Requirements for a deduction

The Act contains provisions on deductions. In determining whether a deduction is available in terms of the Act, it is necessary to consider section 11(a) and also section 23 (disallowed deductions). The preamble to the general deduction formula in section 11(a) requires a trade to be carried on. In terms of section 23(g) no deduction will be allowed to the extent the amount is not incurred for the purposes of trade. Case law has clarified the terms "trade" and "actually incurred".

The general deduction in terms of section 11(a) states:

> *"Expenditure and losses actually incurred in the production of income, provided such expenditure and losses are not of a capital nature"*

The meaning of "trade" and "actually incurred"

In terms of *Burgess* v *CIR* (1933 AD), *trade* must be given the widest possible meaning and includes every profession, business and employment amongst others. In *Caltex Oil (SA) Ltd* v *SIR* (1975 AD), the court held that expenditure is *actually incurred* when the taxpayer becomes unconditionally liable for an amount.

Claiming a deduction for a contingent liability

The characteristic of a contingent liability is that the taxpayer is not unconditionally liable for the amount and therefore it has not been actually incurred. As a consequence the taxpayer is unable to claim a deduction in terms of the provisions of the Act.

The tax treatment in practice and an analysis of the Ackermans case

Ackermans v *CSARS* [2010] ZASCA 131 highlighted transactions that include the assumption of contingent liabilities in part settlement of the purchase price of a going concern and how the free-standing contingent liabilities are treated for income tax purposes and how the treatment suggested in the court decision of the above-mentioned case has affected the outcome. The taxpayer (being the seller) argued for a deduction in respect of the contingent liability assumed by the purchaser as this resulted in less consideration being received.

Ruling of the Ackermans Case

The ruling of the case provided clarity on how important the agreement between the parties is as it will play an integral part in determining the tax consequences. The court ruled the seller was not entitled to the deduction, even though part of the purchase price was foregone. The court also stated as an *obiter dictum* that the purchaser would not be barred from claiming the contingent liabilities when they became unconditional, subject to the further requirements of the Act.

In Binding Class Ruling 029 SARS gave effect to this where a going concern was transferred between companies within the same group in terms of section 44 of the Act. In this ruling the purchaser was entitled to claim a deduction for the contingent liabilities assumed when they were actually incurred.

The importance of the agreement

The agreement is important in determining the tax implications (Rossouw, 2010). The court held that an obligation on the part of the seller had not arisen in terms of the sale agreement. It has merely accepted a lower price. Therefore, it had not incurred expenditure in respect of the contingent liabilities. As noted by Emslie and Davis (2011:341) the situation would have been different if the agreement had said that the seller would pay the purchaser to assume the contingent liability. In that instance the seller would have incurred expenditure.

'*It was held in the recent Supreme Court of Appeal judgment in Eveready v The Commissioner for the SARS (195/11) [2012] ZASCA 36 that the sale agreement had to be interpreted on the facts as they appeared in the sale agreement (para 10, page 5). The Supreme Court of Appeal disallowed oral evidence as to the meaning of the written agreement. The judgment again confirmed the importance of clearly setting out the allocation of the purchase consideration to the various assets during the sale of a sale of business.'* (Fouche, 2013:11).

Past treatment

In the past there has been no prescribed tax treatment for the transactions forming the subject matter of the discussion paper, but the seller would have to determine whether they are entitled to a deduction on the basis that they have incurred expenditure by accepting a lower selling price for the business.

In conducting research for this paper, no authoritative source was available detailing how this treatment was treated in the past. By deducing from cases involving these transactions, in particular the recent *Ackermans* v *CSARS* case, it can be inferred from the facts of the case that sellers would have tended to deduct the contingent liability at date of transfer and the purchaser would not have had any tax consequences in respect of the contingent liability.

Conclusion

These transactions have been commonly contentious in the past (BDO, 2010). The ruling of the court made the importance of the agreement between the parties clear and also that the buyer would potentially be able to claim a deduction when the contingent liability is actually incurred, while the seller would have a higher amount of proceeds on sale. Should the liability become unconditional any deduction would be subject to further requirements of the Act.

A critical analysis of the discussion paper

The discussion paper provides arguments which are both valid in terms of the legislation and in line, to an extent, with previous court decisions, while at the same time proposing specific tax treatments which may prove difficult to apply in practice.

The scope of the discussion paper

The discussion paper addresses contingent liabilities assumed as part of a going concern and does not address those covered within the corporate rules. It is also only applicable to transfer of a going concern and not the transferors of a legal entity. Further the discussion paper only considers free-standing contingent liabilities and does not consider embedded obligations[4].

The consideration of the seller

The view of SARS is that when one transfers a business as a going concern to another, any free-standing contingent liability, if it gets transferred with the business, would essentially reduce the purchase consideration for the purchaser. Therefore in terms of the view taken by SARS it would have an impact on the tax cost of the asset (as well as the availability and timing of tax deductions and allowances) and in order to determine the appropriate impact they would need to refer to the transfer agreement.

The understanding is that the assumption of the contingent liability by the purchaser would reduce the net assets of the business and therefore the purchaser would offer a lower price. In light of the above, the discussion paper addressed the issue of the elements of the purchase price. The paper applied the principles applied in Interpretation Note 58 issued in 2012[5]. The consideration received by the seller includes the amount in *cash or otherwise* as per the provisions of *gross income*.

Therefore the consideration transferred would consist of the amount actually paid and the additional amount in "otherwise" which would be the value of the contingent liabilities assumed by the purchaser. The amount the seller must include as consideration for the assets sold and the contingent liabilities assumed by the purchaser must be allocated to gross income or proceeds depending on whether or not the amount is capital or revenue in nature.

An amount which is capital in nature would result in proceeds accruing to the seller when the asset is sold for the purpose of capital gains tax, while an amount which is revenue in nature would result in gross income.

This application is valid in terms of the *Ackermans* v *CSARS* case as there would be a *quid pro quo* which is essentially the amount of the contingent liability assumed by the purchaser in exchange for a lesser amount paid for the transfer of the going concern.

Other considerations

The discussion paper does not mention how the value should be calculated. This can lead to issues surrounding the tax implications. The discussion paper mentions that SARS will use the purchase price allocation within the agreement as long as there is no evidence that the allocation does not represent the actual facts.

[4] An embedded obligation is s directly linked to an asset and decreases the value of the asset

[5] This interpretation note resulted from the ruling of *Brummeria Renaissance (Pty) Ltd And Others* V *CSARS* (2007 SCA)

This treatment suggested in the discussion paper will result in onerous work for both the taxpayers and SARS. Due to the insufficient detail regarding the determination of a value in the discussion paper, taxpayers could use this to their advantage to structure transactions in a way to benefit their tax position.

The lack of guidance in the discussion paper on valuation provides uncertainty to the taxpayer and further suggests that these contingencies should be recognised in the agreement in line with IFRS principles and therefore it is arguable that SARS has taken the view of the financial reporting body on how to measure the contingent liability.

Can one be taxed on something they do not have?

The view of the paper is that the consideration transferred to the seller comprises of two components – the amount transferred and the contingent liability foregone.

The issue with this is that the seller is taxed on something which does not exist in terms of legislation. If the Act does not recognise a contingent liability because it has not been incurred, how can SARS interpret the legislation to recognise the proceeds?

Will it be possible for the proceeds to have accrued to the seller as in the case of *Mooi* v *SIR* (1972 (1) SA 675 (A)), where the judgement made it clear that proceeds would accrue to the taxpayer when they are unconditionally entitled to it? Therefore, as a contingent liability is conditional, should the proceeds not be treated the same way? This is an area for further research.

The purchaser of the going concern and deductibility of the contingent liabilities

The purchaser would acquire the going concern through giving consideration for the underlying assets. The discussion paper provides an argument that any contingent liability assumed by the purchaser would decrease the price of the net assets being purchased.

In ordinary business operations it would be expected that a business would have contingent liabilities, for example as they accrue for bonuses and long term employment benefits. In terms of the Act these amounts would only be deductible once they meet the requirements of section 11(a).

The issue for the purchaser is that, even once the contingent liability becomes unconditional another key requirement of the legislation would need to be satisfied. This requirement is that of trade. In terms of *Burgess* v *CIR* (1933 AD) trade should be given the widest interpretation and therefore the purchaser would most likely meet this requirement.

Furthermore, in terms of the requirements of the general deduction the amount must not be of a capital nature. Therefore another issue is that the purchaser, by assuming contingent liabilities will potentially incur capital expenditure. Also the deduction would only be allowed if expenditure incurred was in the production of income (Olivier, 2007:610).

The view of the discussion paper is that the purchaser would only be able to claim a deduction to the extent it meets the requirements of section 11(a). If we consider the underlying business being transferred, that business has met the requirements for the deduction. However, due to the business being transferred between different entities, no entity is being allowed to claim the deduction until such time it is actually incurred.

The treatment of the assets purchased as part of the going concern

The view of SARS is that the assumption of the contingent liabilities will reduce the purchase price of the assets of the going concern and in terms of the discussion paper the taxpayer would need to analyse the terms of the agreement. SARS would use the agreement to determine how the consideration was allocated.

The consideration will be allocated in terms of the agreement. Based on the allocation of the contingent liabilities to each identified asset acquired, the base cost of each asset would be reduced for the purpose of capital gains tax as well as for any capital allowances allowed in terms of the provisions of the Act while the liabilities remain contingent.

Illustrative income tax treatment

Refer to Appendix A which details how the transaction could be taxed in both the hands of the seller and purchaser in terms of the discussion paper.

Binding Private Ruling 185

SARS released Binding Private Ruling 185 (BPR 185) on 11 December 2014, which deals with the disposal of assets and the assumption of (contingent) liabilities in terms of s42 of the Income Tax Act.

SARS ruled that the disposal of the assets "at net book value will constitute an 'asset-for-share' transaction under s42".

It appears from BPR 185 that s42(4) of the Act, which provides that the roll-over relief provided for in s42 would only apply to the extent that the consideration constitutes equity shares, would not be applicable as (presumably) part of the consideration constituting the assumption of the liabilities and contingent liabilities constitutes 'debt' as contemplated in s42(8)(b) of the Act, which is excluded from the application of s42(4) (Cliffe Dekker Hofmeyr, 2015).

Section 42(8) of the Act refers to the disposal of "any business undertaking as a going concern to a company in terms of an asset-for-share transaction and that disposal includes any amount of debt that is attributable to, and arose in the normal course of that business undertaking".

The entire transaction would thus constitute an asset-for-share transaction as defined in s41(1) of the Act, and not only to the extent that the consideration constitutes equity shares (Cliffe Dekker Hofmeyr, 2015).

BPR 185 continues in that the purchaser would only be allowed to claim a deduction in respect of the contingent liabilities to the extent that the requirements of s11(a), read with s7B and 23(g), are complied with at the time that the contingent liabilities are realised. Regard must be had to the context of the business existing prior to the transfer of the business when determining whether the requirements for deduction are met. The fact that the contingent liabilities were assumed as part of the consideration for the assets must be ignored.

The treatment of contingent liabilities in BPR 185 appears to be consistent with the treatment of contingent liabilities in the discussion paper.

Recommendations and Conclusion

Following the study it is evident that income tax consequences are driven by the agreement. From an analysis of the discussion paper and Binding Private Ruling 185 it is clear that an alternative method of interpretation would provide a better result which would be easier to implement in practice.

The transaction

After analysis of the discussion paper it is evident that SARS would be satisfied with the full proceeds (gross of the contingent liability) accruing to the seller at the date of transfer of the going concern and the contingent liability assumed by the purchaser.

The treatment of including the full proceeds in the taxpayer's gross income is in line with the decision as set out in *Brummeria (supra)* as there is a *quid pro quo* occurring in the transaction as the seller is allowing the purchaser to pay less in exchange for the assumption of the contingent liabilities.

Therefore, applying another decision by the court in *Lace Proprietry Mines Ltd* v *CIR* (1938 AD 267) it is expected that SARS will look at the intention of the parties at the time of the agreement. Economically it would be that the amount would be less since the intention would be to transfer the contingent liabilities in exchange for the lower transfer price.

The background to the proposed treatment

As illustrated in Appendix A, in terms of the discussion paper on transfer of the going concern, no deduction for the contingent liability assumed by the purchaser would be allowed, as it was a deduction for the seller but the amount would be included in the amount of proceeds.

The purchaser would mostly likely not be entitled to a deduction because it was not incurred in the production of income and it could be seen as capital in nature. Should SARS allow the purchaser the deduction then it would be possible for taxpayers to purchase going concerns with large contingent liabilities in order to obtain tax benefits.

The proposed treatment

The proposed treatment will be practical as it is easier to apply by taxpayers. Further, the treatment takes into account some of the considerations of the National Treasury as laid out in the Draft Taxation Laws Amendment Bill of 2011[6].

This treatment would however require amendments to the legislation or a binding general ruling.

The treatment would encompass two parts:

a) The deduction:

   In order to provide efficiency and promote fairness SARS should allow the taxpayer (Seller) to claim a deduction at the time of the disposal.

   Even though this would not meet the general deduction requirements, the recommendation would be for the National Treasury to propose legislation of the following in terms of section 11(a): “Provided where there is a transfer of a going concern from one taxpayer to another, any amount of contingent liability is deemed to be incurred at the date of transfer and the amount is deemed to be that in terms of IFRS”

b) The recoupment:

   In order to ensure fairness, in terms of part a) above there should be a recoupment where the contingent liability deducted by the seller decreases or does not materialise.

The idea with the proposed treatment is that the seller and purchaser should be satisfied with the outcome as it would prove equitable to both parties. The treatment would be relatively easy for compliance by taxpayers and enforcement by SARS.

The treatment would provide a uniform tax effect if the going concern was not transferred to another entity. This further prevents taxpayers from trying to avoid the tax implications by SARS taking the recommendation above into account.

Another consideration is that parties could now add a clause into the agreement that if the contingent liability does not materialise, the seller would be liable to reimburse the purchaser for any recoupment in terms of the Act as described in the recommended treatment above.

[6] In this document the National Treasury had proposed amendments to the legislation which included in terms of a new section11F to deem expenditure to be incurred for a contingent liability in such a transfer of a going concern.

Conclusion

The proposals provided in 7.3. above are more efficient and follow a simpler approach than that of the discussion paper. The final proposal is one which can fit in with ease to the legislation and it achieves the same effect as if the going concern had not been transferred while at the same time providing an efficient method of taxation for SARS.

Appendix A

Illustrative example:

Scenario:

Co S (Seller) a manufacturer has the following on its Statement of Financial Position.

Statement of Financial Position of Co S:

Assets:	**R**	
PPE: Manufacturing Building[7]		1 000
Deferred Tax Asset (provision)		56
Equity:		
Share Capital	556	
Liabilities:		
Accounts Payable		300
Provision for bonus[8]		200

A1: In this scenario Co P (Purchaser) purchases the underlying PPE by assuming the liability of R300 of Co S and giving cash of R700:

Seller:	**Purchaser:**
The seller had a deduction of the contingent liability when actually incurred. On the transfer of the going concern: Proceeds: R1 000 (700 + 300) Base Cost: R1 000 Capital Gain: R0	The purchaser will not be able to deduct the liability as it was actually incurred by Co S. Further the debt is capital in nature so no deduction can be claimed even though it was assumed by the purchaser. The purchaser will claim a capital allowance in terms of s13(1) for the building based on the cost of R1 000.

[7] Assuming it has not been brought into use by the taxpayer as yet

[8] This is a contingent liability for tax purposes

A2: In this scenario Co P (Purchaser) purchases the PPE at its book value and assumes both the provision and liability. The purchaser gives cash of R500.The deferred tax would be derecognised by the seller.

A2.1: Treatment prior to the Ackerman's case:

Seller:	**Purchaser:**
The seller would deduct the contingent liability of R200 at date of transfer. On the transfer of the going concern: Proceeds: R1 000 (500+300+200) Base Cost: R 1000 (R1000) Capital Gain: R0	The purchaser will not be able to deduct the liability as it was actually incurred by Co S. The purchaser will claim a capital allowance in terms of s13(1) for the building based on the cost of R1 000.

A2.2: Treatment in terms of the Ackerman's case:

Seller:	**Purchaser:**
The seller will not be allowed to deduct the contingent liability. On the transfer of the going concern: Proceeds: R1000 (500+300+200) Base Cost: R1000 Capital Gain: R0	The same as A2.1 and the purchaser will be able to deduct the contingent liability when actually incurred, provided it meets the requirements for a deduction.

A2.3: Treatment in terms of the discussion paper:

Seller:	**Purchaser:**
The seller will not be permitted to deduct the contingent liability. On the transfer of the going concern: Proceeds: R1 000 (500+300+200) Base Cost: R1 000 Capital Gain: R0	The purchaser will claim a capital allowance for the building based on the cost of R1 000 less the provision allocated to it of R200. s13(1) (R1 000 – R200) x 5% Once the contingent liability is actually incurred the allowance will be based on the full R1 000.

A2.4: Treatment in terms of the proposals in 7.3 of this paper:

Seller:	**Purchaser:**
The seller will deduct the contingent liability when it is deemed to be incurred. On the transfer of the going concern: Proceeds: R1 000 (500+300+200) Base Cost: R1 000 Capital Gain: R0	The purchaser will not be able to deduct the liability as it is deemed to be actually incurred by Co S. The purchaser will claim a capital allowance in terms of s13(1) for the building based on the cost of R1 000 Should the contingent liability not become unconditional there will be an inclusion in the purchaser's taxable income.

References:

Books

Emslie & Davis (2011). *Income Tax Cases & Materials.* Cape Town: The Taxpayer.

Discussion Paper

South African Revenue Services, 2013, Discussion Paper on the tax implications for the seller and purchaser in relation to the assumption of contingent liabilities in part settlement of the purchase price of assets acquired as part of a going concern, Legal and Policy Division.

Dissertations

Rossouw, D. 2010. The tax consequences for a seller (also briefly commenting from the perspective of the purchaser) when contingent liabilities are transferred in a sale of a business as a going concern with specific reference and evaluating income tax case no. 1839 : (South Gauteng Tax Court). Thesis. Faculty of Commerce, University of Cape Town.

Articles

Olivier, L. 2007. Tax implications on the sale of a business. The South African Law Journal. 124(3): 600-617.

Fouche, L. 2013. *The Sale Of South African Businesses: Navigating Through The Tax Minefield*. International Business & Economics Research Journal. 12(1):1-16.

Online Articles

SARS, Report a Suspicious Activity.
Available:
http://www.sars.gov.za/TargTaxCrime/ReportCrime/Pages/Report-a-suspicious-activity.aspx [accessed: 28 May 2014]

Cliffe Dekker Hofmeyr Tax Alert, Asset-for-share Transactions and the Assumption of (Contingent) Liabilities, 30 January 2015.
Available:

http://www.cliffedekkerhofmeyr.com/export/sites/cdh/en/news/publications/2015/tax/downloads/Tax-Alert-30-January-2015.pdf [accessed 30 April 2015]
BDO South Africa, News From the Courts, 18 November 2010.
Available:
http://www.bdo.co.za/resources/showitemarticle.asp?ResourceSectionId=4&ResourceSectionName=Publications&ResourceId=7&ResourceName=Tax%20Flash&IssueId=261&ContentPageID=&Archive=&articleid=249 [accessed: 28 May 2014]

Explanatory Memorandum
SOUTH AFRICA, National Treasury Department, 2011, Draft Taxation Laws Amendment Bill, Government Printer.

Interpretation Notes and Rulings
South African Revenue Services, 2011, Binding Class Ruling 029, Legal and Policy Division.
South African Revenue Services, 2014, Binding Private Ruling 185, Legal and Policy Division.
South African Revenue Services, 2012, Interpretation Note No 58, Legal and Policy Division.

Legislative and financial reporting references cited:
Income Tax Act No 58 of 1962
International Financial Reporting Standards (IFRSs), Volume A, 2013/2014
Conceptual Framework

IFRS 3 – Business Combinations
IAS 37 – Provisions, Contingent Liabilities and Contingent Assets

Cases- South African
Ackermans v *CSARS* (441/09) [2010] ZASCA 131.
Burgess v *CIR* 1933 (4) SA 161 (A), 55 SATC 185.
Caltex Oil (SA) Ltd v *SIR* (1975) (1) SA 665 (A), 37 SATC 1.
Lace Proprietry Mines Ltd v *CIR* (1938) AD 267, 9 SATC 349.
Mooi v *SIR* (1972) (1) SA 675 (A), 34 SATC 1.
Nasionale Pers Bpk v *KBI* (1986) (3) SA 549 (A), 48 SATC 55.
New State Areas v *CIR* (1946) AD 610, 14 SATC 155
Sub-Nigel ltd v *CIR* (1948) 15 SATC 381.