2021 Southern African Accounting Association Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

COMBINED VIRTUAL ONLINE CONFERENCES 2021

CONFERENCE	HOST	DATE
Southern African Accounting Association Gauteng Central, Northern Gauteng and Western Cape Regional Conference	**Gauteng Central, Northern Gauteng and Western Cape Regions**	**20 September 2021**
Southern African Accounting Association Kwazulu-Natal and Central Regional Conference	**Kwa-Zulu Natal and Central Regions**	**22 October 2021**

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PREFACE

The 2021 SAAA Central, Gauteng Central, Kwazulu-Natal, Northern Gauteng and Western Cape Regional Conferences were presented in partnership with the the South African Accounting Association.

OBJECTIVE OF THESE CONFERENCES

The SAAA Regional Conferences aim to contribute towards the achievement of the SAAA vision of promoting excellence in Accountancy Higher Education and Research in Southern Africa. By providing a research and information-sharing platform that focuses on teaching and learning in Accountancy, academics can play an active and leading role in Accounting Education in Southern Africa.

REVIEW PROCESS AND COMMENTS

All papers submitted for the 'refereed category' were subjected to a rigorous process of blind peer review. All the papers were submitted to at least two experts at an independent South African University for double blind peer review. Comments and suggested amendments from the reviewers were communicated to authors and the reviewers decided on the acceptance of the papers for presentation at the conference and inclusion in the conference proceedings. Experts also declined certain papers and these were not included in these conference proceedings.

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ISBN NUMBER: 978-0-620-92690-4

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Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

CENTRAL REGION

A Critical Investigation of the South African Normal Tax Treatment of Deemed Expenditure due to Value-shifting in terms of Asset-for-share Transactions

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ABSTRACT

Value-shifting by means of asset-for-share transactions is prevalent in practice. However, the tax implications triggered by these types of transactions may cause an economic hindrance in the commercial effectiveness and viability of such transactions. The primary purpose of this paper is to critically investigate the differences in the current normal tax treatment of deemed expenditure arising due to value-shifting in terms of asset-for-share transactions. The research conducted is positioned within the interpretivism paradigm whereby a critical investigation is performed through legal research and a doctrinal analysis. First, the literal approach of interpretation of legislation is employed to highlight the anomaly regarding the differences in the current normal tax treatment of deemed expenditure arising from value-shifting through asset-for-share transactions. To enhance the understanding of the anomaly, two hypothetical cases are used to perform a basic empirical comparative analysis to compare the normal tax treatments in the case where Section 42 roll-over relief in terms of the Income Tax Act (58 of 1962) does not apply, as opposed to the case where it is applicable. Thereafter, the purposive approach to legislative interpretation is applied to determine if the literal interpretation matches the true intention of the legislator. The investigation shows that an anomaly does exist in terms of the different normal tax treatments that results in a double tax position. The latter double tax position is questioned in terms of its equitability (fairness), certainty (transparency) and constitutionality by evaluating it against the principles of good tax policy and by considering the constitutional rights of the South African taxpayer. The paper concludes by suggesting recommendations that could possibly address and rectify the highlighted anomaly.

KEYWORDS: Asset-for-share; deemed expenditure; doctrinal analysis; South Africa; tax treatment; value-shifting

INTRODUCTION

Background to the research area

The exchange of assets in return for shares is prevalent in practice, especially in the context of business formations and restructuring operations (Rudnicki, 2015; Seligson, 2019; Van der Zwan & Viviers, 2021). Although the intention behind entering into asset-for-share transactions may be purely due to commercial reasons, such as the execution of business expansion strategies and the introduction of new lines of business, the consideration of the tax implications triggered by these types of transactions might become a hindrance to economic activity via share financing (National Treasury, 2004).

In essence, an asset-for-share transaction represents a barter transaction (Lewis, 2014). Asset-for-share transactions are often associated with value-shifting in terms of which the value of the asset exchanged for the issue of equity shares by a company is found not to be the same as the value of such equity shares. The term "value-shifting" is defined in terms of the South African Revenue Service's (SARS) Comprehensive Guide to Capital Gains Tax (CGT) (Issue 9) as: *"…the effective transfer of value from one entity to another without constituting an ordinary disposal for CGT purposes*" (SARS, 2020:776).

Initially the Eighth Schedule to the Income Tax Act (58 of 1962) (hereafter referred to in this paper as "the Act") introduced anti-avoidance measures specifically aimed at dealing with the so-called value-shifting arrangements. Despite the anti-avoidance measures that were introduced, taxpayers have been looking for ways of transferring or shifting economic value and growth without becoming liable to pay taxes on such transfers or shifts (Jansen van Rensburg, 2007).

The value-shifting anti-avoidance rules contained in the Eighth Schedule proved to be ineffective in regards to companies due to the fact that in many anti-avoidance transactions there was a lack of the 'connected person' relationship (Janse van Rensburg & Nel, 2018). The latter resulted in tax schemes where uneven exchanges allowed for value to be transferred without the appropriate tax consequences (National Treasury, 2012b). These tax consequences arguably include the avoidance of donations tax when value is transferred between taxpayers (Janse van Rensburg & Nel, 2018). In response to the aforementioned tax avoidance schemes, and in an attempt to combat and prevent revenue being lost to the fiscus, Section 24BA was introduced into the Act aimed at intercepting these value mismatches (Lewis, 2014). Section 24BA targets the value mismatch where a high value asset is exchanged for lower value equity shares by deeming such value difference to be a capital gain (i.e. a "deemed expenditure") that needs to be taxed in the hands of the person who obtains the asset in terms of Section 24BA(3)(*a*)(i) of the Act (South Africa, 1962). However, in support of economic activity that makes commercial sense and that facilitates corporate restructuring, Part III of the Act (South Africa, 1962) provides tax relief in specific circumstances subject to specific legislative requirements being met. Part III of the Act deals with special rules to enable tax neutral transfers and is generally referred to as the "corporate roll-over relief" provisions (Rudnicki, 2015; Seligson, 2019). The effect of these provisions, when they apply, is to defer the taxation of income and capital gains. One of these rules is *inter alia* specifically aimed at providing tax relief for asset-for share transactions in terms of Section 42 of the Act. In the absence of the roll-over relief provisions, the person who transfers an asset (referred to as the "transferor") will be taxed on the

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value of the proceeds received in exchange for giving up the asset, namely the equity shares that the company (referred to as the "transferee") issued to the transferor as the consideration for the disposal over the asset. Hence, this will trigger normal CGT consequences in the hands of the transferor in terms of the Eighth Schedule to the Act.

However, relief from the CGT consequences is provided for under Part III of the Act subject to the requirements of Section 42, which deals with an "asset-for-share" transaction, being met. For a disposal of an asset in exchange for shares in terms of an asset-for-share transaction not to constitute a disposal for CGT purposes, the normal tax effect (which includes CGT) needs to be overridden by another legislative provision. The power of Section 42 of the Act to overrule the CGT consequences that would normally be triggered by the Eighth Schedule to the Act where an ordinary disposal of an asset is exchanged for the issue of equity shares, are provided for in terms of Section 41(2) of the Act (South Africa, 1962).

It would however not make sense for this type of barter transaction to only qualify for relief solely in terms of normal tax. Therefore, provisions in other Acts determine that relief would also be provided for other tax types that could be triggered by an asset-for-share transaction, subject to the provisions of Section 42 of the Act also being met, in order to achieve overall tax neutrally for such an asset-for-share transfer. These include the exemption from transfer duty in the hands of the company obtaining the asset in terms of Section 9(15A) of the Transfer Duty Act (40 of 1949) (South Africa, 1949); the exemption of securities transfer tax in terms of Section 8(1)(*a*)(i) of the Securities Transfer Tax (25 of 2007) (South Africa, 2007) if the asset being transferred represents securities as defined (such as equity shares); and the waiver of the value-added tax in terms of Section 8(25) of the Value-Added Tax Act (89 of 1991) (South Africa, 1991) subject to the supply of the asset qualifying as a going concern (Kruger, 2020).

The history of the tax treatment of "deemed expenditure" to acquire an asset by issuing equity shares

A contentious issue that came under scrutiny via South African case law, is whether or not a company which obtains an asset in exchange for issuing its own equity shares does in fact incur any expense from a normal tax perspective in acquiring such asset.

In the Supreme Court of Appeal (SCA) case, C: SARS v Labat Africa Ltd (669/10) [2011] ZASCA 157, the Court had to determine whether the issuing of equity shares represented "*expenditure actually incurred*" as a consideration given to obtain a trade mark (i.e. an asset). The SCA held that the lower courts had correctly reasoned, based on the principles established in Edgars Stores Ltd v CIR (1988 A) and Nasionale Pers Bpk v KBI (1986 A), that the words "*actually incurred*" only required the taxpayer to incur an unconditional legal obligation and that Labat Africa Ltd had done so by undertaking to issue of its own equity shares. However, while the lower courts only focused on the interpretation of "actually incurred" the SCA extended its considerations to the meaning of "*expenditure*" and held that the terms "obligation" and "expenditure" were not synonyms. Due to the fact that the term "expenditure" is not defined in the Act, the Court relied on its ordinary meaning which encompasses the action of "*spending funds, disbursement or consumption*" and hence, requires a diminution of the assets (with a monetary value) held by the person who expends. Measured against the latter, the SCA held that the issue of equity shares did not give rise to any diminution in the assets of Labat Africa Ltd which issued the shares as consideration for the

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acquisition of the trade mark (asset). Consequently, the Commissioner of SARS's appeal was upheld and the taxpayer (Labat Africa Ltd) was not afforded a normal tax deduction as the issue of its own equity shares was found to not constitute "*expenditure*". This meant a zero base cost for taxpayers (companies) acquiring an asset in return for the issue of their own equity shares.

A policy discussion followed whereby it was contended that the findings in the Labat Africa Ltd case created a significant hindrance to company formations and other forms of share financing and that these principles were in contrast to widespread international practice (National Treasury, 2004a:56). In addition, the zero base cost had adverse effects by not reflecting the value received by the person who acquired equity shares in return for giving up an asset. This necessitated a rule to establish a base cost in respect of asset-for-share transactions which was initially introduced by way of a special provision in terms Section 24B(1) into the Act. This rule had to resolve the issue of the tax cost (value) regarding the "*expenditure actually incurred*" by the company (transferee) that acquired an asset in terms of an asset-for-share transaction in a normal tax context (National Treasury, 2004b). Section 24B(1) (which is now repealed) deemed a company that issued its own equity shares to acquire an asset, to actually have incurred an expenditure equal to the lesser of the market value of the asset and the market value of the equity shares issued. The Section 24B(1) provision was however effectively substituted with the enactment of Section 40CA into the Act since 1 January 2013, which also deems a company to incur expenditure when an asset is acquired in exchange for the issue of such company's equity shares (National Treasury, 2012a).

Section 40CA(1)(*a*) of the Act (South Africa, 1962) determines that a company which obtains an asset in a barter transaction is deemed to have actually incurred an expenditure equal to the market value of the equity shares issued immediately after the asset is obtained. However, this rule has recently been extended by the introduction of Section 40CA(*b*), to also allow "…*any deemed capital gain determined in terms of section 24BA(3)(a) in respect of the acquisition of that asset*" to constitute an amount of "deemed expenditure" actually incurred by the taxpayer to acquire such asset with effect from 1 January 2020 (National Treasury, 2019b). This extension of section 40CA is aimed to prevent a potential double tax position that could arise from the subsequent disposal of an asset that was acquired by a company in terms of a former asset-for-share transaction. However, it seems as if the recently extended section 40CA results in an anomaly when interpreted holistically with other provisions of the Act (more specifically Section 42; Section 24BA and Section 41(2)) triggered by an asset-for share transaction where value shifting takes place.

RESEARCH QUESTION, OBJECTIVES AND VALUE

The main purpose of this research paper is to investigate an anomaly in the normal tax treatment of deemed expenditure arising in terms of Section 24BA read with the recently amended Section 40CA of the Act where value-shifting occurs in terms of an asset-for-share transaction where a high value asset is exchanged for the issue of lower value equity shares. An anomaly comes to the fore when a comparison is made of the cases where the corporate roll-over relief provided for in terms of Section 41(2) read with Section 42 of the Act (South Africa, 1962) does not apply, and where it is not applicable.

Therefore, the research question that this research paper endeavours to answer is as follows:

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Is the current South African normal tax treatment of the deemed expenditure that arises due to value-shifting in terms of asset-for share transactions treated in an *equitable* (fair), *certain* (transparent) and *constitutional* manner in the hands of South African taxpayers?

In order to answer the former stated research question, the following research objectives are addressed in this research paper:

- To conduct a doctrinal analysis of the current legislation regulating the normal tax treatment of value-shifting in terms of asset-for-share transactions resulting in deemed expenditure;
- To critically analyse the various sections in the South African Income Tax Act (58 of 1962) that regulate the tax treatment of deemed expenditure incurred and to compare these tax treatments between asset-for-share transactions where the corporate roll-over relief provided for in terms of Section 42 of the Act does not apply and when it is applicable; and
- To evaluate if the current tax treatment of the deemed expenditure arising from value shifting was the true intention of the legislator and if it reflects the principles of *equity* (fairness) and *certainty* (transparency) resonating under the South African adopted principles of good tax policy, and to consider its *constitutionality* in terms of the constitutional rights of South African taxpayers.

The findings based on the doctrinal analysis endeavour to recommend a proposed amendment to the current South African Income Tax Act (58 of 1962) that will possibly regulate the tax treatment of value-shifting in terms of asset-for-share transactions in a more *equitable* (fair) and *certain* (transparent) manner and that will be aligned with the *constitutional* rights of South African taxpayers.

The remainder of this research paper is structured as follows: First, the research methodological criteria employed in this paper as the strategy for conducting the research are framed and motivated. This is followed by the doctrinal investigation based on the literal approach to analyse the separate and holistic (integrated) application of Section 42, Section 24BA, Section 40CA and Section 41(2) of the Act in order to conceptualise and explain its legislative working and requirements in order to identify and highlight the anomaly in the current normal tax treatment. To further enhance the meaningful understanding of the highlighted anomaly, and as a strategy of further inquiry, two hypothetical cases are used to conduct a basic empirical comparative analysis, namely: *Case 1: The normal tax treatment of a value-shifting arrangement where the Section 42 corporate roll-over relief does not apply;* and *Case 2: The normal tax treatment of a value-shifting arrangement where the Section 42 corporate roll-over relief does apply*. Hereafter, the research paper applies the purposive approach in the interpretation of the normal tax consequences of these legislative regulations by measuring it against the principles of equity (fairness) and certainty (transparency) that reflects good tax policy. In addition, the constitutionality of the current different tax treatments of the deemed expenditure due to the value-shifting in the hands of South African taxpayers is considered. Finally, the research paper concludes by summarising the main findings in the context of the research objectives to answer the research question, to make possible recommendations and to suggest an area for further research.

RESEARCH METHODOLOGY

Research resonating under the interpretivism paradigm of research is viewed as a holistic approach in conducting research whereby knowledge is created by the investigation and analysis of

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phenomena in its entirety (Zuber-Skerritt, 2001). The research conducted in this paper is positioned within the interpretivist paradigm. The latter is motivated by the fact that a doctrinal analysis of legislation is one of the typologies of legal research being described as a possible research paradigm in the field of taxation (Hutchinson, 2005; McKerchar, 2008).

Henning et al. (2004:23) recommend that more than one research instrument needs to be applied within the interpretive paradigm to create multiple dimensions on the investigation under review. Therefore, to scientifically ground the research methods applied within the interpretive paradigm to investigate the anomaly of the tax treatment of deemed expenditure under value-shifting in terms of asset-for-share transactions, a qualitative doctrinal analysis is applied supported by using two hypothetical cases to perform a basic empirical comparative analysis between value shifting transactions where the corporate roll-over relief does not apply, and where it is applicable.

Qualitative research could be employed that will help the researcher to explore the complexity of the research problem and build an understanding or an interpretation (McKercher, 2008). Therefore, the two different hypothetical cases are used to perform a basic empirical comparative analysis to enrich the understanding of the anomaly under investigation and to advance debate on it, in support of the doctrinal analysis (Stronach & McLure, 1997). From a validation perspective, Sarantakos (2005) indicates that an appropriate method to validate the findings of a qualitative comparative analysis is by means of supporting it with what is advocated in terms of other studies and relating existing literature.

The research in this paper is described as being inductive in nature, employing both a literal and purposive approach of interpretation, to investigate the South African legislative provisions regarding the normal tax treatment of deemed expenditure arising due to value-shifting in terms of which a high value asset is exchanged for the issue of lower value equity shares. The literal approach of interpretation focuses on the strict or the letter of the law interpretation, also known as the “black letter law” approach (Knight & Ruddock, 2008). Doctrinal research is based on the “black letter law‟ approach and is typified by the systematic process of identifying, analysing, organising and synthesising statutes, judicial decisions and commentary (Hutchinson & Duncan, 2012). Goldswain (2008) argues that the literal interpretation approach generally leans towards an interpretation in favour of the *fiscus,* based on the fact that the principles of equity and fairness do not play any part in such an approach of interpretation. In support of the literal approach of interpretation, it was indicated in the English case *Cape Brandy Syndicate v IRC*, (1921(1) KB 64) that when interpreting a tax act one should merely consider what is clearly said. There is no room for any intendment or presumption and nothing is to be read in, or implied as one can only look fairly at the language used by the act.

In turn, Goldswain (2008) describes the purposive approach as the act of seeking and ascertaining the intention of the legislator by reading an act as a whole and by placing it in the context of what is sought to be achieved (i.e. the policy objectives behind the legislation) and the relationship between the individual provisions of the act. In terms of the latter approach, the researcher (and ultimately the taxpayer) is enabled to realistically question the interpretation of legislation where it is perceived to be unfair in circumstances where the result of its application does not seem to match the true intent of the legislator.

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Where a mismatch is discovered between the result of the literal as opposed to the purposive approach of interpretation, an anomaly in the legislation exists. In other words, an anomaly occurs where the strict or literal interpretation and application of a specific provision(s) results in a deviation of what was to be expected when measured against the policy objective(s), true intent and rationale behind its legislative introduction. This deviation has been referred to in *Shaler v The Master and Another,* 1936 AD 136 (1936:143) as the resulting "absurdity" as a consequence of ambiguities, inconsistencies and uncertainties that arise in the process of trying to interpret legislation.

Therefore, the research methodology framed and motivated in the aforementioned discussion will be used in this paper to investigate the normal tax treatment of deemed expenditure due to value shifting in terms of asset-for-share transactions (more specifically Section 42, Section 24BA, Section 40CA and Section 41(2)) by means of a doctrinal analysis. The latter mentioned analysis will holistically consider if the difference between the normal tax consequence of the literal and purposive approach of interpretation is reflective of the principles of a good tax policy (specifically *equity* (fairness) and *certainty* (transparency)) and if it *constitutionally* supports the South African taxpayers' right to be treated equitably.

DOCTRINAL ANALYSIS

The next section encompasses a doctrinal analysis of the legislative provisions of the Act that could be triggered when value-shifting in terms of a high value asset in exchange for the issue of lower value shares occurs. This analysis aims to explain and conceptualise the separate working and application of these provisions based on the literal approach of interpretation.

Section 42

Section 42 of the Act (South Africa, 1962) provides roll-over relief in respect of an "asset-for-share transaction" as defined in Section 41(1). Such a transaction generally entails the disposal by a person of an asset to a company, and the issue of new equity shares by that company to such a person as consideration in return for the asset obtained (SAICA, 2016). The fact is highlighted that various detailed requirements in terms of Section 41(1) (falling outside the scope and purpose of this research paper) first need to be met in order for the Section 42 roll-over relief to apply. Once all the requirements are met the roll-over relief in terms of Section 42 will apply automatically to an asset-for-share transaction, unless the transferor and the transferee elect, by agreeing in writing, for it not to apply as determined under Section 42(8A)(*a*) of the Act (South Africa, 1962).

The roll-over relief provided is achieved by the fact that the person who transfers the asset (transferor) is deemed to be one and the same person as the company who obtains that asset (transferee) by issuing its own equity shares in terms of Section 42. The transferor and the transferee are deemed to be one and the same person in respect of (i) the acquisition date of the asset by the transferor; (ii) the cost and the date on which such cost was incurred by the transferor; and (iii) the method of use of the asset by the transferor.

The result of the roll-over relief is that the person who transfers the asset to the company is deemed to have disposed of the asset at its tax cost at the date of exchange in terms of Section 42(2)(*a*)((i)(aa) of the Act (South Africa, 1962) . The latter ensures that any possible capital gain that

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would have been triggered in terms of the Eighth Schedule to the Act will be nullified, as the proceeds and the base cost upon the transfer will in effect represent the same amount, namely the base cost of the asset in the hands of the transferor as on the actual date of exchange. In addition, where the asset that is transferred represents an allowance asset (as defined in Section 41(1) of the Act) no amount previously claimed as a deduction or capital allowance for normal tax purposes by the transferor will need to be recouped in any manner upon the exchange of items.

Cognisance should be taken of the fact that there is no requirement for the parties involved in an asset-for-share transaction to be connected persons in relation to each other for normal tax purposes, either before or after the transaction, for the corporate roll-over relief provisions to apply. For parties to be connected persons in relation to each other for normal tax purposes a minimum joint or individual direct or indirect interest of at least 20% in the equity shares and voting rights (in the instance of any person other than a company in relation to a company) are required in terms of paragraph (*d*)(iv) of the definition of a "connected person" in Section 1 of the Act (South Africa, 1962). However, where a connected person relationship between two companies needs to be established, paragraph (*d*)(v) of the definition of a "connected person" in Section 1 of the Act (South Africa, 1962) requires a minimum interest of 20% in equity shares or voting rights, but subject to the fact that no holder of shares may hold the majority voting rights in such company. This effectively means that there is no requirement that the values of the items being exchanged (i.e. an asset that is given in return for the issue of equity shares) need to be the same, or different. Therefore, the provisions of Section 42 of the Act could apply irrespective of the fact that the value-shifting is considered to be taking place at arm's length, or non-arm's length values.

Section 24BA

Section 24BA of the Act serves as an anti- value-shifting regulation aimed at ensuring that all asset-for-share transactions entered into by taxpayers effectively occur on a value-for-value basis (National Treasury, 2020). This means that Section 24BA intercepts and taxes the value mismatches in asset-for-share transactions taking place at non-arm's length prices, or prices that would not have applied between independent persons dealing with one another at arm's length.

Although Janse van Rensburg and Nel (2018) justifiably highlight that, based on the opening wording used in terms of Section 24BA(2)(*a*) of the Act (South Africa, 1962), namely: "…*in terms of any transaction*…" that Section 24BA could apply to any type of value-shifting transaction, the main focus of this research paper is on the application of Section 24BA in the context of asset-for-share transactions in terms of both the cases where the corporate roll-over relief provisions contained under Section 42 of the Act does not apply, and also where it is applicable.

Where an asset is transferred as a consideration in return for the issue of equity shares by a company and such an asset's value is higher than the value of those equity shares issued in exchange, the difference between the values is deemed, in terms of Section 24BA(3)(*a*)(i) of the Act (South Africa, 1962), to be a capital gain in the hands of the company that issued the equity shares. However, it is submitted that capital gains tax could only be triggered in terms of the Eighth Schedule to the Act if the following four basic principles required by the Eighth Schedule are adhered to, namely: (i) there must be an "asset" as defined in Paragraph 1 of the Eighth Schedule to the Act (South Africa, 1962); (ii) there must be "disposal" of such asset as defined in Paragraph 11 of the Eighth Schedule to the Act (South Africa, 1962); (iii) the disposal needs to take place at a "proceeds" as defined in terms of

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Paragraph 35 of the Eighth Schedule to the Act (South Africa, 1962); and (iv) the asset must have a base cost (Stiglingh et al., 2021). Based on an evaluation of the normal tax position of the company that acquires an asset in return for issuing equity shares, all four these principles are not adhered to as the issue of equity shares is regarded not to be a disposal for purposes of the Eighth Schedule as stipulated in terms of Paragraph 11(2)(*b*) of the said Schedule to the Act (South Africa, 1962). Therefore, it is important to take cognisance of the fact that the deemed capital gain that arises in the hands of the company that issued equity shares in terms of the value-shifting barter transaction did not realise within the ambit of the Eighth Schedule to the Act, but is instead established as a deemed capital gain (i.e. a deemed expenditure) within the scope of Section 24BA of the Act. The latter argument does however not nullify the recognition of the capital gain in terms of the Eighth Schedule, as this deemed Section 24BA capital gain still needs to be aggregated with such company's other capital gains and capital losses that were actually realised in the hands of such company in terms of the Eighth Schedule to the Act during the same year of assessment.

Furthermore, the purpose of Section 24BA of the Act is to ensure that the value-for-value proposition applies to all asset-for-share transactions in cases where a 'connected persons' relationship (as defined in terms of Section 1 of the Act) between the parties involved in the value-shifting transaction, is not present (Lewis, 2014). The latter argument is based on the following wording used by Section 24BA of the Act (South Africa, 1962): "…*the consideration... is different from the consideration that would have applied…in terms of a transaction between independent persons dealing at arm's length*".

It is therefore evident that for Section 24BA to apply to an asset-for-share transaction the parties involved should not be connected persons in relation to each other. This is further confirmed by the fact that if the parties are connected persons in relation to each other, the asset disposed of at a non-arm's length price will be reverted to its market value due to the application of Paragraph 38 of the Eighth Schedule to the Act (South Africa, 1962) that will be triggered and that will result in CGT consequences. This effectively means that the value mismatch between the value of the asset and the value of the shares will be intercepted by the deemed market value rules in terms of Paragraph 38 of the Eighth Schedule and will nullify the application of Section 24BA of the Act which is aimed at taxing the difference in values of the items being exchanged. This interaction and alignment between Section 24BA and Paragraph 38 of the Eighth Schedule to the Act is confirmed in terms of Section 24BA(4)(*b*) which determines that Section 24BA does not apply where a company acquires an asset from a person in a value-shifting asset-for-share transaction if Paragraph 38 of the Eighth Schedule applies (South Africa, 1962).

The fact that it would be highly improbable that independent taxpayers that deal with one another at arm's length will agree to considerations that do not reflect arm's length terms, should however be acknowledged. Based on the latter fact, supported by the exclusion of transactions that will be subject to the application of Paragraph 38 of the Eighth Schedule to Act, Van der Zwan and Viviers (2021) argue that it seems as if Section 24BA of the Act might primarily be aimed at related-party transactions that use the roll-over relief provisions (more specifically, Section 42 of the Act) while attempting to shift value without tax consequences in the process.

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Section 40CA

The main purpose of Section 40CA of the Act is to assist a company that obtains an asset (as defined in Paragraph 1 of the Eighth Schedule to the Act) in exchange for shares issued by that company to put a value on such asset for normal tax purposes. The legislative rule to determine the tax value to be placed on such an asset acquired will differ, depending on whether the roll-over relief provisions provided for in terms of Section 42 of the Act is applicable or not. This is due to the fact that if the corporate roll-over relief provisions as contained within Part III of the Act apply, the regulations of Section 42 will override the application of Section 40CA, as empowered by the stipulations contained within Section 41(2) of the Act.

This means that where roll-over relief (in terms of Section 42 of the Act) applies, the company (transferee) will obtain the asset from the other person (transferor) at the tax value of such asset in the hands of the transferor as on the date of exchange, while in the absence of the role-over relief in terms of Section 42 of the Act the provisions of Section 40CA of the Act need to be applied to determine this tax value.

Since the enactment of Section 40CA into the Act on 1 January 2013 (National Treasury, 2012a) it is deemed as if the company who acquires an asset in terms of an asset-for-share transaction to which Section 42 does not apply, actually incurred an amount of expenditure in respect of the acquisition of that asset equal to the market value of the equity shares at the time immediately after such equity shares were issued in order to acquire the asset (South Africa, 1962).

However, with effect from 1 January 2020, Section 40CA was amended to now also include the deemed capital gain arising from the application of Section 24BA of the Act in the case where a high value asset is exchanged in return for the issue of lower value equity shares. This Section 24BA deemed capital gain is now also allowed to be capitalised to the cost of the asset for normal tax purposes in the hands of the company that acquired the asset. This recent amendment to Section 40CA is aimed to clarify the interaction between Section 24BA and Section 40CA and to prevent a possible double tax position in the hands of the company which obtained the asset when such asset is disposed of in future. The National Treasury (2019a:13) explained the rationale for the amendment to Section 40CA as follows:

> *"Potential double taxation will arise in the instance that the company subsequently disposes of the asset due to the fact that the company would have paid tax on the capital gain triggered by Section 24BA which is currently not deemed to be expenditure incurred."*

Section 41(2)

Section 41(2) of the Act (South Africa, 1962) determines that the provisions of Part III of the Act (which includes the corporate roll-over relief for normal tax where an asset-for-share transaction takes place in terms of Section 42) must apply in respect of an asset-for-share transaction (amongst other corporate relief rules falling outside the scope of this research) as contemplated in Section 42, notwithstanding any provision to the contrary contained in the Act. However, Section 41(2) of the Act does exclude specific sections from the scope of Section 42's power to override other provisions and cannot overrule the regulations and provisions of Section 24BA (amongst other provisions not forming part of the focus of this research) to the Act (South Africa, 1962).

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BASIC EMPIRICAL COMPARATIVE ANALYSIS

To explain and conceptualise the normal tax consequences of the legislative provisions that could be triggered by a value-shifting asset-for-share transaction (as discussed in the former section of this paper) once applied holistically in terms of its integrated working and application, two hypothetical cases are compared and analysed next. This comparative analysis aims to highlight the anomaly in the current normal tax treatment as a result of the literal interpretation of the current legislation.

The application of Section 42, as opposed to Section 40CA, will depend on whether or not the requirements to qualify for the roll-over relief provided under Section 42, have been met. The difference in the normal tax treatments in each of the two hypothetical cases are considered below.

Case 1: The normal tax treatment of a value-shifting arrangement where the Section 42 corporate roll-over relief does not apply

Scenario:
Company X disposes of land (asset) with a market value of R2,5 million (original cost was R2 million one year ago) to Company Y in exchange for 1% of Company Y's equity shares worth R30 000 (its arm's length market value on the date of exchange) to be issued by Company Y.

Analysis of the normal tax treatment:
Since Company X does not hold a "qualifying interest" of at least 10% of the equity shares and voting rights in Company Y as required in terms of the Section 42(1) (South Africa, 1962), this means that this transaction will not qualify for the roll-over relief provisions of an asset-for-share transaction provided for under section 42 of the Act. Company X will realise a capital loss of R1 970 000 on the disposal of the land in terms of the Eighth Schedule to the Act, being the difference between the value of the equity shares received representing the proceeds (R30 000) and the base cost of the land (R2 million).

Because Company X and Company Y are not considered to be connected persons in relation to each other and also based on the fact that the value of the equity shares issued as consideration is different from the consideration that would have applied between independent persons dealing at arm's length, Section 24BA will be triggered. Company Y will realise a Section 24BA deemed capital gain of R2 470 000, representing the difference between the market value of the land (R2,5 million) and the market value of the equity shares (R30 000). The net gain from the transaction is R500 000 (being the difference between the capital loss of R1 970 000 and the deemed capital gain of R2 470 000). Therefore, Section 24BA succeeds in its aim to yield the same result as if Company X disposed of the asset at its market value.

It is important to note that Section 40CA, including its recent amendment, will now be allowed to be applied as Section 42 is not applicable, meaning that Section 41(2) cannot override Section 40CA. This means that in terms of the current Section 40CA, Company Y will be deemed to have actually incurred an amount of expenditure equal to R2.5 million representing the sum of the market value of the 1% equity shares immediately after the acquisition of the land (R30 000) (Section 40CA(*a*)) and the deemed capital gain (R2 470 000) determined in terms of Section 24BA(3)(*a*) in respect of the

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acquisition of the land (Section 40CA(*b*)). If Company Y disposes over the land at its market value (R2,5 million) soon after the value-shifting transaction, the tax cost of the asset for Company Y is therefore R2.5 million (i.e. the market value of the shares of R30 000 immediately after the exchange plus the deemed capital gain of R2 470 000 in terms of section 40CA(*b*)) which is essentially equal to the market value of the asset. Hence, no capital gain or capital loss will arise upon actual disposal. Therefore, it is evident that Company Y is not again taxed on the capital growth of R2 470 000 upon actual disposal.

Case 2: The normal tax treatment of a value-shifting arrangement where the Section 42 corporate roll-over relief does apply

Scenario:
Company X disposes of land (asset) with a market value of R2,5 million (original cost was R2 million one year ago) to Company Y in exchange for 10% of Company Y's equity shares worth R250 000 (its arm's length market value on the date of exchange) to be issued by Company Y.

Analysis of the normal tax treatment:
Company X is deemed to dispose of the land (asset) for proceeds equal to its base cost of R2 million at the date of the asset-for-share exchange, meaning that no capital gain is realised. Company Y is deemed to have acquired the property at a cost of R2 million as the parties are deemed to be one and the same person under the roll-over relief provisions in terms of Section 42 of the Act.

Section 41(2) determines that Section 42 overrides most of the other provisions of the Act (including Section 40CA and Paragraph 38 of the Eighth Schedule to the Act), but not Section 24BA. Therefore, if the value of Company Y's equity shares issued is different from the consideration that would have applied between independent persons dealing at arm's length, Section 24BA of the Act will be triggered. It is however necessary to understand why Company X would be willing to transfer its land to Company Y based on non-arm's length terms. Agreement to these non-market related type of exchanges could usually be ascribed to another person's connected person relationship to Company X (for example a family trust holding the remaining 90% of Company Y's equity shares which is a connected person in relation to Company X's holder of shares). Where it is established that parties transacting at arm's length would not have agreed to this consideration, Section 24BA of the Act will be triggered. Since the market value of the asset (R2,5 million) exceeds the market value of the 10% shareholding (R250 000) on the date of exchange, and also due to the fact that Paragraph 38 of the Eighth Schedule to the Act does not apply, the difference of R2,25 million (meaning R2,5 million less R250 000) is deemed to be a capital gain realised in the hands of Company Y in terms of Section 24BA(3)*(a)*(i) of the Act.

Based on the fact that Section 41(2) of the Act determines that Section 42 overrules Section 40CA, Company Y will not be allowed to apply Section 40CA in any manner. Therefore, Company Y cannot increase the tax cost of the land (asset) acquired with the amount of the Section 24BA deemed capital gain (R2,25 million) that was realised as a result of the value-shifting in the asset-for-share transaction.

It is now important to note that if Company Y disposes of the land (asset) in future, the base cost of the land for CGT purposes will be deemed to be R2 million, representing the tax cost that rolled-over

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from Company X to Company Y in terms of Section 42. If Company Y disposes over the land at its market value (R2,5 million) soon after the value-shifting transaction, this means that a capital gain of R500 000 will realise in the hands of Company Y in terms of the Eighth Schedule to the Act despite the fact that Company Y was previously already liable for tax on the Section 24BA deemed capital gain of R2,25 million due the value mismatch. Consequently, this case results in a double normal tax position in the hands of Company Y.

Conclusions based on the comparative analysis of the two hypothetical cases

Based on a comparison of the two cases, it is evident that an anomaly exists between what the recently amended Section 40CA was intended to achieve and its actual effect for normal tax purposes. The anomaly represents the double tax position that a transferee will find itself in when entering into a high value asset in exchange for a lower value equity shares transaction whereby it will be taxed two times on the same difference in values. Firstly, the transferee will be taxed on the difference in values upon the exchange in terms of a deemed capital gain that will arise due to the application of Section 24BA of the Act. Secondly, the transferee will again be taxed on the same difference in value upon the subsequent disposal of the asset which it obtained in the former asset-for-share transaction, as the base cost upon disposal for purposes of the Eighth Schedule will represent the original cost of the asset without consideration of the previously taxed Section 24BA deemed capital gain being allowed to be capitalised as part of the base cost in terms of the new Section 40CA(*b*) of the Act. The denial of the Section 24BA deemed capital gain to be capitalised is due to the strict and literal interpretation of Section 41(2) which overrules the application of Section 40CA if the roll-over relief in terms of Section 42 applies.

It is however questionable if this double normal tax position that arises as explained in *Case 2* was the true intention of the legislature and if the recent amendment to Section 40CA of the Act was only aimed at eliminating the double tax effect in instances such as described in *Case 1*. To investigate this issue further, the purposive approach of interpretation is applied next to determine if the tax consequences of the former highlighted and explained anomaly encapsulates the true intention of the legislator, reflects the qualities of good tax policy and supports the constitutional rights of the South African taxpayer.

APPLYING THE PURPOSIVE APPROACH OF INTERPRETATION

From judgments laid down in previous cases it is evident that courts have departed from the ordinary effect of the words of the legislation to avoid the element of absurdity (such as an anomaly encapsulating uncertainty, inconsistency and ambiguity) and to give effect to the "*true intention of the legislature*" (*Venter v R*, 1907 TS 910; *M v COT*, *21 SATC 16; Farrar's Estate v CIR, 1926 TPD 501*). By applying the "intention of the legislature" rule under the purposive approach of interpretation it is pivotal to clearly determine the legislature's policy objective(s) behind the enactment of a specific provision(s) and to ensure that its interpretation and application do not contradict such policy objective(s) (*Glen Anil Development Corporation Ltd v SIR (1975) 37 SATC 319*).

Hence, it is questionable if the anomaly of a double tax position arising in the hands of the company obtaining a high value asset in exchange for the issue of its own lower value shares (where the

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corporate roll-over relief is applicable) was the true intention of the legislator when the recent amendment was made to Section 40CA of the Act.

From the explanation of the amendment of Section 40CA (National Treasury, 2019a), it was to try and eliminate the double tax position that could occur on the subsequent disposal of the asset after it was obtained in terms of a value-shifting asset-for-share transaction. The amended Section 40CA allows for the difference in values between a higher value asset that was exchanged for lower value shares and that was deemed to give rise to a capital gain in terms of Section 24BA(3)(*a*)(i) of the Act, to be capitalised as part of the base cost of such asset upon its subsequent disposal (National Treasury, 2019). However, it is clear, based on the literal approach of interpretation of the legislation, that this regulation aimed at the prevention of a double tax position is not effective in all cases due to the fact that the integrated working of the various provisions of the Act are currently not entirely aligned with one another.

Evaluation against the principles of equity and certainty of good tax policy

Smith (1784:888) formulated four maxims of taxation, namely tax (i) *equity*; (ii) *certainty,* (iii) *convenience*; and (iv) *economy*. These principles of good tax policy are used as a theoretical framework in the literature by a variety of tax and legal related research (Du Preez, 2018; Gribnau, 2013; Nel & Viviers, 2015; Olivier, 2017; Van Dyk, 2015). Overall, Smith's (1784) eighteenth century world-view of taxation is that the tax treatment of items should ultimately reflect the principles of *equity* and *certainty*, considered to be the most relevant in this paper.

The principle of *equity* (or fairness) could be broadly described as the act of treating all subjects of a state or jurisdiction in terms of their true ability to be able to contribute towards the support of the government and society of such jurisdiction (Smith, 1784). In addition, tax *certainty* (or transparency) encapsulates the fact that where a subject is required to pay tax, such tax needs to be clear and certain, and not arbitrary (Smith, 1784). Smith's (1784) principles of equity and certainty was adopted by the Davis Tax Committee (2015) in South Africa.

Considering the anomaly in the tax treatment identified, it seems as if the current normal tax regulation of value-shifting in terms of asset-for-share transactions is not reflecting the adopted principles of *equity* and *certainty* as differences exist in the normal tax treatment of deemed expenditure in the form of the deemed capital gain established by Section 24BA of the Act when compared between transactions where Section 42 relief does not apply (see *Case 1*), and transactions where Section 42 relief does apply (see *Case 2*). These different normal tax treatments are unfair towards taxpayers finding themselves in a double tax position as under *Case 2*, considering that the aim of the recent amendment to Section 40CA of the Act was to try and eliminate this double tax position. The overall alignment of the various legislative provisions of the Act regulating value-shifting seems to be non-transparent which creates uncertainty regarding the correct application of these provisions.

Consideration the constitutionality of the identified anomaly

South Africa is a Constitutional State where the Constitution of the Republic of South Africa Act (108 of 1996) reigns supreme and no laws or legislation (including South African tax legislation) are allowed to be in breach thereof (SAICA, 2003). Chapter 2 of the South African Constitution (1996)

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deals with the Bill of Rights whereby the rights of all natural persons and legal persons (*inter alia* all South African taxpayers in the context of this research) are to be respected and protected as regulated in terms of Section 7(2) of the Constitution (South Africa, 1996).

However, in terms of Section 7(3) these rights contained in the Bill are subject to the limitations indicated under Section 36 (South Africa, 1996). This means that in order to prove that a specific provision in the Income Tax Act is unconstitutional it needs to be proved that a right in terms of the Bill of Rights is infringed and that such infringement is not justifiable under Section 36 of the Constitution.

Van Schalkwyk (2001) investigated the question about whether taxpayers can indeed successfully challenge the so-called unconstitutional provisions of the Income Tax Act. She concluded that it might be easier in cases concerning income tax to satisfy the limitation test of Section 36 of the Constitution (South Africa, 1996) in proving that the law in question serves a constitutionally acceptable purpose and that there is sufficient proportionality between the harm done by the law (the infringement of fundamental rights) and the benefits it was designed to achieve (the purposes of the law) (Van Schalkwyk, 2001).

A general limitation clause under Section 36 of the Constitution (South Africa, 1996) states that rights may be limited by a law of general application that is "*reasonable and justifiable in an open and democratic society based on dignity, freedom, and equality*". From a law perspective "*equality under and before the law*" is viewed as a principle well rooted in the doctrine that all persons (i.e. taxpayers) should be subject to the same laws of justice, fairness and equality (William, 2011).

It is therefore argued that the stipulations of Section 41(2) of the Act and the non-inclusion of Section 40CA from its scope is unconstitutional and an infringement of the right of equality of taxpayers entering into an asset-for-share transaction that adheres to the requirements of both Section 42 and Section 24BA. As Section 24BA deems the difference in values to be a capital gain that is allowed by Section 40CA to be added to the base cost of such asset upon its subsequent disposal, this deemed expenditure of a capital gain will not be allowed to be added to the base cost in terms of Section 40CA as Section 40CA's application is nullified by Section 41(2) (as highlighted in *Case 2*). This seems to be unjustifiable, unequitable and unfair to tax such a taxpayer in terms of Section 24BA and again upon the subsequent disposal of the asset as the base cost will not include the previously taxed Section 24BA deemed capital gain.

Finally, De Koker and Williams (2011) advocates that where inequity in the tax system prevails, such as the anomaly highlighted in this research that creates a double tax position that is viewed as an infringement of South Taxpayers' constitutional right to equality, it is the task of the legislature to address it through the enactment of appropriate amendments.

CONCLUSIONS, RECOMMENDATIONS AND SUGGESTION FOR FURTHER RESEARCH

The research question that this paper attempted to answer was whether the current South African normal tax treatment of the deemed expenditure that arises due to value-shifting in terms of asset-

ISBN NUMBER: 978-0-620-92690-4

for share transactions is treated in an *equitable* (fair), *certain* (transparent) and *constitutional* manner in the hands of South African taxpayers.

Based on the qualitative doctrinal analysis, supported by the use of the basic empirical comparative analysis of two hypothetical cases, an anomaly was found to exist between what the recently amended Section 40CA of the Act tried to achieve, and its actual resulting normal tax effect. The comparison of the two hypothetical cases showed that different normal tax treatments arise in the hands of the person who acquires an asset in terms of a high value asset in exchange for the issue of lower value shares where Section 24BA needs to be applied in conjunction with either Section 42 or Section 40CA. It was found that a double tax position arises where Section 42 applies, causing Section 41(2) to nullify the application of Section 40CA aimed at allowing the Section 24BA deemed capital gain to be capitalised as part of the base cost of the asset for CGT purposes upon its subsequent disposal.

Based on the findings of the purposive approach of interpretation, it is held that this double tax position resulting from the literal approach of interpretation of the current legislation is highly unlikely to have been the true intention of the legislator when the recent amendment to Section 40CA of the Act was made. This mismatch between the normal tax treatments where Section 42 applies, and does not apply, in a value-shifting asset-for-share transaction was also found to be non-reflective of the principles of *equity* and *certainty* resonating under the adopted Adam Smith's (1784) principles of good tax policy. Furthermore, the double tax position caused by this non-alignment of the current legislative provisions regulating value-shifting in terms of asset-for-share transactions was found to be unjustifiable and consequently unconstitutional, as it infringes taxpayers' constitutional right of equality.

Section 102 of the Tax Administration Act (28 of 2011) (South Africa, 2011) places the burden of proof on the taxpayer to prove that an amount is deductible. Therefore, it is submitted that the company (South African taxpayer) who obtains a high value asset in exchange for the issue of lower value equity shares in terms of an asset-for-share transaction to which Section 42 applies, could apply the principles of good tax policy (namely *equity* (i.e. fairness) and *certainty* (i.e. transparency) (Smith, 1784) as well as the *constitutionality* argument (namely the right of equality before and under the Act) as grounds to prove why the deemed Section 24BA capital gain should also be allowed to be deducted as part of the base cost of the asset from the proceeds for CGT purposes upon the subsequent disposal of such asset as part of its burden of proof responsibility in terms of Section 102 of the Tax Administration Act (28 of 2011).

In order to address this anomaly, and to prevent this double tax position from arising (as proven under *Case 2* of the comparative analysis), it is recommended that an additional proviso, similar to the following, needs to be introduced under Section 41(2) of the Act:

> "*Provided that, only in respect of an asset-for-share transaction and an amalgamation as contemplated in Sections 42 and 44 respectively, the tax value of any asset as determined under Section 42(2)(b) and Section 44 (as the case may be) and at which the transfer in terms of the roll-over relief will occur, must be increased by the amount of any deemed capital gain determined in terms of Section 24BA(3)(a) in respect of the acquisition of such an asset*."

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Furthermore, it is held that by simply adding Section 40CA to the list of exclusions currently listed under Section 41(2) will not resolve the anomaly as this will result in a contradiction in the different rules regarding the tax value that needs to be placed on the asset transferred in terms of an asset-for-share value shifting transaction that is differently regulated in terms of Section 42 and Section 40CA, respectively. Where roll-over relief does apply in terms of Section 42 of the Act, the asset transferred needs to transfer at the tax value of such asset in the hands of the transferor as on the date of the asset-for-share exchange. The latter effectively means that the company that obtains such an asset will be deemed to be one and the same person as the transferor. In contrast to the latter mentioned Section 42 asset value rule, Section 40CA determines that the tax value to be placed on the asset received for normal tax purposes in the hands of the company that obtained the asset in exchange for the issue of equity shares, is the market value of the equity shares immediately after the barter transaction occurred.

Therefore, it is crucial that the superiority of Section 42 that needs to take precedence above the application of Section 40CA as currently regulated in terms of Section 41(2) of the Act, needs to be retained in its entirety, except for the recent amendment made to Section 40CA in respect of allowing the Section 24BA deemed expenditure in the form of a deemed capital gain to be added to the base cost of such asset. This exclusion will assist to eliminate the anomaly identified and will align the provisions and integrated working of Section 42, Section 24BA and Section 40CA of the Act in a more *equitable* (fair) and *certain* (transparent) manner. In addition, this alignment will also be viewed to be more *constitutional* as all taxpayers involved in an asset-for-share transaction will be treated in an equitable manner. This will avoid the anomaly resulting in a double tax position in the hands of the company obtaining an asset due to value-shifting in terms of an asset-for-share transaction to which the roll-over relief of Section 42 applies.

The ambit of the rights of the fiscus (i.e. government as regulator and revenue collector) arising from the interpretation of the Bill of Rights clauses in the Constitution (South Africa, 1996), read with the doctrinal investigation conducted in this paper regarding the anomaly highlighted where Section 42 of the Act applies, is identified as an area that could be further investigated as a topic for future research. The research is limited in terms of tax legislation that is changed and amended on a regular and continuous basis.

Note to the reader:

It is reassuring to highlight and acknowledge the fact that the Draft Taxation Laws Amendment Bill that was issued on 28 July 2021 (the date after this research paper was submitted for review) does suggest similar amendments in an attempt to overcome the anomaly highlighted in this research paper (National Treasury, 2021).

ISBN NUMBER: 978-0-620-92690-4

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

CENTRAL REGION

Assessing an Automotive Company's Competitive Strategy in Preparation for Saudi Vision 2030

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ABSTRACT

Saudi Vision 2030 is a policy initiative that aims to introduce significant economic and structural reforms in the Kingdom of Saudi Arabia. Private sector firms have been identified as key factors driving this growth, which requires businesses to reconsider their competitive strategy. This paper assesses the competitive strategy of the largest Saudi Arabian motor company and biggest distributor of Toyota vehicles in the world in preparation of Saudi Vision 2030. Qualitative data were collected by conducting in-depth, face-to-face interviews with 32 senior executives from the firm. The questions used a combination of the SWOT, PESTEL, balanced scorecard, and Porter's generic strategies. It was found that interviewees had a broad understanding of the competitive environment of the automotive sector and appreciated that a clear competitive strategy is required to prepare for Saudi Vision 2030. Some participants asserted that more strategic reforms were required within the company, while others proposed new strategies or business models. The practical application of multiple strategic models to assess a firm's competitive strategy is presented. Furthermore, the paper provides much-needed knowledge about how a private sector firm perceives how the reform initiative will influence its competitive strategies.

KEYWORDS: Automotive firms; Porter's competitive strategy, Saudi Arabia; Saudi Vision 2030; strategic models

INTRODUCTION

In 2016 the Kingdom of Saudi Arabia (KSA) announced a reform plan, called Saudi Vision 2030 (Thompson, 2017), which has been adopted as a methodology and roadmap for economic and development activities in the kingdom (Saudi Vision 2030, 2018). The plan aims to bring about significant economic and structural reforms, including enhancing both the productivity and competitiveness of local companies, establishing strategic international partnerships, and simplifying and aligning governmental systems with the country's priorities (Rostan & Rostan, 2020). According to Stenslie (2018), the fundamental aim of this reform plan seems to be to reduce the government's dependence on oil and emphasising economic diversity by turning the private sector into an engine of growth. This sector currently contributes less than 40% of KSA's gross domestic product (GDP), while the aim is to increase this percentage to 65% (Grand & Wolff, 2020). However, such substantial reforms as anticipated will require private sector businesses to reconsider their current strategies. To achieve the strategic objectives of Saudi Vision 2030, 13 Vision Realization Programs (VRPs) have been established. One of these is the National Industrial Development and Logistics Program, mandated to transform the country "into a leading industrial power and an international logistics platform". A key element identified for development and growth is the automotive sector (Saudi Vision 2030, 2021).

Motor companies are facing severe competition due to changing customers' preferences and continuous technological developments. Yet the Saudi Arabian automotive marketplace is vibrant (Tausif & Haque, 2018). In 2019, Saudi Arabia had the largest share in the Gulf Cooperation Council (GCC) car market with 529 000 vehicles sold (Statista, 2021). In addition, in June 2018 the country finally ended its legal ban on women driving, opening the way for millions of female drivers to motor across a country three times bigger than Texas (Faudot, 2019; Kemppainen, 2019; Krane & Majid, 2018). Since the introduction of female drivers, an increase in demand for automotive vehicles is expected (Randheer, Trabulsi, Al Ajmi & Al Jasser, 2017; Tausif & Haque, 2018). Even further growth in the local use of motor vehicles is also expected because – as with other countries in the Middle East – the nation is experiencing a demographic youth bulge (Grand & Wolff, 2020). These socio-economic features make Saudi Arabia attractive to international motor manufacturers and dealers, in addition to its geographic position as a regional hub (Al Fayad, 2014; Randheer et al., 2017). Considering all these factors, combined with the introduction of Saudi Vision 2030, it is imperative that automotive firms reconsider their relative position in the marketplace. According to Porter (1980), a company's competitive strategy is heavily dependent on how well it relates to the industrial environment in which it operates. For purpose of the study reported here, the automotive industry is recognised as playing a key role in the reforms proposed by Saudi Vision 2030.

Reports on Saudi Vision 2030 include assessments on the progress of the reform plan as a whole (Faudot, 2019; Grand & Wolff, 2020). The institutional and political obstacles of Saudi Vision 2030 were investigated by Moshashai, Leber and Savage (2020), while Alregab (2021) examined the role corporate governance in Saudi-listed firms played in attracting foreign investment to Saudi Arabia. Other studies have been conducted on various elements of the reform plan, including the production of renewable and sustainable energy (Amran, Amran, Alyousef & Alabduljabbar, 2020), health care (Alhawassi, Abuelizz, Almetwazi, Mahmoud, Alghamdi, Alruthia, BinDhim, Alburikan, Asiri & Pitts, 2018; Rahman & Al-Borie, 2020), the effect of oil prices on economic transformation (Jawadi & Ftiti, 2019), and examining female entrepreneurs in the Saudi workforce (Kemppainen, 2019). No studies

ISBN NUMBER: 978-0-620-92690-4

were found which had investigated private sector firms and their competitive strategies in preparation for the significant reforms mandated by Saudi Vision 2030. The problem can be summarised that such companies are regarded as the engine of growth and that this sector has to increase its contribution to GDP from less than 40% to 65%. The objective of this paper is to assess the competitive strategy of the largest automotive company in Saudi Arabia by combining the strategic models of SWOT, PESTEL and the balanced scorecard (BSC), combined with Porter's generic strategies, in preparation for Saudi Vision 2030. These four strategic models were constructed in an interview guide to assess, define and evaluate the current strategy employed by the company.

This report contributes to the literature in two ways: 1) it provides empirical results from the largest motor company in one of the least understood economies in the world (Al-Kibsi, Woetzel, Isherwood, Khan, Mischke & Noura, 2015); and 2) a novel combination of four strategic models was used to gather information about the internal and external environment of the case study company in preparation for Saudi Vision 2030. The results from the single case study of Abdul Latif Jameel (ALJ) are presented after a brief discussion of strategy and the role of strategic models after which the materials and methods are presented.

STRATEGY AND STRATEGIC MODELS

Khalifa (2019:136) argued that strategy is "a cohesive core of guiding decisions" firms have to take during uncertain circumstances in response to reality happening in their environment. Central to formulating/reformulating strategy is therefore an understanding of an organisation's environment – both internal and external. This knowledge supports management to better match internal strengths and external opportunities (Darling & Venkitachalam, 2021). Various strategic models have parameters or elements to gather and analyse specific information about such environments (Aithal, 2017). Saudi Vision 2030 is creating uncertain circumstances to which private sector firms in the KSA have to respond by evaluating and possibly reformulating their existing strategies.

Accordingly, in line with the objective of this paper to assess the competitive strategy of the largest automotive company in Saudi Arabia in preparation for Saudi Vision 2030, four strategic models were applied for a comprehensive analysis of ALJ (Table 1).

Table 1: Overview of the four strategic models examined in this study

Strategic model	Factors/Perspectives	Scope of analysis	Purpose	Reference
SWOT	Strengths Weaknesses Opportunities Threats	Internal and external environment	Symmetrical tool to conduct an industry- and competitive strategy analysis	Weihrich (1982) Anton (2016)
PESTEL	Political Economic Socio-cultural Technological Environment Legal	External	Environmental assessment and scanning tool for strategic planning and decision making	Daft &and Weick (1984)

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BSC	Financial Customer Internal processes Learning and growth	Internal	Performance measurement system	Kaplan and Norton (1992)
Porter's generic strategies	Cost leadership Differentiation Focus	Internal	Creating a sustainable competitive advantage	Porter (1985)

Each model has its strengths and shortcomings, as can be gathered from the third and second columns in the table. Using a single strategic model can produce useful results at times. For example, Vlados (2019) analysed two firms operating in a similar external environment – in the same country, industry and market. Vlados (2019) concluded that, based on a conventional SWOT analysis, firms end up with completely different opportunities and threats, hence the SWOT analysis depended on the particular and comparative strengths of each firm and its strategic direction.

At other times, a combination of these strategic models can compensate for the shortcomings of each tool. Criticism of the SWOT analysis model was highlighted by Hill and Westbrook (1997), Helms and Nixon (2010), and Popescu and Scarlat (2015). According to Sadat, Safari, Sadabadi and Nazari (2015), the SWOT and BSC are subjective process models that lack an agile competitive structure. For the BSC, Ahmadi, Maleki and Ahmadi (2019) argued that it has emerged as a decision support tool at the strategic management level only. Also, Mathea (2015) has criticised the BSC framework in its cause-and-effect relationships among four perspectives. Considering these criticisms of using single strategic models, this study combined multiple strategic models to address these shortcomings.

Kaplan and Norton (2008) used the same strategic model combination of BSC, SWOT and PESTEL but combined it with Porter's five forces model and not Porter's generic strategies as was applied in this study. Other authors have also investigated a combination of multiple strategic models to overcome the shortcomings of each model; their reports are summarised in Table 2.

Table 2: An overview of strategic model combinations

Author(s) – alphabetical order	Strategic model combination	Aim/Framework	Comparison with this study
Ahmadi et al. (2019)	SWOT and PESTEL	Analysed the current internal and external environment to evaluate the purpose and design of a new strategy	Did not use the BSC model.
Cavaco (2016)	SWOT, BSC and Porter's Five Forces Model	Designed a sustainable competitiveness evaluation- and execution system as an alternative to the current strategic planning process	Did not consider the PESTEL model.
Cooper (2010)	BSC, SWOT, PESTEL and Porter's Five Forces Model	Built a strategy map at departmental level	Though all models were employed, the BSC guided the essence of the study. A narrow scope of the study.
Mathea (2015)	BSC and Porter's Five Forces Model	Strategy formulation and implementation	Did not include SWOT and PESTEL.

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Nwagbara (2011)	SWOT, PESTEL and Porter's Five Forces Model	Improved marketing and management strategies	Did not consider the BSC model.
Purwanto (2014)	SWOT, PESTEL and Porter's Five Forces Model	Internal business environment analysis.	Did not use the BSC model.
Sadat et al. (2015)	SWOT, BSC and Porter's Five Forces Model	Development of a strategy	Did not include the PESTEL model.
Skrypnichenko (2017)	SWOT, BSC and Porter's Five Forces Model	Developed a structured business plan	Did not include the PESTEL model.
Stamatović et al. (2020)	SWOT, BSC, PESTEL and Porter's Five Forces Model	Investigated innovation in the Serbian market based on an environmental and competitive (internal and external) analysis.	Additional models were analysed.
Stanford-Billington and Cannon (2010)	SWOT, PESTEL and Porter's Five Forces Model	Analysis and strategic planning	Did not consider the BSC model.

Table 2 indicates that some authors used a similar strategic model combination of SWOT, PESTEL and BSC using Porter's five forces model and not Porter's generic strategies. Other authors used other combinations of strategic models. What matters is combining different models to achieve a robust hybrid tool for analysis.

It can be concluded that these strategic models can be valuable in setting, adjusting, improving and implementing strategies. The greater the number of strategic models employed, the more purposeful the results. According to Mathea (2015), the SWOT, BSC and PESTEL frameworks are strategic tools providing insights for businesses and their competitive environments as the basis of strategy development.

MATERIALS AND METHODS

Qualitative data were collected about the automotive businesses of ALJ in the Saudi Arabian private sector. ALJ is viewed as a unique brand name in Saudi Arabia. Abdul Latif Jameel founded the business in 1945 by addressing and expanding the need for consumer choice in personal transportation (Randheer et al., 2017). It has since expanded into one of the leading independent Toyota distributors in the world with deep roots in the Middle East, North Africa and Turkey. Over the last more than 70 years, ALJ has established an extensive operations infrastructure and has built the largest vehicle distribution network in Saudi Arabia, with more than 270 branches and over 17 500 employees worldwide, representing over 40 nationalities (ALJ, 2017).

A qualitative case study approach was selected and followed as it is a valuable method for business and management science research to develop theory, evaluate programs and develop interventions (Baxter & Jack, 2008). Yin (2017:13) defines a case study as an empirical inquiry investigating a real-life problem. Stake (1995:134-135) argued that a qualitative case study is highly personal within in-depth studying of participants. ALJ was specifically selected as, similar to other Saudi Arabian private sector companies, it will require to be transformed with the implementation of Saudi Vision 2030. This includes, amongst others: expanding the female labour force (Kemppainen, 2019), generating jobs in non-governmental sectors (Nurunnabi, 2017), catering for women drivers (Faudot, 2019), and the increased entrance of multinational firms (Alnaeem, 2016).

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In line with the extensive transformation planned for the country as a result of Saudi Vision 2030, ALJ will have to change its competitive strategy to survive. However, the extent to which it will change, and whether the company is prepared for this change, is of course not yet known.

Data collection

The target population was employees of ALJ's Toyota and Lexus divisions in Saudi Arabia. Representatives of top management from different hierarchical levels in eight departments were considered. These employees were purposively selected, based on their level of seniority and knowledge of the company's strategy. The senior staff were sampled as they have the responsibility to design and implement ALJ's strategy. The profile of the interviewees is illustrated in Table 3.

Table 3: Profile of representatives of ALJ top management selected for interviewing

Description	Category	Number of interviewees
ALJ department	Sales	7
	Information technology	5
	Corporate shared services	4
	Strategy	4
	Marketing	4
	Finance	4
	Human resources (HR)	3
	Risk management	1
Designation	Senior managing director (SMD)	1
	Managing director (MD)	5
	Director	12
	Senior general manager (SGM)	11
	General manager (GM)	3
Length of employment	1 to 5 years	2
	6 to 10 years	4
	More than 10 years	26

Qualitative data were collected by conducting semi-structured interviews with 32 senior employees, whose diverse experience is illustrated in Table 3. Most of the study population have been employed at ALJ for more than 10 years, indicating in-depth knowledge of the company and its strategies. All interviews were conducted face-to-face in a private, closed meeting room at the ALJ premises in Jeddah, Saudi Arabia, over four weeks in November 2018, and were digitally recorded with participants' approval. With the exception of two, all participants agreed to the recording. In these two cases, the researcher documented the feedback manually. Each interviewee was questioned on their understanding of the components of the SWOT, PESTEL and BSC models relating to ALJ, and the competitive strategy of the company, which included a discussion around Porter's generic strategies. These models and competitive strategies were explained and clarified before starting the interviews.

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Data analysis

The recording of each interview was transcribed and the transcripts were then analysed in three broad stages: 1) the reduction or breakdown of the text, 2) coding of the text into themes, and 3) integration of the text by interpretation (Attride-Stirling, 2001). The first two stages were combined by reducing the text through coding. The coding was performed manually line by line to identify meaningful and aligned themes. The process of coding led to the development of central themes. Similar to the research conducted by Darling and Venkitachalam (2021), the findings reported here were grouped into themes, which are presented below.

CASE STUDY RESULTS AND FINDINGS

It was evident that the interviewees (numbered from Participant 1 to 32) reflected a clear understanding of the obstacles facing the automotive sector and appreciated the significance of designing and applying a competitive strategy in preparation for Saudi Vision 2030. They revealed both the current competitive status of the firm, as well as plans and strategies to follow. Various interviewees asserted that more strategic reforms were required, while others proposed new strategies or business models. Table 4 aggregates the central themes that were uncovered from the 32 interviewees' responses.

Table 4: Emerging themes from the interviews

Question	Category	Codes	Central themes
i) Could you identify the strengths of your firm (internally)?	SWOT	Strengths	– Loyal associates – Brand name – Values of respect, improve, pioneer and empower
ii) Could you identify the weaknesses of your firm (internally)?		Weaknesses	– The bureaucracy in decision-making processes – Communication effectiveness – The weak role of HR (recruiting, training and retaining talents)
iii) Could you identify the potential opportunities for your firm (externally)?		Opportunities	– Saudi Vision 2030 – Digitalisation – Expansion in the automotive sector
iv) Could you identify the potential threats (challenges) for your firm (externally)?		Threats	– The regular changing in government rules and strict regulations – Slowdown and economic recession – Korean and Chinese competitors
By referring to the competitive environment (CE) could you identify the challenges of Saudi Vision 2030 for your firm from the following perspective?	PESTEL	Political challenges	Saudi Vision 2030 brings up some challenges in terms of; Saudisation, increases in fuel and utility prices, in addition to taxes and other governmental fees
		Economic challenges	There are some challenges, but this company is confident about its position
		Socio-cultural challenges	The firm is benefiting from female employment and women drivers
		Technological challenges	From technological perspectives, the firm is facing this challenge irrespective of Saudi Vision 2030

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		Environmental challenges	The firm is a pioneer, proactive and eco-friendly
		Legal challenges	The firm considers this as part of the political perspective
By referring to BSC and the performance measurement within your firm, what are the key performance indicators (KPIs) used to assess the following perspectives?	BSC	Financial performance	The firm is applying several KPIs and is financially strong
		Customer value	The firm is applying several KPIs and has good relationships with its customers and could acquire and retain them for a long time
		Internal process effectiveness	The firm is applying some KPIs and has an effective internal process and efficient network
		Learning and growth	A lack/gap was identified in knowledge sharing, cultural behaviour, teamwork and fair treatment
In terms of a competitive strategy: i) Describe your firm's current strategy?	COMPETITIVE STRATEGY	Current strategy	Significant focus is placed on customers
ii) In your opinion, which of the following strategies has your firm followed or implemented? a) Cost leadership, b) Differentiation, or c) Focus.		Defining strategy	The firm is applying a differentiation strategy by providing unique and high-value products and services to its customers
iii) What strategy do you suggest your firm follows?		Proposing a strategy	The firm needs to redesign/formulate its existing strategy

The first column in Table 4 presents the question posed to the interviewee, the second column indicates the model or concept the question relates to, the third column highlights the code, while the last column displays the themes identified. The results of each of the models or concept presented in Table 4 are discussed below.

SWOT model perspective

The four dimensions of the SWOT model were investigated, namely, strengths (S), weaknesses (W), opportunities (O), and threats (T). The majority of the interviewees claimed the same *strengths* of ALJ, which were combined into three themes. The first theme was labelled as having loyal associates.

> *Competency of employees, diverse workforce, global view, and a congenial corporate culture* (Participant 15).

ALJ's brand name was considered a second strength, supported by most of the interviewees.

> *Strong brand and 60 years' legacy. The focus on customer and employee. Being big and keeping agile* (Participant 25).

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The firm's values of respect, continuous improvement, pioneering and empowerment were other strengths identified by the interviewees.

> *Entrepreneurial mindset, trying new ideas even though it might be hard to implement, no resistance for change, adaptable, diversity of the workforce, international talents and professionalism* (Participant 14).

The interviewees identified various *weaknesses* within ALJ. For example, the bureaucracy in decision-making processes was recognised.

> *Honestly, ALJ is very slow in making decisions; maybe because of bureaucracy and autonomy, it is sometimes hard to make a decision, there is a long chain to take any decision, which sometimes slows down the entire business process* (Participant 31).

Poor communication and a lack of empowerment were identified as weaknesses within the company.

> *Communication follows a hierarchy; i.e. decisions take a long time to be made, it is a hindrance to the operation* (Participant 30).
>
> *The big size of ALJ slows the decision-making process; more empowerment should be given to the different layers of middle management* (Participant 24).

Another weakness identified by the interviewees was the unsatisfactory role played by the personnel department within the company.

> *The management of the HR, for example, we need to improve and change the way of recruiting talent, and then training and retaining the talent* (Participant 10).

The majority of responses indicated that potential *opportunities* for ALJ are provided by Saudi Vision 2030.

> *There are more opportunities than before due to Saudi Vision 2030's new regulations – most of the small competitors are already gone while the medium-sized are around somewhere* (Participant 29).

The use of digital technologies; and

> *Moving to a digital automotive era or any digital services relevant to the automotive sector* (Participant 27).

Expansion in the automotive sector, such as smart applications, was highlighted by Participant 25:

> *In general, ALJ should focus on new technology like autonomous driving. Many different opportunities are available in services; however, ALJ should be aware of when to enter this market.*

The external *threats* and challenges outlined by the participants included the regular changes in government rules and strict regulations, financial slowdown or economic recession, and dealing with youth unemployment.

PESTEL model perspective

This question covered the six perspectives of PESTEL, namely, political, economic, socio-cultural, technological, environmental and legal aspects.

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Political

In this perspective, some interviewees discounted any challenges that might emerge from the introduction of Saudi Vision 2030 affecting automotive firms, whereas others identified some such as 'Saudisation', which implies the consequences of the policy of replacing foreign workers in the private sector with Saudi nationals (Faudot, 2019). Reducing the number of expatriates has always been a priority for the KSA (Faudot, 2019; Violi, 2017:86).

> *Saudisation is the biggest political decree that is imposed by the government and needs to be achieved in such a short time; it severely affects every business especially in term of the time frame and training aspects* (Participant 19).

Most of the interviewees' averred that Saudi Vision 2030 does pose some challenges concerning increases in fuel and utility prices, taxes and other government fees.

Economic

In the economic perspective, the majority of the study population appeared confident about the position of ALJ despite the economic challenges identified.

> *I see Saudi Vision 2030 purely as positive with many opportunities. However, protectionism places the business in a weaker position* (Participant 14).
>
> *The economic challenges will drive out some businesses and bring in others, however those who will remain in the market will benefit. Adaptation is the cornerstone, so the challenge is about the reconstruction of the market share. However, opening the doors for international competitors will create a healthier competitive business environment* (Participant 24).

The majority of interviewees concurred that there is no significant economic challenge arising from Saudi Vision 2030.

Socio-cultural

The majority of participants perceived the socio-cultural perspective as involving a change rather than a challenge. The typical change is about granting females more freedom – specifically through providing employment opportunities and allowing them to drive. Participant 15 argued:

> *Women driving is only the first step. Historical and significant changes have occurred as women are now allowed to attend a football match and go to the cinema and also participate equally, if not more, as part of the workforce. Saudi Vision 2030 proves that change can happen drastically and dramatically.*

However, we conclude, from the majority of interviewees' responses, that the motor industry will benefit from employing females and allowing women to drive.

Technological

The technological perspective was not identified as a challenge specific to Saudi Vision 2030, but rather the result of the company operating in the automotive sector.

> *This is the biggest challenge for our firm. New businesses are shifting towards new technology across the world. Hence this is not a challenge posed by Saudi Vision 2030 but a global trend. Technology is upgrading rapidly. The competitive advantage has shifted from offering the best quality to offering the latest technology. However, we have*

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the foundation for adopting modern technology as we have implemented the SAP system (Participant 14).

It is important to note that the company has recently implemented the SAP Enterprise Resource Planning (ERP) system in its aim to upgrade its information technology to the required standards by following international trends.

Environmental

Most of the interviewees did not consider the environmental perspective a challenge or a concern, as opined by Participant 3.

Our organisation is a pioneer firm and eco-friendly in term of recycling used paper and workshop waste, besides introducing the hybrid car.

Nevertheless, this issue seems to rank as a low priority by government and society, most likely as a result of a lack of cultural awareness.

We have an environmental issue. Still, an eco-environmental infrastructure has not been maintained by the government so far. The government requires more initiatives to do so. However, the complete picture of the environmental context is not yet clear enough. It is a new concept for both culture and business. It is a part of transformation but not a priority at the moment (Participant 22).

Legal

The great majority of interviewees perceived the legal perspective as a part or component of the political perspective.

I see the legal and political aspects as one matrix, all in all, coming from the same source. Any new government law is a challenge for any business if the business is not sufficiently adaptable to ensure its sustainability. In the case of our business, it is difficult to judge now, but the business may need to sacrifice for some time (Participant 20).

Most of the interviewees did not consider the legal perspectives of Saudi Vision 2030 to be a challenge for ALJ.

The whole challenge is about meeting the requirements set by Saudi Vision 2030. ALJ seems to have the ability to cope with Saudi Vision 2030 (Participant 31).

BSC model perspective

The results of the question on which key performance indicators (KPIs) as used to assess the four BSC perspectives are summarised in Table 5.

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Table 5: BSC perspective KPIs

Financial performance	Customer value proposition
Gross and net profit Gross and net growth Market share Flash report*	Guest delight indicators surveys Net promoter score
Internal process effectiveness	**Learning and growth**
Business value realization (BVR) Kaizen** Hoshin Kanri***	Great place to work survey

* Samad, Shu and Ogar (2017) define a flash report as a financial outcomes summary that comprises several key figures.
** According to Hasan and Dutta (2017), *Kaizen* is a Japanese hybrid word. "*Kai*" means change and "*zen*" means good. *Kaizen* thus means a tool (application) of continual improvements.
*** *Hoshin kanri* is a systematic approach that can be applied to success in conditions of the most severe competition. The Toyota company in Japan has persistently applied the *hoshin kanri* management style for several decades, and as a result in 2007, they outstripped the giant General Motors Corporation to become the world's leading motor manufacturer (Hutchins, 2016).

In contrast to the three other BSC perspectives, the learning and growth perspective KPI is considered as lacking or ineffective:

> *No, we do not have such a tool. Even the survey of a great place to work does not seem that effective* (Participant 20).
> *I do not see any KPI; this is subjective because it is difficult to quantify this behaviour, to conclude we do not have a KPI* (Participant 8).

Some of the executives interviewed referred to the "Great place to work survey" as a KPI, while others doubted or denied that there is a KPI to measure learning and growth because employee behaviour is too subjective to assess.

Competitive strategy

During the last part of the interview, the participants were asked three questions relating to ALJ's competitive strategy.

> *Describe your firm's current strategy?*

Almost all the interviewees agreed that the company's current strategy places significant focus on the customer. This was confirmed by Participant 11, who asserted: "*Guest is the first strategy, focusing on the customer"* ("guest" – an internal reference to customer), and supported by

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Participant 12: *"The current strategy is guest first, gain customer's heart and mind."* Participant 14 splits the strategy into two aspects:

> *Earning loyalty. This strategy has two dimensions: Earn (how to create value before we capture value) – before we used to focus on buying loyalty by giving a discount but now creating a distinctive experience with emotional impact; and Loyalty – which is about changing the approach to building relationships with ALJ customers and understanding their needs*.

The second question aimed to determine which Porter generic strategy ALJ follows.

> *In your opinion, which of the following strategies out of Porter's generic strategies has your firm followed or implemented?*

Cost leadership (provides products or services at lower prices than offered by competitors).
Differentiation (provides unique and higher value products or services).
Focus (provides a unique and superior value to a specific customer).

The majority of the interviewees identified differentiation as one of ALJ's strategies.

> *For sure, the differentiation* (Participant 5).

However, a considerable number of the respondents also asserted that they considered that ALJ followed a mix of both the differentiation and focus strategies.

> *A synthesis of the differentiation and focus* (Participant 23).
> *The mix of differentiation and focus. The differentiation is the core, whereas the focus reflects our wide range of brands and models* (Participant 12).

Participant 14 had a particularly interesting view and argued the following:

> *We can force-fit these generic strategies, but they do not fit ALJ's strategy. From my point of view, mapping them into the business model would be difficult. These generic strategies are outdated, too simplistic and follows an academic approach.*

The last question on ALJ's competitive strategy asked participants to suggest a strategy for the company

> *What strategy do you suggest your firm should follow?*

Interestingly, several interviewees saw the value in this question. All came up with a variety of strategies and ideas, except for Participant 13, who averred: *"Nothing to be added"*. Most did not necessarily call for a change in the current strategy, but rather suggested adding some new aspects, such as expanding the focus on customers to employees and increasingly incorporating digital technologies in the workplace.

> *Really, this is a good question. I would add to our strategy the loyalty and engagement concept, especially in terms of employees and customers. This has to be the outline of each strategy. Yes, it is part of our strategy but needs more focus and enhancement.* (Participant 25).

Participant 16 suggested an increased shift towards incorporating digitalisation throughout the organisation.

ISBN NUMBER: 978-0-620-92690-4

> *Increasing the scope of digitalisation, open a new market, re-model current strategy and the way of work, i.e. considering the working-from-home concept. It is a strategy of incorporating change.*

Another executive proposed an adjustment to the current business model.

> *Shift its business model from retailer to wholesaler, in other words, empower the distributors* (Participant 5).

Although the interviews indicated that the company's current strategy places significant emphasis on customers, many of the respondents recommended an increased focus on the customer.

ANALYSIS AND DISCUSSION

Several looming challenges – both internal and external – in preparation for Saudi Vision 2030 were revealed in the interviews with senior staff. One of the main internal challenges includes dealing with the bureaucracy in decision making. This can be improved by, for example, minimising the layers of approval and by increasing the empowerment of middle management. According to Lawson and Samson (2001), empowerment is a core principle of an open and innovative culture. Successful firms invest in employees as assets and recognise that these personnel may have different visions from management for the future and seek to incorporate these views into their workplace. Another challenge identified was the inefficiency of internal communication. According to Henneberg, Naudé and Mouzas (2010), research has demonstrated that a focus on effective communication (vertically and horizontally) among employees would positively influence business fields characterised by radical innovation. Similarly, the BSC's learning and growth perspective requires considerable attention by the company. The role and responsibilities of HR are to ensure that successful, innovative, creative and talented employees are appointed based on merit so that nepotism and biased recruitment are avoided. This transparent approach would start with setting high standards for attracting new staff and empowering existing employees through building talent programs, fair reward systems, motivating moral and behavioural attitudes, and conducting effective training and educational programs.

In line with this finding is the weak role that HR was reported to play, in particular relating to recruiting, training and retaining talented staff. Maintaining a level of diversity is crucial. Jayne and Dipboye (2004) refer to the ranking of the 50 Top Companies by *Fortune* magazine, in which a common theme is a reference to embracing employees under the umbrella of diversity. The lack of measuring cultural, behavioural, teamwork and knowledge sharing in the company was also emphasised during the interviews.

The key external challenges include adjusting to the requirements proposed by Saudi Vision 2030, including strict government regulations that are regularly changing, and the threat of new competitors such as Korean and Chinese motor brands that can adversely impact ALJ's market share. In line with these identified challenges, Holtström, Bjellerup and Eriksson (2019) argue that the development of a robust business strategy requires a focus on the value proposition (products and services), the core employees and the customers.

ISBN NUMBER: 978-0-620-92690-4

CONCLUSIONS

We have assessed the competitive strategy of the largest automotive company in Saudi Arabia in preparation for Saudi Vision 2030, using a combination of four strategic models – SWOT, PESTEL, the BSC and Porter's generic strategies. This was done to address the problem of significant reforms mandated by Saudi Vision 2030 on private sector firms with specific reference to the largest Saudi Arabian motor company and biggest distributor of Toyota vehicles in the world. Private sector firms are seen as the engine of growth with the sector earmarked to considerably increase its contribution to GDP. We have presented the views of senior executives that ALJ has a robust and effective competitive strategy and is prepared for Saudi Vision 2030. In turn it was conveyed that ALJ provides unique and high-value products and services to its customers, which reflects Porter's "differentiation" strategy. It was reported that Saudi Arabian automotive firms face severe competition, fluctuations in customer preferences and demands, technological innovations, economic trends, and the demands of Saudi Vision 2030.

It is recommended that the company should frequently review its SWOT, PESTEL and BSC criteria using a dedicated team to continuously assess its competitive environment. The business should adjust its strategies and policies accordingly. The critical assessment of the state of its competition assists in 1) identifying future developments in technology, products and markets; 2) generating more sophisticated information systems; and 3) avoiding threats, seizing new opportunities and improving operational decision making. We furthermore recommend that the firm should continue its engagement with Saudi Vision 2030 and embrace it as a strategic priority going forward. The current requirements are to continue with recognising and valuing technology (information and knowledge) and employee performance. Saudi Vision 2030 requires extending the effort to be more proactive by moving towards being a competitive environmental leader. In light of the BSC perspective, the subject of this study is regarded as being in a competitive environment and as an excellent place to work. Yet, to sustain this position, the recognition of diversity is recommended. An assessment of communication efficiency and performance improvements are suggested – including an accountability policy to address communication efficiency. On the other hand, communication and collaboration among departments needs to be reinforced and upgraded. Certain rules and policies should be introduced to ensure fast and effective communication. Nevertheless, the company studied here needs to review its current strategy to re-formulate it. We believe that the strategic management of the business requires continuous concentration on i) decision making, and ii) more efficient communication.

This research was the study of only a single company which can be viewed as a limitation. As it is the biggest of its kind in Saudi Arabia, we consider that these findings can be regarded as valuable and widely applicable. Areas for further research include extending this research into another key private sector identified by Saudi Vision 2030.

This paper's novelty lies in the presentation of empirical results from the largest automotive company in one of the least understood economies in the world, by collecting data about the internal and external environment of the business in preparation for Saudi Vision 2030, using a combination of several strategic models.

ISBN NUMBER: 978-0-620-92690-4

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

CENTRAL REGION

Determining Audit Fees in South Africa's Public Sector

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ABSTRACT

This study focuses on the market for audit services in South Africa's public sector, relating to the outsourcing of public sector audits and, specifically, the existence, if any, of an audit fee premium in the public sector. This study tests the hypothesis that audit prices for the Auditor General (SA) are higher than those audit firms that have the right to audit public sector auditees; by comparing audit fees between the Auditor General (SA) and private-sector auditors. Private sector audit firms are subject to a rigorous "tender" process to win the right to audit public sector auditees. The Auditor General (SA) is not part of the tender process. This results in competition between private sector audit firms resulting in lower audit fees. The Auditor General (SA) is not subject to any audit fee pressures and can charge an audit fee premium compared to a private sector auditor. The regression statistics also revealed that political risk is a significant variable that a public sector auditor must consider when performing an audit; the financial reporting framework applied by an auditee has a significant impact on audit fees; prior years audit fee has a significant impact on current years audit fee; audit risk and size of the auditee have an impact on current years audit fee; irregular expenses have no significant impact on audit fee; and as audit fees increase auditor independence.

KEYWORDS: Audit fees; political risk; public sector; regression analysis

The research described in this paper contains several opinions of the author. The author is an expert in the fields of auditing and financial reporting. Such a research methodology is supported by the research conducted by Sandra Iriste and Irena Katane (2018).

Sandra Iriste and Irena Katane (2018) posit the view that:

"The expert method is widely applied not only in social sciences and psychology but also in education science. It is considered to be one of the most appropriate for collecting, analysing and evaluating information, as well as forecasting, when it is necessary to make responsible decisions in relation to innovations in education, including pedagogical process".

INTRODUCTION

Since the abolition of apartheid in 1994, South Africa has adopted a new public management model which emphasises public accountability and best organisational practice. This "adoption" has resulted in the move to a more competitive public sector. In this context, South Africa permits private sector auditors to "tender" for the right to audit public sector entities. There are two significant contributions to the literature that impact the research as described in this paper. First, Chong et al. (2009) examined the outsourcing of public-sector audits for a sample of 178 public agencies in Western Australia. In their sample, the quality of an outsourced audit is like that of the government auditor because the final audit report bears the signature of the government auditor, regardless of the private sector auditor. Thus, private sector auditors have limited incentives to deliver a level of audit quality above the required minimum acceptable. Therefore, Chong et al. (2009) do not find a private sector audit fee premium. Second, Bradbury (2014) examined the outsourcing of public-sector audits for a sample of 327 public sector trading entities in New Zealand. In their study, the government auditor and the private sector auditor were the subject of a tender process and where such a process ensured that audit fees were competitively determined. As in Chong et al. (2009), Bradbury (2014) found no audit fee premium.

This study differs from Chong et al. (2009) and Bradbury (2014) in the context of the institutional environment, where although South Africa has similar outsourcing engagement to public agencies in Western Australia; South Africa permits private sector auditors to "tender" for the right to audit public sector entities, which differs from (Bradbury, 2014). The Auditor General (SA) is not part of the tender process.

This study focuses on the market for audit services in South Africa's public sector, relating to the outsourcing of public sector audits and, specifically, the existence, if any, of an audit fee premium in the public sector. This study tests the hypothesis that audit prices for the Auditor General (SA) are higher than those audit firms that have the right to audit public sector auditees; by comparing audit fees between the Auditor General (SA) and private-sector auditors. The reasons for such a hypothesis can be found in the competition between private sector audit firms resulting in lower audit fees, leaving the Auditor General (SA) to change what they want.

The study contributes to the literature in several ways: this paper broadens previous research into the market for audit services by providing an empirical analysis of the external audit fee in South Africa's public sector, an emerging economy, where there has been no study on public sector audit fees.

Understanding the similarities and differences between the various determinants of the external audit fee in South Africa's public sector and other nations improves understanding the demand for audit services in the public sector. Most prior audit fee research in the public sector has been conducted on municipalities in North America (Lowensohn et al., 2007; Thorne et al., 2001), U.S. school districts (Donald R. Deis and Gary A. Giroux, 1992; Roberts et al., 1990), national health services in England and Wales (Clatworthy et al., 2000, 2008) and public agencies in Australia (Chong et al., 2009). This study uses public sector entities (National Government of South Africa) as its population. These sector entities have many similarities to large private sector entities. They include "for-profit" entities in the public sector.

ISBN NUMBER: 978-0-620-92690-4

The results show that the audit fee premium using the traditional fixed-effect in favour of the Auditor General (SA); political risk is a significant variable that a public sector auditor must consider when performing an audit; the financial reporting framework applied by an auditee has a significant impact on audit fees; prior years audit fee has a significant impact on current years audit fee; audit risk and size of the auditee have an impact on current years audit fee; irregular expenses have no significant impact on audit fee; and as audit fees increase auditor independence worsens.

The next section describes the institutional background and develops the hypotheses. The previous section is followed by sections that describe the model specification, the sample, descriptive statistics and results. The last section is a conclusion.

INSTITUTIONAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Institutional background

In terms of Section 4(3)(a) and (b) of the Public Audit Act 24 of 2005 (PAA), the Auditor General (SA) may audit and report on the accounts, financial statements and financial management of any public entity listed in the Public Finance Management Act 1 of 1999. This discretion is clarified in In terms of Section 25(1)(a) of the PAA, the Auditor General (SA) may opt not to perform the audit of an auditee, under Section 4(3) of the PAA. If the AGSA has opted not to perform the audit, the auditee appoints an audit firm registered with the IRBA to perform the audit (Independent Regulatory Board for Auditors, 2015). The appointed audit firm performs its functions as an auditor in terms of the Auditing Profession Act 26 of 2005 (APA) and the PAA. To comply with Section 217 of the Constitution of 1996, which requires that all procurement should be done in a manner that is fair, equitable, transparent, competitive and cost-effective, the Auditor General (SA) should allocate work to private audit firms or specialised audit services companies through a formal tender process.

Hypothesis development

Significant changes in the auditing environment worldwide have, in recent years, led to important changes in the behaviour of market participants. The main environmental changes have been the worldwide recession, dating from approximately 1989, which led to overcapacity on the market's supply side. These changing competitive pressures resulted in aggressive fee renegotiation and competitive tendering of audit services by companies (Beattie & Fearnley, 1998). Moizer (1997) specifically identifies tendering as a means by which independence is threatened: "the use of the tender process will enable the management to claim that the auditor was replaced because a cheaper one was found and not for any reasons of dispute between the company and the audit firm". Beattie and Fearnley (1998) conducted a content analysis of semi-structured interviews conducted with the finance directors of 12 U.K. listed companies that had recently tendered and/or changed auditors to investigate the tender/change process.

Contrary to popular belief, fee levels do not necessarily dominate the decision to change auditors, rather changes within the auditee company, audit staffing, and auditor's professionalism and competency issues dominate. Nor is the selection of a tender winner generally based solely on price, as predicted by tender theory and as would be expected when the consequences of audit failure do

ISBN NUMBER: 978-0-620-92690-4

not fall on the directors Beattie and Fearnley (1998). However, consistent with economic theory, the winning bid appears frequently to be too low, resulting in attempts by auditors to subsequently increase fees and resentment by the finance director. Directors generally appear to view the audit tender as relating to not only the assurance function per se but to a larger package of services concerning the financial reporting function. The relative importance of price versus non-price competition in auditor choice is found to vary across companies. Auditor choice is influenced strongly by economic and behavioural factors, particularly by directors' assessment of the quality of non-attest services and the expected quality of working relationships, in addition to price and audit quality. It is noted that the tendering process may have a severe impact on the reduction of audit fees as in line with the research conducted by Beattie and Fearnley (1998), where the incumbent auditor is usually reappointed at a significantly lower fee after the tender process. Hence, in this institutional setting, there is an Auditor General (SA) audit fee premium.

MODEL SPECIFICATION

Single-stage estimation of the large audit firm premium

Most prior research that examines the large audit firm premium employs the following fixed effect model (Bradbury, 2014):

$$\boldsymbol{Equation\ 1}: \boldsymbol{LAF_i = \beta_0 + \beta_1 X_i + \beta_2 Y_i + \beta_3 AUD_i + \varepsilon}$$

Equation 1 is used to test the hypothesis that different-sized audit firms $\boldsymbol{AUD_i}$ charge different audit fees. $\boldsymbol{LAF_i}$ is the natural log of the audit fee for firm *i*. The $\boldsymbol{X_1}$ and $\boldsymbol{Y_i}$ variables represent determinants of audit fees (other than auditor size). In a typical study, $\boldsymbol{AUD_i}$ is captured using an indicator variable equal to 1 if the auditor is the Auditor General (SA) and zero otherwise. Studies finding a positive statistically significant coefficient on $\boldsymbol{AUD_i}$ (Firer & Swartz, 2006; Firth, 1985; Simon et al., 1992; Waresul Karim & Moizer, 1996) conclude that there is a large audit firm fee premium.

The audit fee model developed can be summarised as:

$$\boldsymbol{Equation\ 2}: \boldsymbol{LAFCY_{i,t}} = \boldsymbol{\beta_0 + \beta_1 YRS_{i,t} + \beta_2 IND_{i,t} + \beta_3 PLR_{i,t} + \beta_4 AUD_{i,t} + \beta_5 LAFPY_{i,t} + \beta_6 STR_{i,t} + \beta_7 SIZ_{i,t} + \beta_8 IRR_{i,t} + \beta_9 LTR_{i,t} + \beta_{10} INDE_{i,t} + \beta_{11} FRM_{it} + \epsilon}$$

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Table 1: Definition of variables

LAFCY	Current year's audit fee	Natural log of current year's audit fees
1. YRS	Years	A series of 10-year indicator variables: 2010-2019
2. IND	Industry	A series of four industry indicator variables: Central Government Administration; Economic Services & Infrastructure Development; Social Services; and Financial & Administration Services
3. PLR	Political risk	1 if the entity has been in the press and 0 otherwise
4. AUD	Auditor	1 is Auditor General (SA) and 0 otherwise
5. LAFPY	Last year's audit fee	Natural log of last years audit fees
6. STR	Short term risk	Current assets divided by current liabilities
7. SIZ	Auditee size	Natural log of total assets
8. IRR	Irregular expenses	Natural log of irregular expenses
9. LTR	Long term risk	Total debt divided by total asset
10. INDE	Auditor independence	Abnormal audit fees (1 for overpayment and 0 for underpayment)
11. FRM	Accounting framework	1 if an entity applies IFRS and 0 if applies GRAP

Discussion of independent explanatory variables

Political risk

The "idea" supporting the politically exposed auditee as proxy stems from the notion that most public sector auditees directly impact citizens' lives through the services and infrastructure they provide (Auditor-General of South Africa, 2017). At a general level, an auditee that is politically visible (or politically sensitive or exposed) may be described as one which attracts a disproportionate share of scrutiny by politicians, organised groups such as trade unions, and the general public (Lim & McKinnon, 1993). A factor that has been identified in the private sector literature as influencing accounting policy choice and voluntary disclosure practices, but which has been relatively unexamined in public sector research, is an entity's political visibility (Sutton, 1988). A politically exposed auditee will attract increased attention from a public sector auditor and, as a result, higher audit fees (Dolley & Chong, 2011). Thus, there should be a positive relationship between public sector audit fees and politically exposed auditees. Based on the above criteria and a clinical diagnosis of those public sector auditees who can transfer instantaneous wealth from the electorate, I have selected the politically exposed auditees: Denel; Eskom Holdings; Independent Regulatory Board For Auditors; NECSA; Passenger Rail Agency South Africa; SA POST OFFICE; South African Broadcasting Corporation; and Transnet. An indicator variable measures politically exposed auditees as equals 1 and 0 otherwise.

H_1: There is a significant positive relationship between politically sensitive auditees and public sector audit fees.

Auditor

This study tests the hypothesis that audit prices for the Auditor General (SA) are higher than those audit firms that have the right to audit public sector auditees; by comparing audit fees between the Auditor General (SA) and private-sector auditors. Private sector audit firms are subject to a rigorous "tender" process to win the right to audit public sector auditees. The Auditor General (SA) is not part of the tender process. This results in competition between private sector audit firms resulting in lower

ISBN NUMBER: 978-0-620-92690-4

audit fees. The Auditor General (SA) is not subject to any audit fee pressures and can charge an audit fee premium compared to a private sector auditor. An indicator variable measures 1 if the auditor is Auditor General (SA) and 0 otherwise. There should be a positive relationship between Auditor General (SA) and audit fees.

H_2: There is a significant positive relationship between the Auditor General (SA) and public sector audit fees.

Last year's audit fee

This paper tests the hypothesis that the audit fee paid by auditees in the current year is significantly associated with the level of audit fees in the previous year. This hypothesis appears prima facie to be self-evident, resulting in almost no research on the matter; however, in the audit process, last year's audit fee is crucial component of setting next year's audit fee.[1]

H_3There is a significant positive relationship between last year's audit fee and the current years' public sector audit fees.

Short term risk

Loans received by the major public sector auditees are received by way of a South African government guarantee instead of cash.[2] The public sector auditee would then raise a loan on the "back" of the guarantee from a private-sector financial institution).[3] If the public sector auditee fails to repay the loan, the government of South Africa will then repay the loan due to the guarantee.[4] Because the public sector provides long-term loans to a public sector auditee, it can be argued that they carry no inherent risk, as reflected in long term leverage or solvency ratio (Clatworthy et al., 2000, 2008).

Consequently, the current ratio has been used as an alternative measure to proxy public sector auditee risk since these concentrates on amounts owed to creditors outside the public sector (Clatworthy et al., 2002). The riskier the auditee's operations, the greater is the risk of audit failure, and hence the greater audit effort is required wih will mitigate audit risk (Chan et al., 1993). Thus, there should be a negative relationship between public sector audit fees and public sector auditee risk.

H_4: There is a significant negative relationship between short term audit risk and public sector audit fees.

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1 This is the opinion of the author.

2 The author of this paper was the engagement quality control partner non the South African Airways, SA Post Office an SA Express audits for 5 years. These comments are made from ethnographical research while on the three different audits.

3 The author of this paper was the engagement quality control partner non the South Afrian Airways, SA Post Office an SA Express audits for 5 years. These comments are made from ethnographical research while on the three different audits.

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Auditee size

The most consistent result in all previous research has been that auditee size is the most significant explanatory variable in determining audit fees (Firth, 1985; Joshi & AL-Bastaki, 2000; Langendijk, 1997; Simon, 1995; Waresul Karim & Moizer, 1996). These researchers provide consistent evidence that auditors of large-sized entities have to spend a lot of time reviewing their auditees operations and performing detailed audit procedures. Simon (1995) provides evidence that total assets best represent the size.

H_5: There is a significant positive relationship between auditee size and public sector audit fees.

Irregular expenses

Irregular expenditures were not incurred in the manner prescribed by the legislation; in other words, somewhere in the process that led to the expenditure, the auditee did not comply with the applicable legislation (National Treasury, 2017). Such expenditure does not necessarily mean that money had been wasted or that fraud had been committed. It is an indicator of non-compliance in the process that needs to be investigated by management to determine whether it was an unintended error, negligence or done to work against legislation requirements (National Treasury, 2017). Irregular expenditure requires greater audit effort due to the additional statutory requirements attached to such expenditure.

H_6: There is a significant positive relationship between the magnitude of irregular expenditure and public sector audit fees.

Long term risk

The total liabilities to total assets ratio has been included in catering to the alternative explanation that the public sector auditee has to repay the loan, and non-repayment can result in potential reputational loss and additional audit effort due to verify the loans (Chan et al., 1993). Thus, there should be a positive relationship between public sector audit fees and public sector auditee leverage.

H_7: There is a significant positive relationship between long term audit risk and public sector audit fees.

Auditor independence

Most previous studies on the association between auditor independence and auditor fees focus on the effect of non-audit service (NAS) fees on auditors' incentives to compromise auditor independence. As a result, they pay relatively little attention to the effect of auditor independence on audit fees. Excessively high audit fees can create similar incentives for auditors to compromise auditor independence concerning a specific client (Choi et al., 2010). Given the scarcity of empirical evidence on the issue, this paper aims to provide systematic evidence on whether (abnormal) audit fees as proxy auditor independence are associated with the magnitude of current years audit fees.

Actual fees paid to auditors consist of two parts, that is (1) normal fees that reflect auditors' efforts costs and litigation risk; and (2) abnormal fees that are specific to contractual relationships between auditors and their clients (Choi et al., 2010). While normal fees are determined by common factors across different clients such as client size, client complexity, and client-specific risk, abnormal fees are determined by factors that are idiosyncratic to a specific client (Choi et al., 2010). As noted by

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Kinney and R. Libby (2002), abnormal fees "may more accurately be likened by attempted bribes" and capture the profitability of auditor-provided services. Positive abnormal fees, namely actual fees over normal fees, are likely to create economic bonding of the auditor to the client, while negative abnormal fees are unlikely to do so (Choi et al., 2010).

To decompose actual audit fees into two components, namely the expected component, called normal audit fees, and the unexpected component, which is abnormal audit fees (a proxy for auditor independence), there is a need to specify an expectation model linking actual fees with their determinants.

H_8: There is a significant positive relationship between political risk and public sector audit fees.

This study adapted prior studies (for example, Choi et al. (2010)) and uses the following model to estimate the normal (expected) level of audit fees based on a set of observable determinants, where the independent variable is the natural logarithm of total audit fees (LAFCY), as follows:

$$\boldsymbol{Equation\ 3}: \boldsymbol{LAFCY_{i,t}} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1 YRS_{i,t}} + \boldsymbol{\beta_2 IND_{i,t}} + \boldsymbol{\beta_3 PLR_{i,t}} + \boldsymbol{\beta_4 AUD_{i,t}} + \boldsymbol{\beta_5 LAFPY_{i,t}} + \boldsymbol{\beta_6 STR_{i,t}} + \boldsymbol{\beta_7 SIZ_{i,t}} + \boldsymbol{\beta_8 IRR_{i,t}} + \boldsymbol{\beta_9 LTR_{i,t}} + \boldsymbol{\beta_{10} FRM_{it}} + \boldsymbol{\epsilon}$$

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Table 2: Example for 2019 calculation of under or overpayment of audit fees

Abnormal audit fees are measured from the residuals from Equation 2.

ESKOM Variables	Unstandardized Coefficients B	2019 Actual	2019 Expected
(Constant)	1,620	1	1,62
FY11	-,026	0	0,00
FY12	,021	0	0,00
FY13	,055	0	0,00
FY14	,080	0	0,00
FY15	,114	0	0,00
FY16	,129	0	0,00
FY17	,120	0	0,00
FY18	,083	0	0,00
FY19	,141	1	0,14
Political risk	,473	1	0,47
Auditor	,185	0	0,00
Framework	,117	1	0,12
CGA	,321	0	0,00
FAS	,108	1	0,11
SS	,148	0	0,00
LAFPY	,463	10,07	4,66
STR	-,040	0,76	-0,03
SIZE	,168	17,98	3,02
Irregular	,002	12,17	0,03
LTR	,194	0,80	0,15
LN EXPECTED			10,29
R EXPONENT			29 430
ACTUAL			60 000
OVERPAYMENT			30 570
INDICATOR			1

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Table 3: Over or underpayments of audit fees converted to the indicator variable

Company	Year	Expected	Actual	Difference	Over/under
Air Traffic & Navigation Services	2019	3 374	2 677	-697	0
Airports Company	2019	12 973	7 147	-5 826	0
Alexkor	2019	2 335	724	-1 611	0
Amatola Water Board	2019	3 002	449	-2 553	0
Bloem Water Board	2019	2 829	1 529	-1 300	0
Broadband Infraco	2019	1 969	1 217	-752	0
Cef	2019	10 638	8 314	-2 324	0
Commission For Conciliation	2019	2 837	1 876	-961	0
Competition Commission	2019	1 824	1 173	-651	0
Cross-Border Road Transport Agency	2019	2 238	3 138	900	1
Denel	2019	12 371	15 000	2 629	1
Development Bank Southern Africa	2019	9 712	8 142	-1 570	0
Eskom Holdings	2019	29 430	60 000	30 570	1
Financial Sector Conduct Authority	2019	1 613	1 809	196	1
Independent Development Trust	2019	8 580	6 711	-1 869	0
Independent Regulatory Board For Auditors	2019	2 363	953	-1 410	0
Land & Agricultural Development Bank	2019	17 775	8 884	-8 891	0
Legal Aid South Africa	2019	3 436	2 623	-813	0
National Housing Finance Corporation	2019	2 707	2 504	-203	0
NECSA	2019	13 188	11 563	-1 625	0
Onderstepoort Biological Products	2019	1 653	1 872	219	1
Passenger Rail Agency South Africa	2019	27 450	25 580	-1 870	0
Petroleum Oil & Gas Corporation	2019	10 326	5 643	-4 683	0
Public Investment Corporation	2019	3 260	2 436	-824	0
Rand Water	2019	5 516	1 850	-3 666	0
SA POST OFFICE	2019	24 002	11 761	-12 241	0
SANRAL	2019	17 946	38 684	20 738	1
SEDA	2019	2 364	3 869	1 505	1
Sedibeng Water	2019	5 842	855	-4 987	0
Sentech	2019	2 598	2 635	37	1
South African Broadcasting Corporation	2019	20 617	11 473	-9 144	0
South African Civil Aviation Authority	2019	2 269	2 034	-235	0
South African Forestry Company	2019	4 713	1 905	-2 808	0
South African National Parks	2019	5 631	5 643	12	1

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South African Qualifications Authority	2019	2 152	1 778	-374	0
South African Revenue Service	2019	17 837	13 812	-4 025	0
Transnet	2019	25 854	62 000	36 146	1
Umgeni Water	2019	3 897	1 449	-2 448	0

Accounting framework

Directive 12 on the "Selection of an Appropriate Reporting Framework by Public Entities" issued by the Accounting Standards Board paragraph 5 states, "An entity shall apply IFRSs as its reporting framework if it meets the criteria in paragraph 11; otherwise, it shall apply Standards of GRAP". Paragraph 11 states, "In assessing whether an entity shall apply IFRSs, it considers whether it meets one of the following criteria: (a) the entity is a financial institution; (b) the entity has ordinary shares or potential ordinary shares that are publicly traded on capital markets; or (c) its operations are such that they are: (i) commercial in nature; and (ii) only an insignificant portion of the entity's funding is acquired through government grants or other forms of financial assistance from the government. This study tests whether a public sector's choice of accounting framework has a significant impact on public sector audit fees. The literature shows that the application of IFRS has a significant positive relationship with audit fees (Loukil, 2016; William Coffie & Ibrahim Bedi, 2019).

H_9: There is a significant positive relationship between IFRS and public sector audit fees.

Table 4: Pubic entities choice of accounting framework

1 if an entity applies IFRS and 0 if applies GRAP.

Company	Year	Framework
Air Traffic & Navigation Services	2010	1
Airports Company	2010	1
Alexkor	2010	1
Amatola Water Board	2010	0
Bloem Water Board	2010	0
Broadband Infraco	2010	1
Cef	2010	1
Commission For Conciliation	2010	0
Competition Commission	2010	0
Cross-Border Road Transport Agency	2010	0
Denel	2010	0
Development Bank Southern Africa	2010	0
Eskom Holdings	2010	1
Financial Sector Conduct Authority	2010	0
Independent Development Trust	2010	1
Independent Regulatory Board For Auditors	2010	0
Land & Agricultural Development Bank	2010	1
Legal Aid South Africa	2010	0
National Housing Finance Corporation	2010	0

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NECSA	2010	1
Onderstepoort Biological Products	2010	0
Passenger Rail Agency South Africa	2010	0
Petroleum Oil & Gas Corporation	2010	1
Public Investment Corporation	2010	1
Rand Water	2010	1
SA POST OFFICE	2010	1
SANRAL	2010	1
SEDA	2010	0
Sedibeng Water	2010	0
Sentech	2010	1
South African Broadcasting Corporation	2010	1
South African Civil Aviation Authority	2010	0
South African Forestry Company	2010	1
South African National Parks	2010	0
South African Qualifications Authority	2010	0
South African Revenue Service	2010	0
Transnet	2010	1
Umgeni Water	2010	0

SAMPLE AND DESCRIPTIVE STATISTICS

Sample

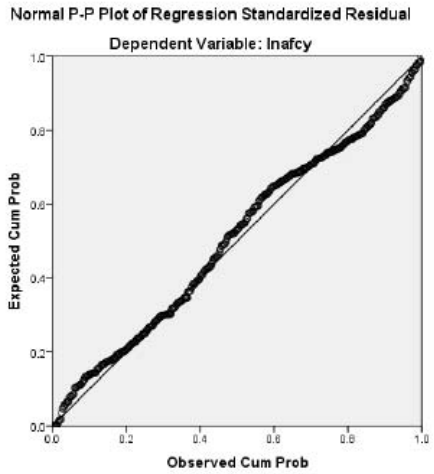
According to the IRESS Database, there are 117 government-owned or controlled entities. The data was collected from those public sector entities listed by National Government on https://nationalgovernment.co.za/units/type/6/public-entity. Only those entities that displayed the necessary variables needed to complete the research were selected for testing. In addition to avoiding any time series issues, only those public sector auditees that had all the necessary data for a straight 10 years were chosen. This resulted in 38 entities and 380 observations for the period 2010 – 2019. The final sample variables were deemed necessary to comply with the normality requirements of linear regression were all winsorised at the 10% level.[5]

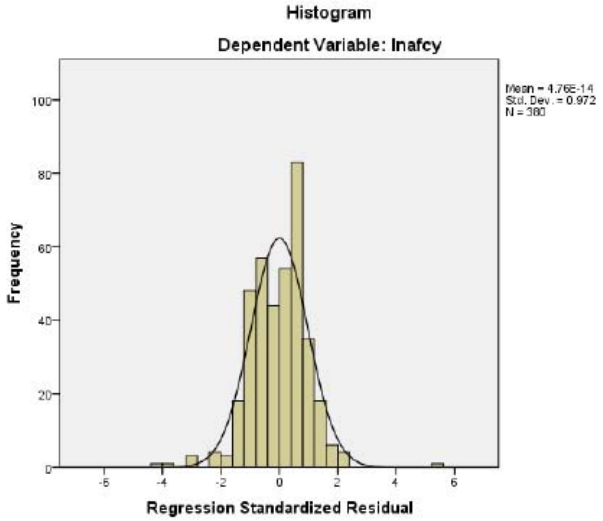
5 This was confirmed as sufficient by Professor Arian Saville of the Gordon Institute of Business Science.

ISBN NUMBER: 978-0-620-92690-4

RESULTS

Figure 1: Normality plots





Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.970	,942	,938	,24984431	1,680

Anova

	Sum of Squares	df	Mean Square	F	Sig.
Regression	360,706	21	17,176	275,167	.000
Residual	22,347	358	,062		
Total	383,054	379			

It can be seen from the Model Summary that the multiple R was estimated at 97%. There is also an adjusted R Square value reported, which corresponded to 93.8%. The adjusted R Square represents a more accurate estimate of the effect on the population. Thus, from this more accurate perspective, 93.8% of the variance in public sector audit fees would be expected to be accounted for in the population by the multiple regression equation. It can be observed that the multiple R-values of 97% was associated with an F-value of 275,16. The F-value was statistically significant, $P < 0.001$.

ISBN NUMBER: 978-0-620-92690-4

Table 5: Single-stage audit fee OLS regressions results (including abnormal audit fees as an indicator variable)

	Unstandardized Coefficients			Collinearity Statistics	
	B	t	Sig.	Tolerance	VIF
(Constant)	1,542	9,831	,000		
FY11	-,048	-,824	,411	,546	1,832
FY12	,066	1,121	,263	,533	1,877
FY13	,073	1,234	,218	,524	1,908
FY14	,071	1,204	,229	,519	1,927
FY15	,157	2,655	,008	,520	1,923
FY16	,131	2,195	,029	,511	1,955
FY17	,174	2,880	,004	,499	2,003
FY18	,105	1,699	,090	,478	2,094
FY19	,161	2,598	,010	,473	2,112
Political risk	,620	15,954	,000	,603	1,659
Auditor type	,181	5,580	,000	,860	1,163
Accounting framework	,112	3,497	,001	,652	1,533
Central Government Adm	,499	5,719	,000	,842	1,188
Financial & Administratio	,159	5,044	,000	,806	1,241
Social Services	,135	2,098	,037	,796	1,257
Audit feee prior year	,354	16,781	,000	,355	2,814
Short term risk	-,047	-5,365	,000	,635	1,574
Auditee size	,210	21,108	,000	,403	2,481
Irregular expenses	,003	1,087	,278	,701	1,426
Long term risk	,223	3,745	,000	,715	1,399
Abnormal audit fee	,619	23,016	,000	,915	1,093

The red highlighted represents a significant relationship with public sector audit fees. There are 11 independent variables and 380 observations which is sufficient to interpret the regression statistics.

The results of the regression analysis are summarised in Table 5. The size variable is a significant determination of audit fees in all the regression models. This finding indicates that auditee size is an important determinant of audit fees since larger clients will require more audit effort. The regression analysis revealed a statistically significant positive relationship between the Auditor General (SA) and audit fees. Private sector audit firms are subject to a rigorous "tender" process to win the right to audit public sector auditees. The Auditor General (SA) is not part of the tender process. This results in competition between private sector audit firms resulting in lower audit fees. The Auditor General (SA) is not subject to any audit fee pressures and can charge an audit fee premium compared to a private sector auditor.

In the same ""vein"", the statistics show that a greater audit effort is needed to audit IFRS than it is to audit GRAP. Not surprisingly, last year's audit fee had a significant positive impact o the current years audit fee.

As predicted, political risk has a significant positive impact on audit fees, meaning these types of entities require special attention from the auditor. Also, irregular expenses have no impact on audit fees as the audit of such expenses is required law and cost into the audit price.

ISBN NUMBER: 978-0-620-92690-4

LIMITATIONS OF RESEARCH

Perhaps the most serious problem with studies of accounting fees is the data itself. Across auditors and even within the same firm, billing practices may differ. As a result, how to interpret fee analysis is open to debate. In fact, since the real concerns behind the controversies surrounding auditor competition focus on the tension between performance and profitability, many question whether any inferences should be drawn from fee research at all. Without access to data on auditors' costs and realisation rates, the researcher's ability to provide insights into these concerns may indeed be limited.

CONCLUSION

The study develops and estimates, for the first time, a model of public sector audit fees in South Africa. Concerning South Africa's outsourcing of public sector audits to the private sector, the institutional framework appears to be unique. The Auditor-General is not obliged to audit a public sector auditee and may outsource any audit the Auditor General (SA) decides not to perform to any other auditor. There appears to be a perception of competitiveness in the compulsory tendering process that the private sector auditors have to contend with; however, the main actor, the Auditor General (SA), is not subject to the tender process. It is not surprising that the statistical results reveal that the Auditor General (SA) is rewarded with a statistically significant audit fee premium. The economic literature on auctions and tenders predicts that introducing bidding competition can result in a large decrease in audit fees for those involved in such a process. This impacts audit quality as it relates to the private sector audit firms permitted to audit public sector auditees. The mindset of those responsible for the appointment of auditors should be on maximising quality rather than minimising costs (Thandokuhle Myoli, 2020). This unquestionably is not what was intended by Section 27 of the Constitution of 1996, which requires that all procurement by organs of state be done in a fair, equitable, transparent, competitive, and cost-effective manner.

A politically exposed public entity has been entrusted with prominent public functions and has failed in its mandate. Such entities as Denel, Eskom Holdings; Independent Regulatory Board For Auditors; Nuclear Energy Corporation; Passenger Rail Agency South Africa; S.A. Post Office; South African Broadcasting Corporation; and Transnet have become synonymous with the corrupt activities of "state capture". These public entities will attract higher audit fees due to a greater audit effort.

The predictive public sector audit fee model appears to provide sound predictive processes for an appropriate audit fee. The model could provide a benchmark for public sector audit fees set. It may not be devoid of subjectivity, but it can provide specific variables to consider in determining audit fees.

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

CENTRAL REGION

Integrated Reporting Disclosure by South African Banks relating to Digital Disruption and Cybersecurity

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ABSTRACT

The 21st century has pushed society into the fourth industrial revolution. In a South African context, banks are responding to technological change by investing in digital transformation (PwC 2017). EY's Excellence in Integrated Reporting Awards survey identified Digital Disruption and Cybersecurity themes, including how businesses have adapted their strategies to these factors, as a critical priority for companies to improve their integrated reports (EY 2018). This paper uses the 2018 EY survey as a catalyst to form the research question that addresses the extent to which South African banks who participated in EY's survey are disclosing, in their integrated reports, the themes of Digital Disruption and Cybersecurity. The paper uses a qualitative content analysis method to assess the extent of disclosure on the Digital Disruption and Cybersecurity in the 2017 integrated reports of the sample banks and subsequent changes in their 2018 reports. A paired T-test was conducted to assess any significant changes in the disclosure of these themes from 2017 to 2018. The findings conclude that banks are reporting on Digital Disruption. However, reporting on Cybersecurity remains low. This paper will add to academic literature around integrated reporting as it analyses integrated reports produced by South African banks. The findings will also contribute to how banks report on Digital Disruption and Cybersecurity and changes in the reporting on these themes in an industry that is experiencing significant changes due to Digital Disruption.

INTRODUCTION

The banking landscape in South Africa is changing rapidly. Former First National Bank (FNB) CEO has noted that "*Banking as we know it will change more in the next decade than it did in the last century*" (Jooste, 2019:1). New entrants characterise this reality into the traditional banking space historically dominated by FNB, ABSA, Nedbank and Standard Bank (Dicey 2019). These entrants show rapid growth in their consumer base without high start-up expenditure such as advertising costs, and use online platforms for advertising, illustrating technology in the banking industry.

On a larger scale, the business landscape has also experienced rapid change with a shift in focus from the traditional financial bottom line. This shift results from stakeholders increasing their expectation for organisations to pursue corporate sustainability by pursuing societal, environmental and financial issues together instead of pursuing financial stability alone (King 2018). Integrated reporting (IR) has emerged as a mechanism for reporting on this broader focus IR (The International Integrated Reporting Council (IIRC), 2013).

Implementation issues and a lack of leading practice examples overshadow the growing interest in IR adoption. This has resulted in a growing academic debate around IR. However, with the adoption of IR practices increasing, it is opportune to analyse the currently produced integrated reports (Rinaldi, Unerman & de Villiers, 2018).

EY's *Excellence in Integrated Reporting Awards* survey (EY's survey) identified key priorities for companies to improve their integrated reports over the following year. Reporting on Digital Disruption and Cybersecurity, including how businesses adapted their strategies to these factors, was one of the top three key priorities identified in 2018 (EY, 2018).

Furthermore, according to PwC's Global CEO survey, technological change is the biggest concern to CEOs across all business sectors. 70% of CEOs in financial services cited the speed of technological change as a concern (PwC, 2016). In a South African context, banks are responding to Digital Disruption by investing in digital transformation. Their response includes strategies to improve risk management and operational trends, including implementing emerging technologies and cybersecurity resilience (PwC, 2017).

This research paper uses the concern raised by EY around reporting on Digital Disruption and Cybersecurity as a starting point to analyse the disclosure on these themes in a company's integrated report. The South African banking sector was used as the sample sector in this paper because it has been significantly impacted by Digital Disruption. Consequently, this paper will examine a sample of integrated reports produced by South African banks participating in the survey to assess the extent of reporting on Digital Disruption and Cybersecurity. Therefore, this paper explores the following research question: to what extent do South African banks who participated in EY's 2018 IR survey disclose Digital Disruption and Cybersecurity in their integrated reports?

The methodology used was a qualitative content analysis on the 2017 and 2018 integrated reports of the banks that participated in EY's 2018 survey. A change was found in disclosure

ISBN NUMBER: 978-0-620-92690-4

across all categories by all banks in the sample from 2017 to 2018. According to the paired T-test results, the reporting on two categories within the Digital Disruption theme increased significantly. The findings also reveal a correlation between each company's financial year-ends, the survey's ranking of the report, and their performance against the checklist. It concludes that banks are reporting on Digital Disruption. However, the reporting on Cybersecurity remains low.

The remainder of this paper is set out as follows: The literature review evaluates past literature on IR, the importance of Digital Disruption and Cybersecurity in the context of the fourth industrial revolution and the impact of Digital Disruption on the banking industry. The literature review is followed by the methodology and results, including discussing the findings and concluding remarks and future research areas.

LITERATURE REVIEW

The 21st century has seen fundamental changes to society and business (Institute of Directors Southern Africa (IoD), 2016). Companies face a reality of disruption, climate change, geopolitical tensions, trade wars and economic uncertainty. This changing world creates greater expectations on organisations by stakeholders, and a more stakeholder inclusive approach is replacing the shareholder primacy model. Consequently, organisations are held more accountable for their impact on society and the environment (King, 2018).

Milton Friedman's concept of shareholder primacy dominated the way business was conducted during the 20th century (Friedman, 1970). However, as businesses began to realise natural assets were not infinite (King, 2018), the focus on the financial bottom line changed to a broader focus on societal, economic and environmental issues to achieve corporate sustainability and value creation.

Integrated reporting

Integrated thinking and reporting encompass a new way of viewing value creation. They encourages a business to report on financial and non-financial information in an integrated manner that reveals the impact that one has on the other (Perego, Kennedy & Whiteman, 2016), presented in an integrated report.

The International Integrated Reporting Council (IIRC) published The International <IR> Framework (the Framework), which aims to create a globally accepted framework for reporting on all aspects of value creation (IIRC, 2013). According to the IIRC (2013:8): "*an integrated report is a concise communication about how an organisation's strategy, governance, performance, and prospects, in the context of its external environment, lead to the creation of value in the short, medium and long term*". The report's primary purpose is to explain to providers of financial capital how the organisation creates value over time. Although aimed at shareholders, the IIRC states the report benefits all stakeholders interested in an organisations' ability to create value (IIRC, 2013).

ISBN NUMBER: 978-0-620-92690-4

IR has been practiced for about a decade, with early adopters in South Africa required to produce an integrated report in compliance with The King Report on Governance for South Africa (King III) since 2011. King IV, released in 2016, continued to require companies to produce integrated reports (Institute of Directors Southern Africa, 2016). The Framework provided additional guidance in 2013 (IIRC 2013). Consequently, there have been relatively limited reporting periods available for companies to produce integrated reports, resulting in a lack of leading practice examples (Rinaldi et al., 2018).

Furthermore, implementation issues have resulted in a growing academic debate around IR. However, the IIRC's former CEO has described IR's development using a journey metaphor: "IR is a journey and it will take more than one reporting cycle to get there. As businesses start to use <IR> as a tool to better understand the connections between key resources and relationships that contribute to their success, and as a result make more informed decisions, the real value of integrated thinking and the integrated report will be realised" (IIRC, 2015).

The adoption of integrated reporting has increased over the last decade. Therefore, this provides an opportune time to explore, in detail, the understanding and implementation of IR by companies and industry groups through analysing the reports produced.

EY's Excellence in Integrated Reporting survey

The purpose of the EY survey is to encourage and benchmark standards of excellence in the quality of integrated reports of South African listed companies (EY, 2018)**.** The overall aim of the survey is to help build confidence in South African capital markets. EY uses the survey as a trust-building tool by identifying best practice and standards in integrated reports produced by South African listed companies (EY, 2018).

According to EY's director of Professional Practice, "the impact of digital disruption on business has started to raise new questions for integrated reporting" (EY, 2018:5). Questions include the importance of governing data, how "bots" can increase quality and controls in accounting functions and the impact of technologies such as artificial intelligence on organisations. Furthermore, the overarching question is how organisations align the impact of Digital Disruption to their strategic performance indicators and how they explain this in their integrated report. Consequently, Digital Disruption and Cybersecurity themes, including how businesses have adapted their strategies, was one[1] of the top three key priorities identified by EY for companies to improve their integrated reports over the next year (EY, 2018).

Digital disruption and cybersecurity within King IV

EY did not introduce reporting on Digital Disruption and Cybersecurity as a new concept. King IV addresses the effect of technology on an organisation, stating the effect of technological

1 The other two priorities were firstly the issue of assurance, how do companies ensure that their integrated report is credible and authentic? Secondly, the issue of timing, with current integrated reports produced months after financial year-end. The more timeous release of the integrated report will increase its relevance to users (EY, 2018).

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disruption is so large that it has pushed society into the 'Fourth Industrial Revolution' (IoD, 2016).

In addition, upon drafting King IV, reliance was placed on the Framework and thus recommended principles in King IV are outcomes of integrated thinking (IoD, 2016). The Framework includes *Risks and Opportunities* as a content section. An organisation must identify specific risks and opportunities that affect value creation over the short, medium and long-term (IIRC, 2013). Similarly, King IV requires organisations to practice risk management by anticipating change and responding by capturing new opportunities and managing emerging risks. Also, King IV recognises that not only do information and technology overlap, but they are sources of value creation that present individual risks and opportunities. (IoD, 2016). Therefore, as King IV incorporates integrated thinking and addresses technological disruption, it serves as a starting point in assessing how businesses have adapted their strategy to Digital Disruption and Cybersecurity.

Digital disruption and cybersecurity in business

Technological change is the biggest concern to CEOs across all business sectors. The financial service industry appears to be aware of Digital Disruption, with 70% of CEOs in financial services citing technological change speed as a business concern (PwC, 2016). A direct consequence of technological change is Cybersecurity threats. If Cybersecurity threats are not mitigated, any organisation's continuity is compromised. CEOs of 69% of financial services organisations have reported they are extremely concerned about cyber threats, compared to 61% of CEOs across all sectors (PwC, 2016).

Furthermore, Digital Disruption and associated Cybersecurity threats heighten financial institutions' risk as perceived rewards for hackers are very appealing (PwC, 2016). If financial institutions do not adapt to Digital Disruption and Cybersecurity, they are at risk of substantial financial losses. Further risks include negative publicity and loss of consumer trust, particularly if sensitive consumer information is obtained (PwC, 2016).

Digital disruption and cybersecurity in banks

Financial services and financial technology (FinTech) are becoming increasing inseparable (PwC, 2016), placing Digital Disruption and Cybersecurity in a central position in the financial services industry. FinTech is dramatically changing the business model of banks (Sibanda et al., 2020) In a South African context, banks are responding to Digital Disruption by investing in digital transformation. Their response includes strategies to improve risk management and operational trends, including implementing emerging technologies and Cybersecurity resilience (PwC, 2017).

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Historically the South African banking sector has been dominated by 'four universal banks': Barclays Africa (ABSA)[2], Standard Bank, Nedbank and FirstRand (PwC, 2017). However, as other industries have set increased consumer expectation, there is a demand for better services (PwC, 2016). Consequently, a gap has developed for more personalised and affordable service offerings. This gap has seen the growth of non-traditional players (for example, Discovery Bank, TymeBank and Bank Zero). According to PwC (PwC, 2017), these players will leverage this gap by using digital solutions to deliver a more competitive banking offering. For example, TymeBank has no physical branches and is the first fully digital bank in South Africa (Urban & Townsend, 2021).

In response to new competitors, universal banks seek ways to stay relevant, which is evident in the prioritisation of digital transformation and data mining, both of which underpin the bank's strategy to stay relevant (PwC, 2017; Najaf, Mostafiz & Najaf, 2021). Therefore, new entrants, increased client expectation and digital innovation are characteristics behind a rapidly evolving banking sector, together with increased cybersecurity risks (Najaf et al., 2021).

Conclusion

The increased adoption of IR presents an opportunity to explore how companies in a specific industry produce integrated reports using the Framework. EY's survey identified a gap in reporting on Digital Disruption and Cybersecurity. The South African banking sector is reacting to Digital Disruption by investing in digital transformation. Additionally, this sector is particularly vulnerable to Cybersecurity threats. Despite existing research on Digital Disruption and Cybersecurity in both the financial services sector and South African banks, there is limited research on the level of disclosure in integrated reports on these themes. Therefore, this paper aims to explore the level of reporting relating to these themes by companies in the South African banking sector included in the EY survey.

METHODOLOGY

The methodology outlined below aims to answer the following research question: to what extent are South African banks providing disclosures about Digital Disruption and Cybersecurity in their integrated reports? This study will assess the extent to which South African banks, included in *EY's* survey, are reporting on Digital Disruption and Cybersecurity within their integrated reports for 2017 and 2018. Also, it aims to assess to what extent the reporting has changed from 2017 to the 2018 reporting period. It will look at the current level of reporting on Digital Disruption and Cybersecurity and if changes were made to reporting on these themes for the subsequent year-end.

2 ABSA achieved deconsolidation from Barclays Africa in June 2018 (ABSA, 2019). However, their 2017 report is under Barclays Africa. All further references to 'ABSA' in this paper are to the ABSA Group that operates in South Africa; irrespective of the name change from Barclays Africa to the ABSA Group.

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Sample

The sample is the integrated reports of companies in the South African banking sector included in the EY survey in 2018. These include Nedbank, Standard Bank, ABSA, First National Bank (FNB), Rand Merchant Bank (RMB) and Capitec. The South African banking sector, according to the JSE, includes the banks as mentioned above and Finbond. However, EY's survey analyses the top 100 JSE listed companies in South Africa, which excludes Finbond.

EY raised their concern after reading integrated reports of companies with financial year-ends during 2017 (EY, 2018). Therefore, the 2017 year-end integrated reports are used as a starting point to assess the extent of reporting on Digital Disruption and Cybersecurity. This starting point will explain why EY recommended improving Digital Disruption and Cybersecurity reporting. The sample included the 2018 year-end reports to enable a year-on-year analysis of the reports to identify changes or trends in reporting these themes.

Context

The results of the analysis of integrated reports cannot be interpreted in isolation and need to be positioned in their reporting context. This context includes the company year-end and the operating environment that is either unique to the bank or pervasive to the sample. The Framework requires companies to disclose information that is material to their shareholders (IIRC, 2013).

IFRS 9, the accounting standard focused on financial instruments, had an implementation date of 1 January 2018 (International Accounting Standards Board, 2014). It has a pervasive effect on the disclosure of financial capital across the sample banks. Similarly, the introduction of Basel III reforms, a banking specific regulatory requirement, also had an implementation date of 1 January 2018. As a result, it was seen in the disclosures across the sample (Basel Committee on Banking Supervision, 2017). The implementation and subsequent impact of IFRS 9 and Basel III were a focus of the reports in the sample as they impacted the banks' operations in the 2017 and 2018 reporting periods. However, this is not surprising as discussion of both reflects compliance with the Framework's requirement to discuss material issues to a shareholder of the relevant organisation.

The year-end of each company impacts the date their report is produced. Certain relevant information becomes available to companies with a later year-end, which was not available for companies with an earlier year-end. EY's concerns on the reporting on Digital Disruption and Cybersecurity are examples of available information required to produce the reports, which was not available to the early reporters.

EY raised the concern in the 2018 survey conducted on reports with year-ends on or before 31 December 2017 (EY, 2018). However, the survey was released in August 2018. Therefore, only companies with integrated reports produced after August 2018 had access to EY's Digital Disruption and Cybersecurity reporting concerns.

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Nedbank, ABSA and Standard Bank all have 31 December year-ends, and their integrated reports include material information up until March (post-year-end). First Rand and Rand Merchant Holdings (RMH) have a reporting period ending 30 June, while Capitec reports on 28 February. The difference in year-ends affect the availability of information, and as a result, Nedbank, ABSA and Standard Bank had access to EY's concerns before their financial year-ends. This imbalance in available information is particularly concerning for Capitec's reports as their financial year-end (28 February) resulted in both their 2017 and 2018 integrated reports being compiled before August 2018.

Furthermore, as previously mentioned, when discussing the sample, the banking sector includes First National Bank (FNB) and Rand Merchant Bank (RMB). However, both banks do not produce integrated reports specific to the company. The integrated reports of the respective holding companies, First Rand and the integrated report of Rand Merchant Holdings (RMH), disclose FNB and RMB's activities. RMH holds a 34.1% interest in First Rand and is consequently its holding company.

However, both First Rand and RMH report to their shareholders as an investment holding company. They report on FNB and RMB's activities as an investment, as well as the holding company's remaining investments. Consequently, the nature of First Rand and RMH integrated reports' are not focused solely on banking activities like their peers in the sample. As the banks do not produce their own integrated reports, the holding companies' reports were used in the sample and subsequent analysis.

Methodology of data collection

The data for this report was collected using a content analysis method. The data in the reports was compared against a predetermined checklist (Appendix A) to identify to what extent Digital Disruption and Cybersecurity themes were addressed and changes, if any, from the 2017 to 2018 year-end.

In addition, a paired T-test was conducted on each category in the checklist across the sample to assess with a 95% level of confidence if any significant reporting changes had occurred between the 2017 and 2018 reporting periods.

Rationale for checklist

King IV was used as a starting point to develop the checklist. It assists in analysing themes of Digital Disruption and Cybersecurity in the integrated reports. King IV endorses integrated thinking; therefore, King IV's principles were used as a basis to formulate the checklist (IoD, 2016).

Besides, specific recommended practices from King IV have been combined with recommendations from PwC's *Financial Services and Technology 2020 and beyond*: *embracing the disruption* report and PwC's *The Future of Banking: A South African perspective* report. These reports have analysed organisations and South African banks' response to IT risk and provided recommendations for organisations to adapt their strategy (PwC, 2016; PwC, 2017).

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Construction of the checklist

The checklist is split into three parts. The overall aim is to address the impact of the questions raised for reporting on digital transformation and disruption on business (EY, 2018).

The first part comprises themes recommended by PwC that organisations need to identify and subsequently address to begin planning for Digital Disruption by 2020. The themes are sub-categorised into nine themes representing Digital Disruption. However, during initial data collection, a new theme of *competition from non-traditional competitors* emerged, and the checklist was revised accordingly.

The second part assesses if the company used their integrated reports to disclose their use of the opportunities required to stay relevant in an industry facing Digital Disruption (PwC, 2017). The opportunities were split into the following subcategories: *Accelerate transformation*, *Harness the power of data analytics* and *leverage off established networks and capabilities to create high-end value for clients.* The subcategories are opportunities recommended by PwC in 2017 for a company to stay relevant in the context of Digital Disruption. Each subcategory has specific criteria to assess if the opportunities have been utilised.

The final part assesses to what extent the company used its integrated reports to disclose how they adapt to Cybersecurity. PwC's (2016) *Embracing Disruption* report includes recommendations on handling Cybersecurity when adapting strategy to focus on leveraging Digital Disruption, which was incorporated. The methods to handle Cybersecurity are split into the following subcategories: *Proactively manage cyber risk and regulation*, *Build and execute a cybersecurity roadmap, Establish a commercially reasonable cybersecurity capability, Develop a world-class cybersecurity response and align cybersecurity team with business risks.* During the initial data collection, the checklist was also revised to include the theme of *cyber skills training*.

Data collection

Integrated reports were analysed manually. Every disclosure point was recorded, classified according to the checklist and noted under which section it was mentioned in the report. Furthermore, each time a criteria point was mentioned, it was counted even if it resulted in multiple counts for the same point. For example, a banking app is an example of a criteria point of expanding IT investment under the subcategory accelerate transformation. If the same banking app was mentioned more than once, it was counted each time. This method was applied across the sample to ensure consistency in the counting process.

The category of *financial technology driving the new business model* under Part One and *accelerate transformation* under opportunities in Part Two also had similar reporting terminology. Thus, when a general reference was made to financial and digital technology in the business, it was counted under Part One. On the other hand, when an example of using financial and digital technology was reported, it was counted under Part Two. This allocation resulted in the financial technology theme becoming the umbrella body for digital mentions across the sample.

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Limitations

This paper aimed to assess the extent to which South African banks are reporting on Digital Disruption and Cybersecurity. However, as previously discussed, Finbond was omitted from the sample. As a result, this report does not cover the IR disclosure of all companies that make up the listed South African banking sector.

The extent to which the banks are reporting on Digital Disruption and Cybersecurity is based on recommendations from King IV, and PwC reports. The checklist's relevant recommendations and whether the banks meet the checklist's criteria are based solely on the author's judgment and are subjective. This was illustrated during data collection, where the author would look for exact phrases of themes in the checklist. If the exact phrase was not used, but the theme was spoken about, the final decision of whether the criteria was met was subjective.

Furthermore, the nature of IR is disclosure-based. Therefore, companies' behaviour is inherently different from reporting on that behaviour. Thus, this paper's findings are limited to what companies choose to disclose in their reports.

FINDINGS AND DISCUSSION

This study examines the disclosure of Digital Disruption and Cybersecurity by South African banks in their 2017 and 2018 integrated reports. The findings presented include discussing the extent of reporting in 2017, the subsequent changes in 2018 and the correlation between the results and the integrated reports' ranking in the 2018 EY survey.

Digital disruption

The number of times Digital Disruption was disclosed in the 2017 and 2018 reports was counted. Table 1 presents the results per bank.

Table 1: Digital disruption disclosures in the 2017 and 2018 integrated reports

	2017						2018					
	Nedbank	First Rand	Capitec	ABSA	Standard Bank	RHM Holding	Nedbank	First Rand	Capitec	ABSA	Standard Bank	RHM Holding
Financial technology will drive the new business model	66	13	9	41	89	17	93	37	22	41	105	18
Consumer intelligence important predictor for revenue growth	3	0	0	1	3	0	0	1	0	1	0	0

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Public cloud dominant infrastructure	2	0	0	5	1	0	1	1	0	2	7	0
Cybersecurity a top risk	11	4	0	11	14	1	11	2	0	5	6	2
Sharing economy embedded in every part of financial system	9	4	1	11	15	5	1	5	1	3	7	1
Blockchain will shake things up	1	0	0	0	1	0	1	0	0	0	4	0
Advances in robotics start a wave of reshoring and localisation	8	0	0	4	6	1	3	2	2	0	5	0
Asia emerges as a key centre for technology innovation	0	0	0	0	0	0	0	0	0	0	0	0
Regulators turn to technology	1	0	0	0	0	0	0	0	0	0	3	0
Industry competition*(new)*	2	2	0	4	7	1	21	2	0	4	7	0
Total	**103**	**23**	**10**	**77**	**136**	**25**	**131**	**50**	**25**	**56**	**144**	**21**

The results show eight out of the original checklist's nine themes were reported on by at least one bank. *Asia emerging as a key centre for technology innovation* was the only theme not mentioned by any of the sample banks. Besides Capitec, all banks acknowledged the emergence of competition in the industry and used technology as an enabler to break into the traditional banking space. However, as Capitec is not a traditional banking player, it may not be material for them to acknowledge this theme. They are a competitor in a banking space historically dominated by ABSA, Nedbank, FNB and Standard Bank (PwC, 2017).

Financial technology driving the new business model was mentioned the most, indicating the importance of using *financial technology* to all the banks. In addition, all the banks reported on the *sharing economy being embedded in the financial system*, although it was mentioned substantially less than *financial technology.* However, this is not surprising as financial technology was used as an umbrella theme for data collection. Less than half the sample mentioned using emerging digital technology such as the *public cloud* and *blockchain*.

Similarly, as with the 2017 reports, all themes relating to Digital Disruption (besides *Asia emerging as a key centre for technology innovation*) were disclosed by at least one sample bank in 2018. This extensive disclosure is notable for Standard Bank, particularly as they are exposed to Asia through their partnership with the Industrial and Commercial Bank of China (ICBC) (Standard Bank, 2018; Standard Bank, 2019). *Financial technology driving the new business model* remained the most disclosed, with all the sample banks increasing the number of mentions of *financial technology* compared to their 2017 report, apart from ABSA, whose count remained consistent across the reporting period at 41. Nedbank had the most considerable increase in reporting on *financial technology* from 66 to 93 counts.

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Furthermore, similarly to their 2017 reports, all the sample banks continued to report on the *sharing economy* in 2018, and all banks, besides Capitec, acknowledged *Cybersecurity as a top risk*. Standard Bank was the only bank to acknowledge *regulators turning to technology.* First Rand, ABSA, Standard Bank and Nedbank continued to report on *competition via non-traditional competitors.* The number of mentions remained consistent with the 2017 reports, except for Nedbank, whose reporting on *competition* increased from 2 to 21 counts. Capitec's reporting on *competition* remained unchanged. Nedbank and Standard Bank remained the only two banks to report on *blockchain*. Reporting about using the *public cloud* was acknowledged by the same banks in 2017 and 2018, except First Rand, who first reported it in 2018. None of the 2018 reports acknowledged *consumer intelligence becoming an important factor to predict revenue growth.*

However, all banks reported using data and analytics in their 2018 reports. When an example of data analytics was mentioned, it was classified as either an opportunity or a Digital Disruption theme. If overlap existed in classification, it was counted in one category only to avoid double counting. Therefore, no mention of this theme does not equate to failed Digital Disruption disclosure; it could mean that it was counted under a different checklist category. First Rand increased their reporting on Digital Disruption from 23 to 50, the largest percentage increase at 118%. RMH was the only company to decrease its reporting on Digital Disruption from 25 to 21.

Moreover, the paired T-test results showed two significant increases, at a 95% confidence level, to the reporting on Digital Disruption from 2017 to 2018 across the banks in the sample (Appendix B). The significant themes were *financial technology driving the new business model* and *sharing economy embedded in every part the financial system.* These results highlight a significant increase by all banks on the reporting in these themes, which indicates an awareness that the banking industry is changing due to Digital Disruption (PwC, 2017). The remaining themes did not change significantly from 2017 to 2018.

Digital opportunity

The following section will focus on the second component of the findings chapter. This discussion encompasses the level of reporting that discloses how the organisation is implementing strategies to embrace digital opportunity. Figure 1 below shows the number of times digital opportunity was mentioned, per bank, in their 2017 and 2018 reports.

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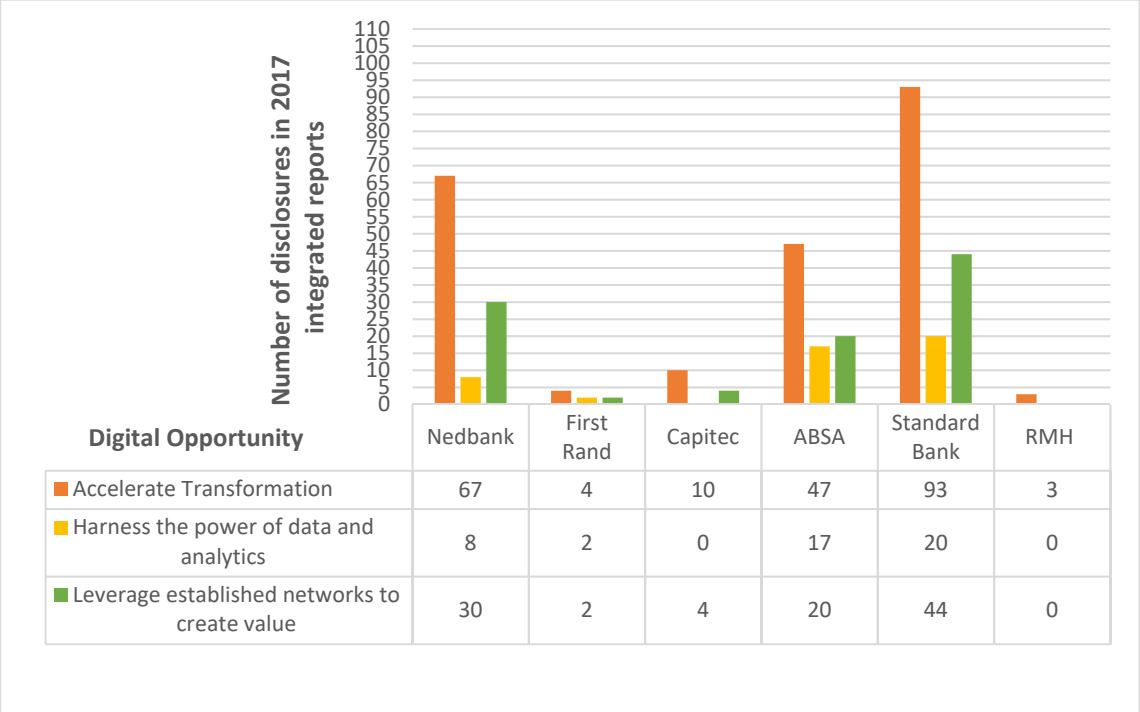
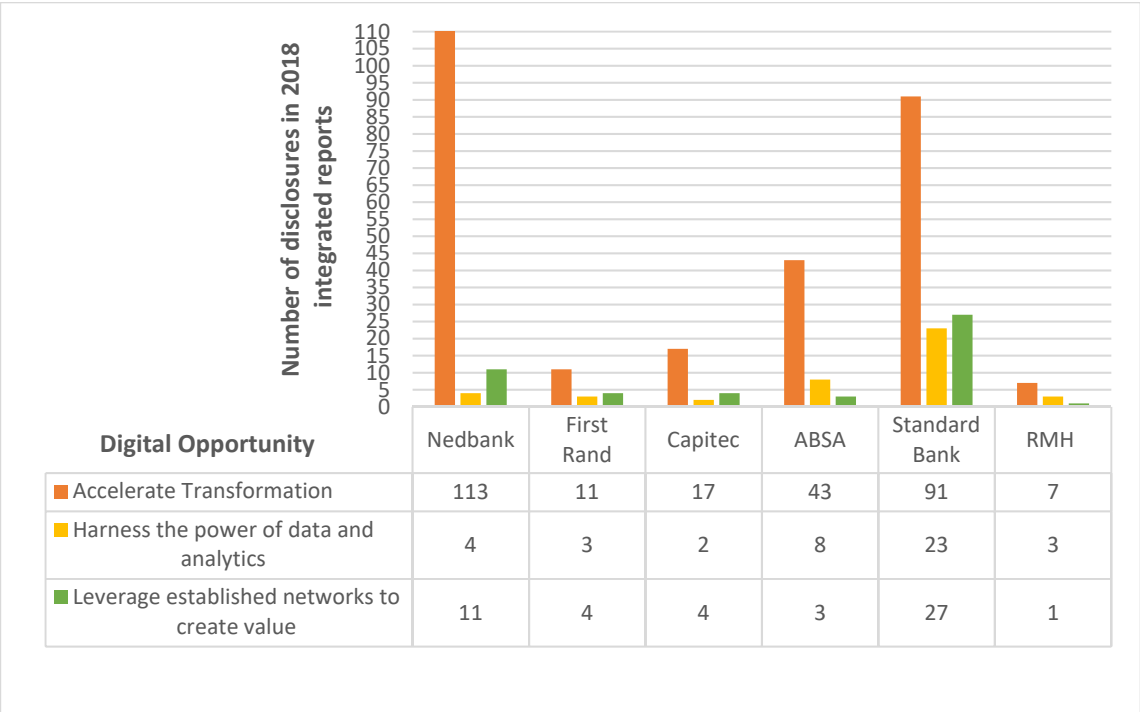
Figure 1: Disclosure of Digital Opportunity in the 2017 and 2018 integrated reports



Digital Opportunity	Nedbank	First Rand	Capitec	ABSA	Standard Bank	RMH
Accelerate Transformation	67	4	10	47	93	3
Harness the power of data and analytics	8	2	0	17	20	0
Leverage established networks to create value	30	2	4	20	44	0



Digital Opportunity	Nedbank	First Rand	Capitec	ABSA	Standard Bank	RMH
Accelerate Transformation	113	11	17	43	91	7
Harness the power of data and analytics	4	3	2	8	23	3
Leverage established networks to create value	11	4	4	3	27	1

All the banks reported on the category *Accelerate transformation*. Examples of digital tools were the main factor that resulted in a high count of *Accelerating transformation* across the sample in 2017. All the 2017 reports, besides RMH and Capitec, disclosed examples of data and analytics as opportunities in their reports. Similarly, all the 2017 reports besides RMH reported on the opportunity to leverage established networks to create value.

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As previously mentioned, RMH and First Rand's reporting focuses on material matters for the holding company's shareholders and not specifically FNB and RMB shareholders. The low reporting compared to the sample may indicate that the opportunities recommended in the checklist are not as material to shareholders of the investment holding company as they would be to shareholders of the individual banks. However, RMH and First Rand mentioned digital opportunities in their report's business model section when specifically reporting on their investments in FNB and RMB. This disclosure illustrates that when the holding company reports on their investment in the banks, they are aware of the role digital opportunity has in their investments' operations and are subsequently disclosing this role when explaining their value creation story. Therefore, the low reporting counts for RMH and First Rand compared to the rest of the sample are due to their integrated report's investment nature and not necessarily due to a lack of reporting on digital opportunity.

Accelerate transformation remained the highest counted component of adapting towards digital opportunity in 2018. All sample banks increased the number of mentions of criteria under *Accelerate transformation* in 2018. Nedbank had the highest increase from 63 counts to 113 counts. First Rand had the highest percentage increase by 175% (4 counts to 11). Capitec and RMH reported using data and analytics for the first time in 2018. The rest of the sample continued to report on data and analytics. However, Nedbank, ABSA and Standard Bank all decreased their number of mentions from their 2017 reports, but First Rand increased their reporting marginally from two to three counts.

RMH also reported on *leveraging established networks to create value* for the first time in 2018. This resulted in all sample banks reporting on this component of digital opportunity. Similarly to data and analytics, Nedbank, ABSA and Standard Bank decreased their counts on this component, with First Rand increasing theirs slightly from two to four and Capitec reporting the same count of four.

Nedbank, ABSA and Standard Bank all completed the launch of digitisation strategies in 2017, and their reports highlighted the strategic rationale and implementation process of digitisation strategies. However, in the 2018 reports, the focus switched to the disclosure on these respective strategies' continued implementation. The decline in disclosure of digital opportunity components, as explained above, may be due to a change in the digital strategies' disclosure from initially introducing the strategy to shareholders in 2017 and explaining the implementation process in 2018.

Consequently, the launch of digitisation strategies required more disclosure as a change in strategy is a material issue that requires explanation to shareholders because it directly impacts the organisation's value creation process. Therefore, as the rationale for a change in strategy was required in 2017, it is unsurprising that digital opportunity disclosure was higher in the 2017 reports.

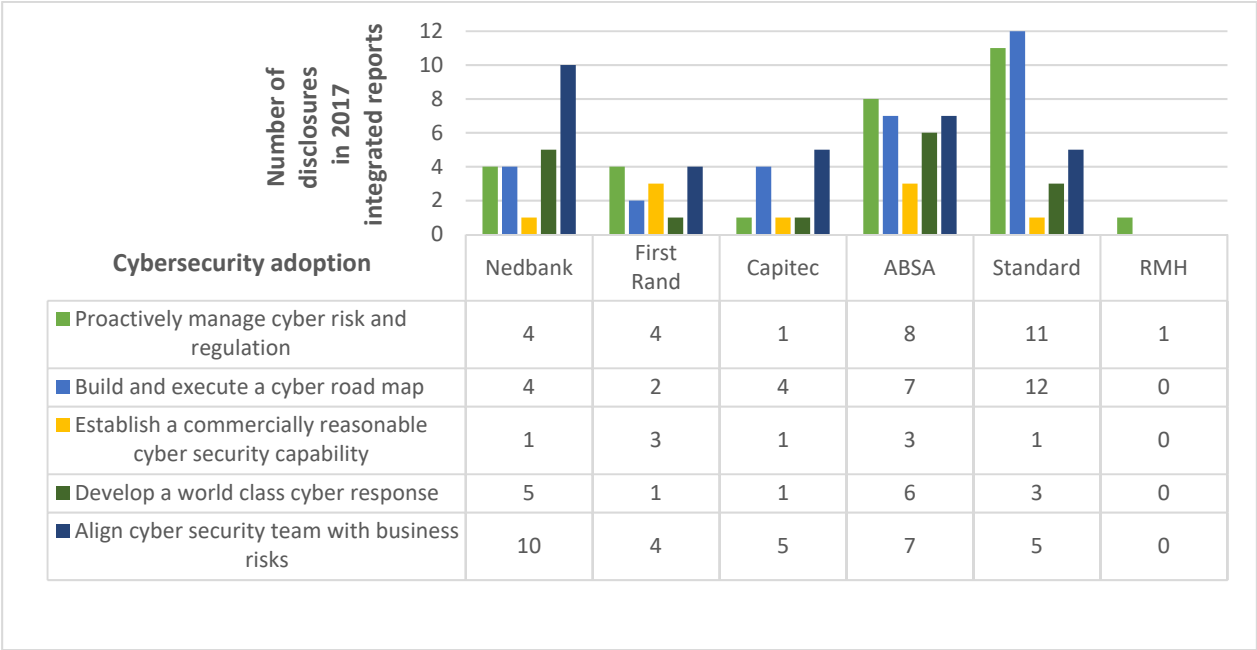
A paired T-test was performed, comparing 2017 to 2018. There was no significant increase in digital opportunity reporting by any of the banks in the sample, at a 95% level of confidence, from 2017 to 2018.

ISBN NUMBER: 978-0-620-92690-4

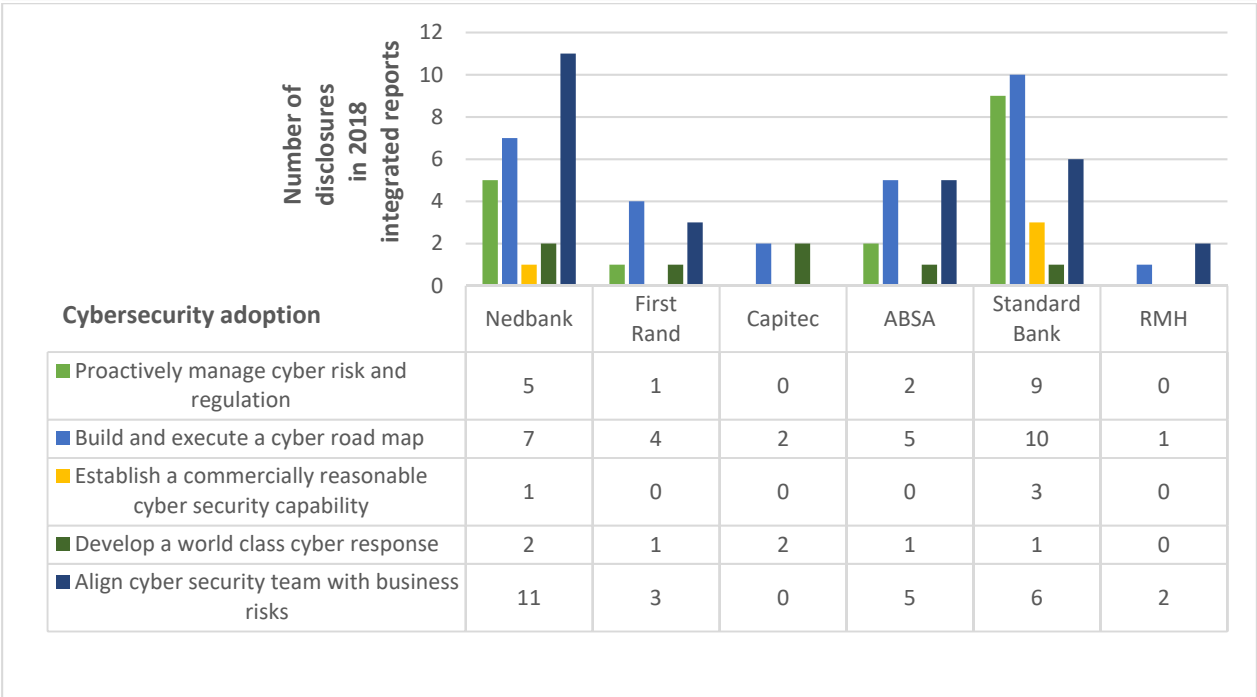
Cybersecurity

The final section will analyse Cybersecurity reporting. This discussion includes evidence of adopting cyber to digital strategy as advised by PwC (2016). Figure 2 shows the number of times Cybersecurity was mentioned, per bank, in their 2017 and 2018 reports with the criteria used to count each category listed in the checklist.

Figure 2: Disclosure of cybersecurity adoption in the 2017 and 2018 integrated reports



Cybersecurity adoption	Nedbank	First Rand	Capitec	ABSA	Standard	RMH
Proactively manage cyber risk and regulation	4	4	1	8	11	1
Build and execute a cyber road map	4	2	4	7	12	0
Establish a commercially reasonable cyber security capability	1	3	1	3	1	0
Develop a world class cyber response	5	1	1	6	3	0
Align cyber security team with business risks	10	4	5	7	5	0



Cybersecurity adoption	Nedbank	First Rand	Capitec	ABSA	Standard Bank	RMH
Proactively manage cyber risk and regulation	5	1	0	2	9	0
Build and execute a cyber road map	7	4	2	5	10	1
Establish a commercially reasonable cyber security capability	1	0	0	0	3	0
Develop a world class cyber response	2	1	2	1	1	0
Align cyber security team with business risks	11	3	0	5	6	2

ISBN NUMBER: 978-0-620-92690-4

The reporting on Cybersecurity, across all reports, was mentioned the least. RMH reported on managing cyber risk proactively once in their report and made no other mention of Cybersecurity. The remaining organisations' reports identified Cybersecurity as a business risk and the existence or implementation of a plan to manage Cybersecurity. However, the extent of disclosure of a Cybersecurity plan differed across the banks, with First Rand disclosing it twice compared to Standard Bank who disclosed it 12 times.

ABSA reported the emergence of cyber-training investment in cyber skills as a criterion point of *aligning the cybersecurity team with business risks* in their 2017 report. Only ABSA's integrated reported disclosed cyber training in 2017.

Overall, the Cybersecurity checklist component had the lowest reporting level across all the reports in 2017. This low level of reporting is concerning as cyber threats are among the top risks facing the financial institution industry (PwC, 2016). However, as cyber threats were classified as a risk in the reports, the low extent of reporting may be explained by cyber threats falling under the integrated report's Risk and Opportunities content section (IIRC, 2013). Cybersecurity is different from Digital Disruption and Digital Opportunity. They were both disclosed across different content elements in the reports and therefore achieved higher counts as they were repeatedly mentioned in different places.

The checklist's Cybersecurity component remained the lowest reported part of the checklist during the 2018 reporting period. RMH slightly increased their reporting on Cybersecurity from one to three counts. All the banks across the sample acknowledged Cybersecurity as a high business risk and a strategic business issue, with RMH acknowledging it for the first time in the 2018 report.

There was an increase in cyber skills training reporting, a criterion point for *aligning the cybersecurity team with business risks* in 2018. All the banks, besides Capitec, reported on investing in cyber skills. This increase is substantial as in 2017 only ABSA reported investing in cyber skills. This disclosure indicates an awareness of cyber issues and a material impact its risks may have on shareholders.

Standard Bank experienced a cybersecurity breach connected with Liberty Life clients' emails in June 2018 (Standard Bank, 2019). However, Standard Bank’s 2018 reporting, based on the number of counts, decreased marginally from 31 counts to 29. Their explanation of Cybersecurity was also concentrated in the performance sector of their report. This contrasts with the 2017 report where the explanation of Cybersecurity was predominantly dispersed between strategic resource allocation, risk and opportunities and reporting by management. The concentration of Cybersecurity disclosure in the performance section of the 2018 report is not surprising as the cybersecurity breach may be material to Standard Bank shareholders in the context of their 2018 performance.

A paired T-test was again performed, and there was no significant increase in reporting on Cybersecurity by all banks in the sample, at a 95% level of confidence, from 2017 to 2018 (Appendix B).

ISBN NUMBER: 978-0-620-92690-4

Conclusion of findings

The extent of reporting on the Digital Disruption component of the checklist in 2017 was substantially greater across the sample when compared to Cybersecurity. In 2017 the top performance against the checklist was Standard Bank, followed closely by Nedbank and ABSA. A significant gap was seen in reporting between the top and bottom half of the sample. RMH performed the worst, followed by Capitec and First Rand.

In 2018 Standard Bank remained the highest performer. Nedbank and ABSA remained in the same position. However, Nedbank increased overall, and their results were similar to Standard Bank, while ABSA remained largely stagnant from 2017 to 2018. First Rand, Capitec and RMH all remained in the same position in 2018. All the companies increased their reporting. However, there is a big gap in reporting disclosure against the checklist between top performer Standard Bank and RMH. On the other hand, this may not be a surprising result based on each report's purpose. Standard Bank is reporting to the group's shareholders in the context of a banking organisation; RMH is reporting to its shareholders as an investment holding company.

Furthermore, despite changes to reporting on Digital Disruption and Cybersecurity against all sections of the checklist in 2018, the paired T-test results revealed only two significant changes across the sample being *Financial technology driving the new business model* and the *Sharing economy being embedded in the financial system.* The remaining categories showed no significant changes (Appendix B). These results indicate an increase in Digital Disruption reporting by all banks in the sample. However, this may not be surprising due to the industry being directly impacted by Digital Disruption (Dicey, 2019; PwC, 2016; PwC, 2017).

The sample banks' performance against the checklist appears to have the following two correlations: their ranking in the 2018 EY survey and their reporting dates. In 2018 EY ranked Nedbank, Standard Bank and ABSA as *excellent*, with all reports ranking in the top 10; 1st, 8th and 10^{th,} respectively (EY, 2018). First Rand and RMH ranked as *average*, with Capitec ranked as *progress to be made*. The top performers in this paper were ranked as *excellent* compared to the bottom half which ranked as *average* or *progress to be made*. The second correlation is that the three top performers in this paper have the latest reporting periods (31 December). The bottom performers have earlier year-ends, with 30 June for First Rand and RMH and 28 February for Capitec. The timing of the year-end directly impacts the organisation's access to information. This difference in timing is evident in this study as the bottom performers did not have access to EYs concerns around Digital Disruption disclosure simultaneously as the top performers.

CONCLUSION

South African banks are reporting on the themes of Digital Disruption and Cybersecurity. However, while the banks are reporting to some extent on Digital Disruption, they are not reporting on all aspects required to prepare for Digital Disruption in future. Also, the sample banks overall report all digital opportunities in the checklist – with an increase in reporting from

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2017 to 2018. However, the reporting on Cybersecurity criteria across the sample is low – despite an overall increase in reporting from 2017 to 2018.

Therefore, based on the sample of integrated reports in the banking sector that participated in the EY survey, this paper concludes that the level of reporting on Digital Disruption and Digital Opportunity is higher than reporting for Cybersecurity. Furthermore, the reporting level varies across the integrated reports, with the bottom half of the sample achieving low levels of reporting compared to the top half of the sample achieving comparably high levels of reporting on Digital Disruption, Digital Opportunity and Cybersecurity in 2017.

The concerns raised by EY are justified, especially for the bottom half performers in the sample. The reporting on both Digital Disruption and Cybersecurity increased in 2018, but the increase in Cybersecurity reporting was not as substantial as the increase in Digital Disruption. Further research will need to be conducted on whether this concern is required for all EY survey reports.

Areas for future research

The discussion in this paper centred around the extent of reporting on Digital Disruption and Cybersecurity and the level of change in reporting from the 2017 to 2018 reporting period. Future research could expand this paper to assess where in the integrated reports Digital Disruption and Cybersecurity are disclosed and if the positioning of these disclosures affects the quality of integrated reports produced per the Framework.

Also, integrated reports whose companies have later year-ends are produced later than reports of companies who have earlier year-ends. This difference in timing allows them to see other companies' reports and access more recent information (for example, concerns around Digital Disruption presented by EY). Furthermore, companies with later year-ends have been rated higher by EY in the 2018 survey. This benefit is illustrated by Nedbank, ABSA and Standard Banks' *excellent* ranking, which all have years ending 31 December. This directly contrasts to Capitec, who ranked as *progress to be made* and has a 28 February year-end. There is an opportunity to research the extent of the correlation between the reporting date and the quality of integrated reports produced.

ISBN NUMBER: 978-0-620-92690-4

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Appendix A

The disclosure checklist used for the study is presented below. The checklist was based primarily on Principle 11 and 12 (including recommended practices) of King IV (IoD, 2016).

PART ONE: Digital Disruption

- Fin Tech will drive the new business model
- Consumer intelligence will be the most important predictor of revenue growth and profitability
- Public cloud will become dominant infrastructure model
- Cybersecurity will be one of the top risks facing a financial institution
- Sharing economy will be embedded in every part of the financial system
- Blockchain will shake things up
- Advances in robotics will start a wave of re-shoring and localisation
- Asia will emerge as a key centre of technology driven innovation
- Regulators will turn to technology as well
- Competition in the industry via non-traditional competitors *(added)*

PART TWO: Digital Opportunities

- Accelerate Transformation
  - ✓ effective growth strategies [PWC recommends innovation partners as an example]
  - ✓ new ways of working
  - ✓ attracting talent and skills necessary to execute and win
  - ✓ Expand IT investment initiatives (evidence of investment in digital transformation) [3]

- Harness the power of data and analytics [Take advantage of scale]
  - ✓ Use data to gather detailed consumer insights
  - ✓ data analytics to improve product offerings

- Leverage established networks and capabilities to create high value for clients
  - ✓ Update IT operating model

3 Digital Transformation refers to investment in capital expenditure on IT, ERP systems, and digital tools (PWC, 2017).

ISBN NUMBER: 978-0-620-92690-4

- ✓ Agile ways of working[4]
- ✓ Slash costs by simplifying legacy systems
- ✓ Prepare architecture to connect to anything, anywhere

PART THREE: Cybersecurity

- o Proactively manage cyber risk and regulation
  - ✓ cybersecurity treated as a strategic business issue
  - ✓ business is cyber resilient[5]
  - ✓ cyber protection been included as a key priority in the overall regulatory program
- o Build and execute a strategic cybersecurity roadmap
  - ✓ Develop a plan to mitigate exposure to threats
  - ✓ the plan has been adjusted in response to landscape changes
- o Establish a commercially reasonable cybersecurity capability
  - ✓ Cyber risk programmes should be tailored to company risk profiles
  - ✓ Company is paying attention to third party vendors[6]
- o Develop a world class cybersecurity response
  - ✓ The company has taken an enterprise risk management approach
  - ✓ Incident and crisis management needs to be a key priority
- o Align cybersecurity team with business risks
  - ✓ Governance and reporting lines have been established
  - ✓ Technology risk function exists
  - ✓ The executive team is accountable for IT risks
  - ✓ Cybersecurity is ranked highly as a business risk
  - ✓ Investment in cyber training or cyber skills *(added)*

4 Agile ways of working refer to a shift to an IT focus when delivering projects.
5 PwC indicates that the business is cyber resilient in this context if they developed a risk appetite.
6 In 2020 more risk programmes will be provided by vendors.

ISBN NUMBER: 978-0-620-92690-4

Appendix B

Results of the Paired T-test, conducted with a 95% level of confidence across each category, in the sample bank's integrated reports in 2017 and 2018

Category	T Stat (Critical Value: 2,570581836)	P Value	Statistically Significant
Financial Technology will drive the new business model	2,928561181	0,032687266	Yes
Consumer intelligence important predictor for revenue growth	1,185113658	0,289224589	No
Public cloud dominant infrastructure	0,405998971	0,701535091	No
Cybersecurity a top risk	1,666666667	0,156457845	No
Sharing economy embedded in every part of financial system	2,634930197	0,046257694	Yes
Blockchain will shake things up	1	0,363217468	No
Advances in robotics start a wave of reshoring and localisation	0,976374617	0,363217468	No
Asia emerges as a key centre for technology innovation	-	-	No data
Regulators turn to technology	0,597614305	0,576131726	No
Industry Competition*(new)*	0,936281676	0,392110389	No
Accelerate transformation	1,288189322	0,254069923	No
Harness the power of data and analytics	0,337099931	0,749731377	No
Leverage established networks to create value	2,015048373	0,103562421	No
Proactively manage cyber risk and regulation	2,070196678	0,093216321	No
Build and execute a cyber road map	0	1	No
Establish a commercially reasonable cybersecurity capability	1,051757905	0,34106202	No
Develop a world class cyber response	1,626978434	0,164670256	No
Align cybersecurity team with business risks	0,632455532	0,554878283	No

ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

CENTRAL REGION

Investment Property in South Africa: Real Vs Financial Assets

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ABSTRACT

One of the key decisions when constructing an asset portfolio with Investment Property is whether to include the Real or financial asset. This paper analyses the price performance of each over an 18-year period from January 2000 to determine which provides a better risk-adjusted return. Using the FNB Housing Price Index and investment property financial assets to measure the price change of Real and financial assets respectively, a return on each asset class was measured using the Sharpe Ratio. A z-test and F-test then tested statistical significance in the mean and variability of the returns. The results show that Financial assets provided a greater risk-adjusted return over the period. Their performance was especially bolstered by the introduction of REITs in 2013. The weak performance of real assets was due to their stronger association with weak GDP growth and economic uncertainty in South Africa. These findings provide investors with guidance on how portfolios can be diversified when adding property investments while also increasing the return by considering the asset-specific risk factors influencing the price performance.

INTRODUCTION

Investing in Investment Property to earn rental income and realizing a capital gain when it is sold is the status quo for investment in this class of asset. But such an investment comes with opportunity costs, such as portfolio diversification and liquidity risks (Parikh & Zhang, 2021) The same asset exposure can be achieved through investing in the Financial Asset, such as Real Estate Investment Trusts (REITs) or property Exchange Traded Funds (ETFs) (Bloomberg, 2019a). The aim of this paper is to understand the choice an investor faces when looking to include Investment Property in his/her multi-asset portfolio and what the differential return outcome is.

The advantages of the real asset are that it provides diversification (Parikh & Zhang, 2021) a natural hedge against inflation (Parikh & Zhang, 2021) and it has the ability to provide the investor with a fixed return through rentals (Fevurly, 2018). However, its disadvantages include the risks of raising financing (Cerutti et al., 2017), illiquidity risk (Lin, 2004) and higher transaction costs (Salzman, 2017), and increased exposure to cyclical GDP growth and economic uncertainty (Hala et al., 2020; Kola & Kodongo, 2017).

Financial assets benefit from their greater liquidity (Carstens & Freybote, 2018), more pronounced international investment (Kola & Kodongo, 2017), tax advantages (Fevurly, 2018) and simpler financing structures (Ntuli & Akinsomi, 2017). One of the drawback of financial assets are the financial skills required to effectively trade in them (Parikh & Zhang, 2021) which precludes a large part of a given population from forming part of this market.

Given the many advantages and disadvantages of the Real and financial assets there is no well-defined answer as to which asset choice is a better investment decision within the South African market. This exposes a clear gap in the literature. Understanding the differential returns between Real and financial assets highlights the unique contribution this paper can make to an investor's investing decisions.

To answer the research question, this paper examines the monthly returns of both Real and financial assets. The Sharpe Ratio (1966) is employed to measure the risk-adjusted return over two periods: the first being 6 years, dating back to the introduction of REIT's and the second being 18 years. A z-test and F-test measure the statistical significance between the risk-adjusted means and variances across the asset classes.

The results show that returns of financial assets were statistically significantly higher than real assets over the 6-year period. The introduction of Real Estate Investment Trusts (REITs) into the South African market changed the performance of Investment Property Financial Assets. real assets also performed weakly due to their stronger association with weak GDP growth and economic uncertainty.

This finding adds value by allowing investors to make a better investment decision when including Investment Property into their multi-asset portfolio. Notably, by understanding the opportunity cost associated with either-or investment. Furthermore, it allows the South African

ISBN NUMBER: 978-0-620-92690-4

government to understand the attraction of this legal structure for foreign investors. The results indicate that REITs should be used to capture future foreign and local investment.
Next, this research paper will present literature covering investment decisions, Investment Property as an asset class, and the development of the Investment Property landscape. Then, the research approach will indicate how the Real and financial assets will be compared to present a charted comparison of the returns of the two assets and plot these returns on a time graph to indicate the significance of the introduction of REIT's into the South African market.

LITERATURE REVIEW

Investment decisions

An investment is the placement of funds that one has today with the expectation that it will yield benefits in the future (Nguyen et al., 2020). Harry Markowitz (1952) laid the foundational theory for asset selection by stating that an investor acting rationally should always try to maximise their expected returns and/or minimise the risk of the entire portfolio, taking into account possible correlations between the assets. When making investment decisions, there are many options available.

One option, of relevance to this paper, is the distinction between Real and financial assets. Real assets are those tangible assets which are valued for their physical qualities, whereas financial assets are intangible assets which derive their value from claims on current and future cash flows (Toczylowski et al., 2018). Real assets are the productive capacities of an economy, including land, buildings, technologies and knowledge that can be used to produce goods and services (Bodie et al., 2018). In addition to their productive capacity, the addition of real assets into investment portfolios has beneficial consequences such as enhanced risk-adjusted returns while providing current income, inflation protection and capital appreciation (Aye, 2018; Toczylowski et al., 2018).

After the formalisation of financial markets, investors were able to choose between Real and financial assets when constructing an investment portfolio. financial assets come in a variety of categories including shares, debt securities, derivatives, and indices. The performance of these Financial assets is contingent on the success or failure of underlying real assets and their price is derived from its future expected benefits, irrespective of which category they fall into (Toczylowski et al., 2018).

The investment decision-making process differs between Real and financial assets in that financial asset investors rarely consider other features of the asset apart from the risk-return profile while real asset investors will consider strategic, environmental, technological and other physical features (Boyadzhiev, 2020). Moreover, financial assets have a large number of shares offered and the number purchased depends on the available funds in contrast to real asset investors who have a limited number of assets which are contested by many investors and won by those with significant funds to purchase the whole asset (Hala et al., 2020).

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Investment property

There are four types of real assets: residential real estate (residential property), commercial real estate, natural resources and infrastructure (Zheng et al., 2020). Residential property will be explored in this study. Residential property is defined as an area developed for people to live in including a detached house, semi-detached house (duplex), townhouse and condominiums (apartments) (Pongpaichet et al., 2021).

Residential property is the world's largest asset class (Eichholtz et al., 2021) as many people own at least one home which they live in. However, it is seen as an attractive investment as both private and institutional investors allocate funds into this asset class (Bracke, 2021). The high levels of house price growth globally have been a key driver of this increase in interest (Hoesli, 2020).

For many individuals, owning a home is not seen as an investment in the same sense as owning stocks or bonds. Rather, it is seen as a use asset. This is in contrast with investments in real property such as a rental home or vacation house (Fevurly, 2018). However, it is still useful to track the return profile of this asset to determine what performance investors can expect.

The primary benefit of real assets such as residential property is that they have a total return to inflation and/or economic growth that differs from those of traditional financial markets such as inflation protection, stagnation protection, and portfolio diversification (Parikh & Zhang, 2021). Long-term leases can be negotiated with expected inflation and growth forecasts in mind thus providing unique foresight (Jordà et al., 2019).

An additional advantage of investing in Investment Property is the extent of mispricing in the market for this asset class. Bond (2018) found that mispricing is influenced by investor sentiment, which is the difference in valuation between an investor with a rational expectation and one with a biased view on future events.

Notwithstanding the advantages of including Investment Property in an investment portfolio, this asset class also comes with certain limitations. Financing investment in the real asset most often occurs through raising debt (Cerutti et al., 2017) which creates its own limitations and risks. For one, the risk that cashflows from rentals will not be sufficient to cover mortgage payments (Velusamy, 2017) as investors do not have control over the market for property rentals. In a scenario where they might be without a tenant, potential cash flow risk exists.

Investing in Investment Property also carries relatively high transaction costs (Salzman, 2017) such as deposit requirements for obtaining financing and transfer duties (Income Tax Act No. 58 of 1962, 1962). This cashflow risk extends further including not being able to pay for the upkeep of the property which includes maintenance costs, utility fees, homeowner's insurance and municipal rates. These costs increase the liquidity risk of the investment (Lin, 2004) and create further risk and uncertainty regarding profit maximisation. These limitations and risks potentially raise the attractiveness of rather investing in the financial asset.

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Financial assets

Markets enable investors to invest in both Real and financial assets that meet the definition of Investment Property. In South Africa, these financial assets are REITs, ETFs and Mutual funds (Bloomberg, 2019b).

On the 1st of May 2013 Real Estate Investment Trusts were introduced into South African Legislation through the Income Tax Act (Gert, Boshoff, & Bredell, 2013). Like a mutual fund, a REIT is a corporation or trust, that uses the pooled capital of various investors to own or finance income producing Investment Property (Nurick, Boyle, Morris, Potgieter, & Allen, 2018).

Similar to REITs, an ETF is a financial asset traded on a formalized exchange commonly constructed through purchasing component stocks of an index in an attempt to track the returns on that underlying index (Bodie et al., 2018). While a REIT invests in physical assets, an ETF can own a variety of financial assets. In South Africa, there are various ETF's listed on the Johannesburg Stock Exchange (Bloomberg, 2019a). However, this paper only focuses on ETF's which own financial assets deriving their returns specifically from Investment Property.

Both REITs and ETF's provide investors with a liquid stake in Investment Property and enables investors to gain exposure to the asset without being forced to raise debt as these shares are traded on a formalized exchange (Yat, Keong, Chai, & Kwun, 2017). A REIT returns to its investor the profits of the company through dividends and long-term capital appreciation, being the growth in share price (Yat et al., 2017). Similarly, an ETF will return to shareholders the dividends received from the underlying financial assets and offer capital appreciation through increases in the component stock's price.

REIT's provide investors with certain benefits when compared to the real asset. Lowies et al. (2018) show that, historically, Investment Property real assets were seen as a relatively expensive asset class compared to alternatives such as stocks and fixed income securities. Investment Property Real Assets have become increasingly difficult to invest in, due to the owner-occupied nature of the investment.

Thus, the benefits of REIT's due to their nature as a financial asset include: greater liquidity (Carstens & Freybote, 2018), ease of international comparison leading to increased international investment (Gert et al., 2013), and various tax structures (Income Tax Act No. 58 of 1962, 1962). Furthermore, REIT's are seen as a return enhancer when added to a mixed-asset portfolio (Ntuli & Akinsomi, 2017) and remove the cashflow and debt repayment risk that exists with obtaining debt financing to purchase the underlying asset directly.

The South African listed property sector

The introduction of home ownership for black people in South Africa during the 1980s lead to an increase in mortgage financing for lower income households, which led to an increase in investment in Investment Property (Marais & Cloete, 2017). The residential property market is

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valued at R5.5 trillion with 6.6 million properties registered (Centre for Affordable Housing Finance in Africa, 2020).

The South African Investment Property landscape has developed over time and the drastic increase in demand for affordable housing has allowed those with the ability to invest in these assets, to benefit from the growing property market. (Ganiyu et al., 2017). South African GDP grew by an annualised rate of 4.6% during the first quarter of 2021, with increased economic output of 7.4% in the finance, real estate and business services industry being the largest contributor to this growth (Stats SA, 2021).

The literature shows that real and financial assets present different risk and return profiles based on their idiosyncratic characteristics. Although no similar study has been performed in the South African context, Dabara (2016) also investigated the investment performance of real estate against property financial assets in Nigeria and showed that investment in real assets provided a higher level of risk and return. Nigeria is similar to South Africa in that they are the top 2 largest economies in Africa (The World Bank, 2021) with a similar developing middle-income status.

The following hypothesis can thus be developed:

H_{1A}: The mean return for real assets is higher than that of financial assets
H_{1B}: The variance of the returns for real assets is higher than that of financial assets

METHODOLOGY

The literature review highlights the differences and similarities between investing in the real asset or the financial asset for Investment Property. However, further research is required to assess whether differences exist between the financial return in investment of either asset. This will aid in understanding the investor's choice when looking to include investment property in his/her multi-asset portfolio. The following research question is proposed:

Which asset pertaining to Investment Property yields a higher financial return, the real asset or the financial asset?

Research sample

Within the South African environment, there are many indices to choose that track the financial returns of residential property. Examples of such indices include those constructed by ABSA, FNB, the Federal Reserve Bank of Dallas, and Lightstone Properties. Information regarding how the latter two sources compile their information is not publicly available. However, global property guides refer to both the ABSA and FNB housing price index as potential indices to use when examining the South African Property market (Global Guide, 2019). These entities are two of South Africa's largest four banks (Nachum & Verachia, 2019) and thus play a big role in the financing of these residential properties. Furthermore, the FNB housing price index is reliable due to its use as an economic indicator by the Monetary Policy Committee (South

ISBN NUMBER: 978-0-620-92690-4

African Reserve Bank, 2021) which sets the South African REPO rate. Thus, the FNB housing price index has been selected for this study.

To represent the financial asset, two portfolios have been constructed using Bloomberg. The first portfolio consists of all financial assets within South Africa whose underlying returns are based on income producing Investment Property. The second portfolio consists of a particular subset of this financial asset class, being all REIT's in South Africa. The difference between these two portfolios is that the portfolio of REIT's is comprised only of South African REIT's, while the financial asset portfolio includes REIT's, ETF's, mutual funds and other financial assets. This inclusion will allow for a second set of financial asset data to be identified and compared to the real asset.

It is necessary to look at both sets of financial assets, as the REIT portfolio will help to determine whether or not the introduction of REIT's has changed the South African Listed Property market, as it did in so many other countries by providing alternative investments to other financial assets such as stocks and bonds (Kola & Kodongo, 2017). In addition, the inclusion of the second portfolio of all financial assets, will aid in understanding the true opportunity cost associated with the investment decision between Real and financial assets, and which financial asset has the greater opportunity cost.

While REITs were only introduced into South African Legislation through the Income Tax Act in 2013 (Gert, Boshoff, & Bredell, 2013), the companies were already in existence years earlier. Before 2013, these companies were known as a property loan stock company (PLS) or a property unit trust (PUT) (Carstens & Freybote, 2018). A PLS and PUT were types of mutual funds that invested in Investment Property. After 2013, the PLS and PUT were replaced by REITs. Thus, two time periods are assessed in this study. The first being a 6-year period, starting when REIT's were introduced in South Africa in March 2013. The second being the full 18-year period between January 2000 and March 2019, as this dates back to the beginning of the FNB housing price index (First National Bank Limited, 2021).

Data collection

The FNB housing price index is compiled using the change in house prices between two points in time (First National Bank Limited, 2021). FNB applies the Case-Shiller methodology, which is commonly used when compiling housing price indices (Gonzalez et al., 2021).

The monthly returns from each financial asset portfolio represents market-capitalisation weighted returns. Using market-capitalisation weighted returns gives the best representation of the proportion of assets held in the market (Paul, Kaplan & Dorothy, 2018), as companies with a larger proportion of the Investment Property market will have a higher weighting of returns. Therefore, this gives a realistic representation of the returns of the properties that they hold in the market and is superior to an equally-weighted portfolio which does not provide a realistic result of the underlying assets (Greco et al., 2019).

A market-capitalisation weighting is calculated by dividing the asset's market capitalisation by the total market capitalisation of all assets in the portfolio (Paul, Kaplan & Dorothy, 2018). Monthly market prices are then calculated within Bloomberg to create monthly returns for each

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of these portfolios. In calculating the monthly returns, each asset is rebalanced to its market-capitalisation weighting within the portfolio.

This means that each set of monthly portfolio returns represents the market-capitalisation weighted returns of each asset based on the market capitalisation at the beginning of that month. This ensures that all monthly returns maintain the initial purpose of using market-capitalisation weightings of returns to provide the most realistic representation of assets held in the market.

Data synthesis

Three-month rolling averages have been applied to the monthly returns for all three sets of return data, that being the FNB housing price index, the REIT portfolio, and the financial asset portfolio. The use of rolling averages smooths out any short term fluctuations in order to determine a distinct representation of the long term market trend (Barry & Robert, 2019).

As the data are analysed over a time period of both 6 and 18 years, monthly fluctuations may skew the results due to the volatility of the financial asset returns (Razavi & Vogel, 2018). Therefore, using three-month rolling averages removes the bias caused by short term volatility leading to data that is more comparable to the FNB housing price index. Property investors tend to invest in the asset for long time periods (Eichholtz et al., 2021). This further supports the removal any short-term volatility from the return calculations.

The monthly returns of all data represent the market prices of their respective assets. This is ultimately driven by supply and demand within the Investment Property market (First National Bank Limited, 2021), and is affected by multiple factors including: the rental and capital appreciation of the underlying asset, market sentiment, demographics of the population, interest rates and government policies (Wing & Li Rita, 2016). Thus, comparing the returns of market prices of both Real and financial assets further enforces the use of comparable data when answering the research question.

Research design

The aim of this study is to measure the performance of real assets against that of financial assets. When it comes to performance measurement from the perspective of the investor, the Sharpe ratio, introduced by Sharpe (Sharpe, 1966) is the most widely used tool (Benhamou & Guez, 2021).

The Sharpe ratio is advantageous because it measures the expected return of an asset per unit of risk taken up by the investor thus satisfying the classic Markowitz mean-variance framework (Guo & Ou-Yang, 2021). The key advantage of this set-up is that the Sharpe ratio is able to comparatively measure the performance of assets with different risks profiles (Amédée-Manesme & Barthélémy, 2020) which is appropriate for this study as Real and financial assets trade in different markets with different risk characteristics.

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An additional benefit of the Sharpe ratio is its understandability when trying to make a rational investment. The ratio can be defined as the rate which shows the additional return an investor will make for each additional unit of risk (Yang, 2021).

The Sharpe ratio therefore measures excess return per unit of risk using the following formula.

$$Sr = \frac{Ra - Rf}{\theta a}$$

[Formula 1]

Where Sr is the Sharpe ratio, Ra is the return of the asset, Rf is the risk-free rate, and θa is the standard deviation of the asset (Sharpe, 1966).

The Sharpe ratio is applied to all three sets of returns. This has been done on an individual basis to provide the excess return per unit of risk for each month for each asset class. This allows the paper to examine returns on a risk adjusted basis. A clear limitation of the Sharpe ratio is that it does not adjust for the leverage risk in these two asset classes, The excess return for the additional risk taken on is risk in the context of its volatility of returns.

Due to the central limit theorem, the sample mean is assumed to follow a normal distribution (DeFusco et al., 2018). In order to determine if the return from one asset class is higher than the other, a z-test will be employed as it is the most prominent test for statistical differences in the means of the sample two populations (Xu et al., 2017). An F-test will also be used to test the equality of the population variances (Stang & Kowall, 2020). The aim of this test is to assess whether there is a statistically significant difference in the variation of the monthly returns of each asset class.

The hypotheses for the z-test are as follows:

H_{1A}: The mean return for real assets is higher than that of financial assets

The hypotheses for the F-test are as follows:

H_{1B}: The variance of the returns for real assets is higher than that of financial assets

Both statistical tests are run twice for each sample period – first, over the full 18-year period from 2001 to 2019 and second, over a 6-year period from 1 March 2013.

Limitations

The capital structure of a REIT and the average debt ratios at which the houses are financed through FNB will differ. Therefore, these investments are not comparable in terms of risk. To overcome this, the returns of the assets need to be adjusted to allow comparability. Furthermore, there are notable limitations to the Sharpe ratio. Firstly, its standard deviation as a measure of risk assumes the investigated portfolio is the only investment of the investor. Secondly the Sharpe ratio is linear whereas the efficient frontier of all risky securities is a curve (Guo & Ou-Yang, 2021).

In terms of the methodology, the model only accounts for residential property as representative of the real asset as that is the real investment class individuals are most likely to own as

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opposed to commercial property (Fevurly, 2018). Secondly, only returns from price change in line with the FNB Housing Price Index are measured for residential property without accounting for rental costs and income. Despite these limitations, the results are still valuable as they provide insight into to the return characteristics of each asset class in the context of their individual risk profile.

RESULTS AND DISCUSSION

This section begins by presenting some descriptive statistics of the nominal and risk-adjusted returns for the different asset classes. Following that, the output of the statistical testing is presented and discussed.

Descriptive statistics

In Table 1, the mean, median, standard deviation, min and max returns are shown for each of the three assets of monthly returns for both the 6-year and 18-year periods. Two statistics are shown for each output – the first relates to the nominal returns for the asset during that period and the second (in parenthesis) relates to the risk-adjusted return for the same asset over the same period. While the risk-adjusted returns are the ones of interest for purposes of the statistical testing (as they remove the limitations of examining assets with different risk characteristics), the nominal returns are included in Table 1 as they are more intuitive for discussion purposes.

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Table 1: Descriptive statistics

	6 Years			18 Years		
	Real Asset	Financial Asset		Real Asset	Financial Asset	
	FNB Housing Price Index	REIT's	All Investment Property Financial Assets[12]	FNB Housing Price Index	REIT's	All Investment Property Financial Assets
Mean	0,004% (-4,60%)	0,007% (0,80%)	0,002% (-0,16%)	0,008% (-0,09%)	0,016% (1,45%)	0,012% (0,25%)
Median	0,004% (-0,40%)	0,006% (0,14%)	0,001% (-0,29%)	0,005% (0,55%)	0,017% (0,94%)	0,016% (0,52%)
Standard Deviation	0,002% (14,30%)	0,022% (3,67%)	0,032% (4,63%)	0,008% (18,07%)	0,027% (3,81%)	0,046% (3,70%)
Minimum	0,001% (-91,56%)	-0,058% (-4,75%)	-0,078% (-22,91%)	-0,011% (-176,25%)	-0,075% (-11,94%)	-0,109% (-25,39%)
Maximum	0,010% (10,24%)	0,050% (17,51%)	0,089% (19,48%)	0,030% (50,68%)	0,077% (21,09%)	0,138% (19,48%)
N	72	72	72	216	216	216

12 This asset class is inclusive of the Real Estate Investment Trusts and comprises all South African Financial Assets whose returns are derived from Investment Property.

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An analysis of the six-year period shows a distinct return profile for each of the three asset classes with the real asset having a mean negative risk-adjusted return of -4.60%, All Investment property almost breaking even at -0.16% and REITs being the only contributor of positive returns at 0.8%. Given the closeness of the nominal means of each variable, it is clear that the differences in these risk-adjusted returns is due to their idiosyncratic variances (Amédée-Manesme & Barthélémy, 2020).

As expected, the real asset has very high risk-adjusted standard deviation (14.3%) in comparison to that of REITs (3.67%) and All Investment Property (4.63%). A higher nominal return was expected from real assets given the higher risk attributable to them hence they returned a lower return per unit of risk assumed.

The 18-year period shows slightly increased volatility across all the asset classes and a commensurate increase in the mean and median nominal return. The order of risk-adjusted profitability is still the same with REITs performing best (1.45%), All Investment Property barely breaking even (0.25%) and the real asset still returning a loss, albeit a lower one given a higher nominal return compared to the six-year period.

Figurer 1 presents the cumulative nominal monthly returns of each of the three assets. The full 18-year period is shown with a differentiator to show the start of the 6-year period i.e., the date that REITs were introduced into South African legislation. Prior to 2013, companies which operated similar to REITs were known as property loan stock companies or property units trusts (Carstens & Freybote, 2018) and this analysis has been included.

Figure 1: Cumulative nominal returns of all assets

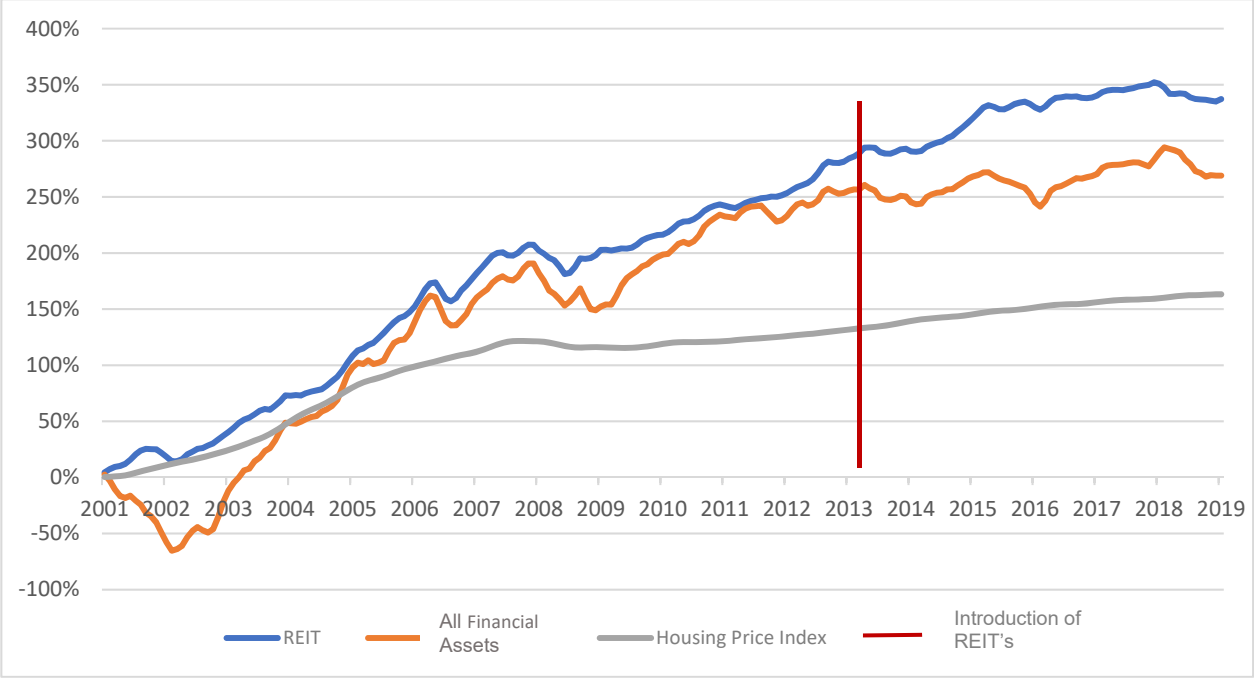

Figure 1 shows the cumulative impact of the higher average returns earned by REIT's. However, this impact appears to be more pronounced post the introduction of REITs on the 1st of March 2013 (previously referred to as PLS's and PUT's). This describes the tax consequences (De Klerk, 2019)

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and increase in international investment (Gert et al., 2013) that the REIT structure brought to the South African market.

Statistical output

Table 2 presents the output of both the z-test and F-test on the risk-adjusted returns. The testing is performed in two parts. First, the real asset is compared to REIT's. Following that, the real asset is compared to All Investment Property financial assets. This is done to provide the necessary information to answer the research question of this study, while assessing more than one variation of the financial asset class.

Table 2: Statistical tests adjusting for risk

Assets tested	6 Years			18 years		
	Mean	Z-Test	F-Test	Mean	Z-Test	F-Test
Housing Price Index	-4,60%			-0,09%		
vs		1,959**	0,637***		1,959	0,798***
All REITs	0,80%			1,45%		
Housing Price Index	-4,60%			-0,09%		
vs		1,959*	0,637***		1,959	0,798***
All Investment Property				0,25%		
Financial Assets	-0,16%					

$p < 0.05$*, $p < 0.01$**, $p < 0.001$***

Table 2 shows that for the 6-year period, both REITs and All financial assets have statistically significant higher risk adjusted returns than the real asset. For the 18-year period, the difference in the mean returns is not statistically significant at the 5% level thus the null hypothesis cannot be rejected.

Looking at the variance of returns, the real asset has statistically significant higher variances in return when compared to both REITs and All Investment Property financial assets over both time periods examined. The null hypotheses for the F-test are thus all rejected at the 1% level.

As a robustness check, the same tests are performed on the nominal returns of the same assets in Table 2. While the statistically significant differences in variances of return across all assets over both periods examined is the same, the returns of REITs are no longer statistically significantly higher than those of the real asset over the 6-year period, but rather, over the 18-year period. This indicates that since the introduction of REIT's, its return relative to its standard deviation over the period is higher than the Real whose returns are based on income producing Investment Property. This examination of returns on a risk adjusted basis, shows the conclusiveness of how the introduction of REITs in South Africa has changed the South African Investment Property market.

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The results suggest that the introduction of REIT's has shown that this legal structure has created an increase in returns compared to other financial assets whose returns are based on income producing Investment Property. This compliments the existing literature which states that the introduction of REIT's into a financial market leads to an increase in capital flows (Fevurly, 2018). There was particular interest in REIT investments after they were introduced in South Africa due to their alignment of international best-practice to the attractiveness of a developing economy (Gert et al., 2013). The low interest environment which existed after the 2008/2009 financial crisis and remained due to low growth also contributed to increasing yields of REITs as they make the dividends appear attractive relative to the interest payments from similar investments such as bonds (Kola & Kodongo, 2017).

A movement of investments from similar asset classes into REITs during this introductory period may thus be explanatory. This is evidenced by the growth in the market capitalisation of REITs when they were introduced from R205 million in 2013 to R400 million in 2016 (Carstens, 2018).

All Investment Property financial assets also performed outperformed the real asset and this could be attributable to the diversification benefits that come with accessible financial instruments which can be purchased in flexible quantities (Hala et al., 2020). Fevurly (2018) has argued that there is a low correlation between the price movements of REIT shares and that of a typical stock which is evident of these diversification benefits.

Furthermore, listed property investments display counter-cyclical properties which enable them to return attractive earnings when the core sectors that drive the economy are performing poorly (Kola & Kodongo, 2017). This would be particularly relevant for the South African economy which has seen lacklustre growth over the past decade (Stats SA, 2021).

The introduction of REIT's has made the South African Investment Property market more competitive on a global scale and led to increased foreign investment in this sector and continued demand for this asset class (Carstens & Freybote, 2018). This indicates that an understanding of how the REIT structure aligns with foreign investment preferences will enable policy makers to stimulate future investment (Carstens, 2018).

The relatively poor performance of the real asset may also be attributed to the impact of uncertainty on income, mortgage rates, and credit conditions on housing prices. Economic uncertainty such as that which has been experienced by South Africa over the past decade can have a negative impact on housing investment demand as people cannot reliably forecast their future income and the costs associated with the asset (Aye, 2018).

In answering the research question of this study, the results show that financial assets yield a higher financial return compared to real assets within the Investment Property class. Therefore, the opportunity cost associated with investing in the real asset is higher than the associated opportunity cost with investing in the financial asset.

The implications of these results should aid investors to better understand the opportunity cost associated with either-or investment. As the literature shows through the development of the South African Investment property market, investors are inclined to invest in the South African Investment Property market (Ganiyu et al., 2017) and the results of this study indicate that the least opportunity

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cost occurs when investment in this market is achieved through investing in financial assets. The same is true for foreign investors, where the literature shows that they prefer REIT's as a form of financial asset investment (Carstens, 2018).

CONCLUSION AND RECOMMENDATIONS

One of the key decisions faced by investors is whether to include the Real or the financial asset when including Investment Property in their multi-asset portfolio. It highlights the need to understand the opportunity cost associated with either decision (Boyadzhiev, 2020).

The results of this study show that financial assets provide higher mean returns before and after adjusting for risk. There are factors specific to the real residential property which contributed to its weak performance such a its correlation with GDP growth and how it is negatively affected by economic uncertainty (Hala et al., 2020; Kola & Kodongo, 2017). Perhaps more prominently, the introduction of REIT's has made the South African Investment Property market more competitive on a global scale and led to increased foreign investment in this sector and continued demand for this asset class (Carstens & Freybote, 2018).

Furthermore, the introduction of REITs as a legal structure, has made the South African Investment Property market more competitive on a global scale and led to increased foreign investment in this sector and continued demand for this financial asset class (Carstens & Freybote, 2018). This indicates that an understanding of how the REIT structure aligns with foreign investment preferences will enable policy makers to stimulate future investment (Carstens, 2018). This paper thus recommends continued research and implementation by policymakers of structures which will make the South African property sector competitive in the global market.

Areas of future research should include evaluating the profit differentials between local and global REIT's, to provide further insight into these investment decisions. Secondly, the Investment property class of assets should be examined in different local and global areas, to help determine which type of investment within a specific geographical location may be better from the perspective of a return on investment.

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

GAUTENG CENTRAL REGION

A Review of Biodiversity, Ecological and Extinction Reporting by 30 Top JSE Listed Companies

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ABSTRACT

There is growing scientific concern about biodiversity loss (arising from habitat destruction and extinction of species) and the implications of these issues on human well-being. The purpose of this study is to explore the extent and quality of biodiversity, ecological and extinction reporting by 30 Top JSE listed companies. A content analysis was used to collect data from the integrated reports of the sample companies for the 2019 and 2020 years. A comprehensive disclosure checklist was created and used to code disclosures using a 3-point scale. Statistical methods (descriptive, correlations and Kruskal-Wallis tests) were used to analyse the data. The findings show that, overall, disclosures are limited and often generic. The findings also showed that there is a relationship between the type of industry and the level of biodiversity, ecological and extinction reporting. With a significant difference in the level of scene-setting, species-related and performance evaluation reporting across industries. Interestingly, the study found some very detailed disclosures by companies with a smaller biodiversity impact. It is the first South African study to explore biodiversity, ecology and extinction elements concurrently, across a range of industries.

KEYWORDS: Biodiversity; disclosures; ecological; ecology; extinction; integrated report; South Africa

INTRODUCTION

In the past 50 years, there has been a greater loss of biodiversity than at any other time in human history (Convention on Biological Diversity (CBD), 2006; The Economics of Ecosystems and Biodiversity (TEEB), 2012). The CBD (2006) states that 15 of the 24 ecosystem services that contribute to human well-being are in decline. This has resulted in biodiversity loss being considered the fifth-highest global risk in likelihood (World Economic Forum, 2021). Biodiversity loss is also considered the fourth-highest global risk by impact (World Economic Forum, 2021), as the loss of biodiversity is a threat to the survival of the planet, economy, and the quality of human life (Jones, 2014; TEEB, 2008).

Biodiversity is essential for healthy ecosystem functioning (CBD, 2006). The services provided by ecosystems are critical for the survival of plant and animal species, genetic diversity, and human well-being (CBD, 2006; Global Reporting Initiative (GRI), 2016). Biodiversity also contributes to economic development as it is the foundation for economic activity and contributes directly to local livelihoods (GRI, 2016; Jones, 2014; Jones and Solomon, 2013). Organisations depend on ecosystem services as they provide key inputs for business operations (Earthwatch Institute, 2002; TEEB, 2012). Examples of inputs include natural resources such as water and wood for manufacturing, pollination for agricultural activities, plants and animals for food production and habitats themselves for tourism industries (Earthwatch Institute, 2002; TEEB, 2012). The loss of biodiversity creates risks to organisations affecting, *inter alia*, access to natural resources, access to capital markets and finance, relations with stakeholders and the sound functioning of supply chains (Grabsch et al., 2012).

Given the importance of biodiversity to both humankind and businesses, academics have been evaluating the extent and quality of biodiversity-related reporting (including extinction and ecology) by companies globally (Adler et al., 2018; Grabsch et al., 2012; Hassan et al., 2020; Mansoor & Maroun, 2016; Usher & Maroun, 2018; Van Liempd & Busch, 2013). This body of research has mainly focused on either biodiversity, ecological or extinction reporting by companies, with no prior research evaluating the reporting of all three components concurrently. Further, there has been limited prior research into the biodiversity, ecological and extinction reporting of JSE[1] listed companies (Mansoor & Maroun, 2016; Usher & Maroun, 2018).

Industries all have different ecosystem input requirements and impact biodiversity in different ways (Earthwatch Institute, 2002; F&C Asset Management, 2004). Prior studies have found that companies from high biodiversity risk industries have a higher level of biodiversity reporting (Adler et al., 2018; Hassan et al., 2020). Prior studies of JSE listed entities, however, focused on select industries[2] (Mansoor & Maroun, 2016; Usher & Maroun, 2018).

This research aims to address these gaps by exploring biodiversity, ecological, and extinction reporting based on information contained within the integrated reports of JSE listed companies in a range of industries. Using an interpretively developed disclosure checklist, the extent and quality

1 Johannesburg Securities Exchange.
2 Mining, food producers and seafood industries.

ISBN NUMBER: 978-0-620-92690-4

(*i.e*., level) of biodiversity, ecological and extinction disclosures was highlighted and coded. The results of applying this newly constructed disclosure framework are used to gain insight into current reporting practices and assess possible determinants of biodiversity, ecological and extinction reporting[3]. South African regulations, currently, do not require companies to report on biodiversity, ecological and extinction matters. The study, thus, provides a practical contribution by making the accountants aware of this specialised area of reporting and the current state of biodiversity, ecological and extinction reporting in South Africa.

The remainder of this paper is structured as follows: the paper defines "biodiversity" and "ecosystem", followed by a discussion of prior literature and reporting frameworks regarding biodiversity, ecological and extinction accounting. The intention is not to provide a detailed discussion of biodiversity, ecological and extinction accounting but rather to use the literature to construct a new disclosure framework to be used in the study. Thereafter, the paper will describe the methodology and present the results.

BACKGROUND, THEORY AND PRIOR RESEARCH

Biodiversity is broadly described as the variety of all living organisms on earth including the combination of diversity within species, their interactions with other diverse species and their interaction with ecosystems (CBD, 2006; National Research Council, 1999).

The Earthwatch Institute (2002) describes an 'ecosystem' as the integrated community of living organisms and their non-living environment. These integrated systems form the web of life on which all organisms, including humans, depend (CBD, 2006).

Biodiversity accounting

Reporting on an organisation's impact on biodiversity and its efforts to protect and restore biodiversity will raise stakeholder awareness around its importance and promote positive change (Adler et al., 2018; Grabsch et al., 2012; Jones & Solomon, 2013; Van Liempd & Busch, 2013). Gaia and Jones (2017) look at biodiversity reporting through the lens of stakeholder theory, stating that stakeholders who are aware of biodiversity issues will avoid actions that contribute to biodiversity loss and will attempt to conserve biodiversity. Informing stakeholders about the impact of their activities on biodiversity is necessary for the successful implementation of biodiversity conservation strategies (Gaia & Jones, 2017).

Organisations need to consider the various types of stakeholders and their interests, which would lead to the use of different communication approaches (Feger & Mermet, 2017; Gaia & Jones, 2017). There exist four approaches to reporting biodiversity, namely, (1) narratives about the organisation's management approach to biodiversity, (2) financial information to explain the financial implications of a biodiversity-related event, (3) disclosure of non-monetary information to explain how the

3 This paper uses 'accounting', 'reporting' and 'disclosing' interchangeably. Evaluating the differences between accounting for and reporting on the environment is deferred for future research.

ISBN NUMBER: 978-0-620-92690-4

organisation uses or impacts biodiversity or (4) the organisation uses information on natural capital externalities to show the external costs/benefits on society (Endangered Wildlife Trust, 2020).

Prior studies have focused on the extent of biodiversity reporting of companies in Britain and Germany (Grabsch et al., 2012), Denmark (Van Liempd & Busch, 2013), South Africa (Mansoor & Maroun, 2016; Usher & Maroun, 2018), Sweden (Rimmel and Jonäll, 2013) as well as top Fortune Global companies (Adler et al., 2018; Hassan et al., 2020). The studies found that biodiversity disclosures are limited, vague and do not enable stakeholders to assess the company's impact on biodiversity. To outline the level of non-reporting, Van Liempd and Busch (2013) found that more than 60 per cent of the companies did not report on biodiversity issues and almost 55 per cent not mentioning the word biodiversity or other related phrases.

Overall, findings showed that disclosures were biased, used to manage impressions (Grabsch et al., 2012) and focused on positive examples with limited negative impacts reported (Adler et al., 2018; Van Liempd & Busch, 2013). Companies disclosed information about scene-setting and social engagement the most with very few companies discussing biodiversity in terms of performance, risk and internal management (Grabsch et al., 2012; Mansoor & Maroun, 2016; Van Liempd & Busch, 2013). Prior studies also found that companies within industries with a high environmental impact are more likely to report on biodiversity issues (Adler et al., 2018; Grabsch et al., 2012; Hassan et al., 2020). Adler et al. (2018), interestingly, found that companies in low-impact industries reported more biodiversity disclosures than companies in medium-impact industries.

Ecological accounting

Cuckston (2017) provides an alternative approach to biodiversity accounting referred to as ecology-centred accounting. Ecology-centred accounting puts ecosystems at the centre while considering social factors to produce a socio-ecological system (Cuckston, 2017). It assigns an intrinsic value to biodiversity and considers the risks and opportunities of organisations to the ecosystem (Cuckston, 2017). This accounting approach aims to make this socio-ecosystem visible and understandable in ways that enable bringing biodiversity into decision-making to encourage behaviour that is conducive to conservation (Cuckston, 2017).

'Ecology' refers to the relationships of living organisms with each other and their environment (Oxford, 2019). It is believed that accounting for ecology will aid organisations with assessing and managing their interdependencies with ecosystems (Cuckston, 2017; Feger & Mermet, 2017). Ecological accounting is concerned specifically with the health of ecosystems within the broader theme of biodiversity accounting (Feger & Mermet, 2017). Biodiversity reports should include disclosures around the condition (health) of ecosystems affected by the organisation, flora and fauna essential for the healthy operation of the ecosystems, indigenous plants and animals which are no longer present and the presence of invasive species (Cuckston, 2017; Feger & Mermet, 2017). Habitats should also be ranked according to their ecological condition to provide an enhanced understanding of changes in biodiversity (Jones & Solomon, 2013).

ISBN NUMBER: 978-0-620-92690-4

Extinction accounting

Extinction accounting is described as organisations reporting on and evaluating the absence of species (Atkins & Maroun, 2018). Atkins and Maroun (2018) believe that extinction accounting is the natural successor of biodiversity reporting. This is based on the notion that extinction accounting goes beyond merely raising awareness through describing the state of biodiversity, but can also be used to prevent extinction (Atkins & Maroun, 2018). The rise of extinction accounting is an effort to show organisations and stakeholders the effects of their actions on species so that they can work together to conserve biodiversity (Atkins & Maroun, 2018). Extinction accounting aims to be more than just a disclosure exercise (Atkins & Maroun, 2018). It attempts to recognise the importance of the current extinction crisis through understanding the prevention of species loss in terms of the triple bottom line and having a genuine concern about biodiversity loss (Atkins & Maroun, 2018; Weir, 2018).

Atkins and Maroun (2018) developed a disclosure framework from existing reporting frameworks (GRI and Integrated Reporting (<IR>) Framework) that can be used to account for extinction. The framework incorporates a deprival value for species loss to show the impact on business so that profit organisations have an economic reason for preventing extinction. The framework uses a narrative approach with disclosures exceeding the minimum requirements of reporting frameworks, requiring the organisation to consider information as deep as the ecosystem level. The aim of the framework is for organisations to genuinely care about biodiversity loss, introduce extinction prevention plans and report more comprehensive information (Atkins & Maroun, 2018).

CURRENT REPORTING FRAMEWORKS AND DEVELOPING A DISCLOSURE CHECKLIST

Numerous organisations and frameworks have attempted to provide guidance on biodiversity reporting or incorporate biodiversity within existing frameworks (Adler et al., 2018; Association of Chartered Certified Accountants (ACCA), 2016; Ecoact, 2020; GRI, 2020; International Integrated Reporting Council (IIRC), 2021). The most significant organisations and frameworks include the GRI, the CDP[4], the <IR> framework, the United Nations (UN) Sustainable Development Goals (SDGs) and the European Union's Eco-Management and Audit Scheme (EMAS).[5]

The most comprehensive and recognised framework for understanding and communicating sustainability issues is issued by the GRI. The GRI has a biodiversity specific standard whereby it recommends that organisations report on four different biodiversity indicators (Table 1) (Adler et al., 2018; Rimmel & Jonäll, 2013).

4 Formerly the Carbon Disclosure Project.

5 The author acknowledges that ISO14000/14001 is also a significant framework. The author was, however, unable to obtain access to the framework for this study.

ISBN NUMBER: 978-0-620-92690-4

Table 1: GRI biodiversity indicators

Indicator	Explanation
GRI 304-1	Location and size of all land the organisation uses that has a high biodiversity value and is in/near protected areas.
GRI 304-2	Description of the impacts of business activities and products on biodiversity.
GRI 304-3	Habitats protected or restored by the organisation.
GRI 304-4	Number of International Union for Conservation of Nature (IUCN) Red List and conservation list species with habitats in areas affected by the organisation's operations.
Source: GRI (2020).	

The CDP is a non-profit organisation that collects, reports and discloses information on the environmental performance of organisations and cities (ACCA, 2016; Ecoact, 2020). The environmental performance is focused on greenhouse gas emissions, water security and forests (ACCA, 2016; Ecoact, 2020). The information is not specific to biodiversity, but forests and water security contribute to the sustainability of biodiversity and greenhouse gasses lead to a loss of biodiversity (ACCA, 2016; Jones & Solomon, 2013).

The <IR> Framework encourages organisations to produce integrated reports which explain how an organisation creates value over time (IIRC, 2021). Integrated reports have eight content elements[6] where information about an organisation is included in the context of different capitals (IIRC, 2021). These capitals include financial, manufactured, intellectual, social and relationship, human and natural capital (IIRC, 2021). While the <IR> Framework does not require an organisation to report on biodiversity, it does recommend that the organisation communicate how natural capital (which includes biodiversity) affects the value creation process (IIRC, 2021). An organisation would also need to consider how natural capital and, in particular, biodiversity loss affects the other capitals (Atkins & Maroun, 2018). Allowing organisations to incorporate risks relating to biodiversity loss into their business models and reporting frameworks (Atkins & Maroun, 2018).

Adams (2017) discusses the incorporation of the SDGs within integrated reporting, stating that the SDGs are linked to the <IR> Framework capitals. The SDGs are 17 sustainability goals (each with its own sets of targets) that organisations can use to align their strategies to the UN Global Compact sustainability principles (Ecoact, 2020). Two of the goals address biodiversity loss, but they do not provide reporting indicators (Figure 1).

EMAS is an environmental management system based on third party verification which explicitly requires reporting of biodiversity indicators (Lake Constance Foundation (LCF) and Global Nature Fund (GNF), 2016). The objective of EMAS is to promote continuous improvement in the

6 Organisational overview and external environment, governance, business model, risks and opportunities, strategy and resource allocation, performance, outlook and basis of preparation and presentation.

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environmental performance of organisations through using environmental management systems and reporting of environmental performance (LCF and GNF, 2016). LCF and GNF (2016) provide indicators to assist organisations with reporting biodiversity information related to (1) strategy and management, (2) business premises and property, (3) purchasing and supply chains, (4) raw materials, (5) product development, (6) transport and logistics, (7) marketing and communication, (8) involvement of stakeholders and (9) legal compliance.

Figure 1: SDG 14 and 15

Extracted from https://www.un.org/sustainabledevelopment/biodiversity/

Development of a disclosure checklist

Following the approach used by Grabsch et al. (2012), Van Liempd and Busch (2013) and Adler et al. (2018), a holistic view of biodiversity is adopted to analyse biodiversity, ecological and extinction reporting. Biodiversity, ecological and extinction reporting, thus, includes mentions of ecology, habitats, ecosystems, ecological systems, ecosystem services, conservation, protection, restoration, and information on species.

This paper incorporates the disclosure themes developed by Grabsch et al. (2012): (1) scene-setting, (2) species related, (3) social engagement, (4) performance evaluation, (5) risk, (6) internal management and (7) external reports. The Grabsch et al. (2012) themes serve as the base for the disclosure checklist. Thereafter, an adapted framework was interpretively constructed using categories and elements grounded in prior literature and policy framework (Table 2).

Scene-setting refers to the organisation's definition of biodiversity and how they introduce reporting on biodiversity (Grabsch et al., 2012; Mansoor & Maroun, 2016). Species related include the number and type of species and efforts to conserve those species (Mansoor & Maroun, 2016; Van Liempd & Busch, 2013). Social engagements include partnerships with NGO's, universities or government (Grabsch et al., 2012). It also includes engagements with stakeholders on biodiversity matters (Mansoor & Maroun, 2016). Performance evaluation encompasses the biodiversity targets set by organisations, the evaluation of their performance towards those targets and the costs associated with these targets (Grabsch et al., 2012; Mansoor & Maroun, 2016; Van Liempd & Busch, 2013). Organisations should also report on the biodiversity risks and their assessment of these risks

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(Grabsch et al., 2012; Van Liempd & Busch, 2013). Internal management refers to internal structures (which ensure that action plans are successful) and the value creation process (Grabsch et al., 2012; Van Liempd & Busch, 2013). External reports refer to whether the organisation reports biodiversity with regard to an accepted reporting framework (Grabsch et al., 2012).

Table 2: Disclosure checklist

Scene-setting		
Definition	• The company defines biodiversity and its components.	• (Grabsch et al., 2012)
Mission statement	• Reporting of any biodiversity-related mission statement. • Existence of a biodiversity policy statement.	• (Grabsch et al., 2012) • (CBD, 2018)
Motivation	• Mention of the World Economic Forum's ranking of biodiversity risk. • The company provides moral or ethical motivation to work with protecting biodiversity, protecting species and preventing extinction. • The company states why protecting biodiversity important for the company and its stakeholders. • CEO/Chairperson letter refers to biodiversity.	• (World Economic Forum, 2021) • (Van Liempd & Busch, 2013) • (CBD, 2018)
Species related		
Site-specific	• Reporting of biodiversity information relating to specific sites. • The company discloses specific habitats/ecosystems (land, marine, wetlands, rivers, etc.) affected.	• (GRI, 2020) • (Adler et al., 2018)
Specific species	• The company provides information about specific species affected at the sites where the company operates. • The company reports on potential risks/impacts on these specific species arising from the company's operations. • The company reports flora and faunal wealth around its operating area. • The company discloses which species are native or indigenous. • Company reports regular assessments of species populations in areas affected by corporate operations.	• (Van Liempd & Busch, 2013) • (Atkins & Maroun, 2018) • (Adler et al., 2018)
IUCN Red list	• Mention of the IUCN Red List. • The company provides a list of endangered plant and animal species whose habitats are affected by the company's activities. • Incorporates images (photos or drawings) of threatened species. • The company reports biodiversity or species loss due to its operations. • Company reports operations with activities in IUCN protected areas.	• (Grabsch et al., 2012) • (GRI, 2020) • (Atkins & Maroun, 2018) • (Adler et al., 2018)

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Surveys	• The company has included references to CDP questionnaires. • Reporting of biodiversity assessments/ surveys conducted.	• (ACCA, 2016) • (Adler et al., 2018)
Social engagement		
Partnerships	• Disclosures of partnerships with biodiversity organisations or NGOs helping with biodiversity conservation. • Company reports details of partnership engagements between wildlife/nature/ conservation organisations and the company which aim to address corporate impacts on endangered species. • Disclosures of which NGOs are working on biodiversity conservation in the areas where the company operates. • The company provided a donation that contributed to the conservation or protection of biodiversity. • The company participates in biodiversity associations to improve biodiversity practices in the community. • Collaborations with key advisors across professions and progress with ecologists, scientists, humanities scholars and other experts.	• (Adler et al., 2018) • (Atkins & Maroun, 2018) • (Van Liempd & Busch, 2013)
Awards	• The company discloses awards or recognition received for biodiversity conservation or restoration.	• (Grabsch et al., 2012)
Stakeholder engagements	• The company reports its steps taken for creating biodiversity awareness among its employees or in the community. • Company reports on the provision of education/training delivered on extinction accounting to all employees. • Information provided about social media interaction regarding biodiversity. • Disclosures of the feedback from stakeholders on biodiversity issues within the company. • The company discusses the relationship between local communities and biodiversity at the sites where the company operates. • Specific examples of stakeholder engagement are provided. • Provide education on extinction initiatives to schools in future. • Update shareholders/stakeholders quarterly with progress and future actions.	• (Adler et al., 2018) • (Hassan et al., 2020) • (Usher & Maroun, 2018) • (Grabsch et al., 2012) • (Van Liempd & Busch, 2013) • (CBD, 2018) • (Atkins & Maroun, 2018)
Performance evaluation		
Targets	• The company discloses biodiversity goals/targets for years to come.	• (Adler et al., 2018)

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	• The company describes current biodiversity goals. • Reference to UN SDG 14 or 15 and respective targets. • Reference to CBD post-2020 framework goals. • Report strategy for the future development and improvement of actions/initiatives.	• (Grabsch et al., 2012) • (Adams, 2017)
Performance	• Discussion of biodiversity-related performance and achievement of targets. • The company provides assessment and reflection on the outcome of partnerships and decisions taken about changes to initiatives going forward. • The company assesses whether the company's actions are effective in conserving biodiversity and preventing extinction • Pictorial evidence of successful conservation is provided.	• (Grabsch et al., 2012) • (Atkins & Maroun, 2018)
Costs	• The company reports the amount spent on biodiversity conservation/ restoration. • The company discloses details and the value of any fines or claims relating to biodiversity loss or damage. • The company reports the potential liabilities relating to future possible fines/claims. • Include a discussion of ways in which the company is working to prevent future liabilities related to harming endangered species	• (Grabsch et al., 2012) • (Atkins & Maroun, 2018)
Risk		
Risk	• The company reports and assesses biodiversity risk. • The company describes business opportunities created by biodiversity. • The company uses tools to measure both positive and negative impacts of biodiversity. • The company identifies which areas require biodiversity action plans.	• (Grabsch et al., 2012) • (Van Liempd & Busch, 2013) • (CBD, 2018)
Risk management	• The company provides information relating to systems/processes developed to manage or mitigate biodiversity risk. • The company has researched methods to reduce its impact on biodiversity. • The company discloses the use of ecosystem services assessment tools such as InVEST.	• (Grabsch et al., 2012) • (Usher & Maroun, 2018) • (Feger & Mermet, 2017)
Incidents	• The company reported any specific incidents/accidents which impacted biodiversity. • Company provides pictorial evidence of incidents. • The company outlines a plan for the rehabilitation and restoration of areas affected by the incidents.	• (Grabsch et al., 2012) • (Atkins & Maroun, 2018) • (Van Liempd & Busch, 2013)

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Materiality	• The company classifies biodiversity as a material risk for the company. • The company provides materiality assessments on biodiversity issues	• (IIRC, 2021) • (Van Liempd & Busch, 2013)
Internal management		
Biodiversity action plans	• The company discloses information relating to biodiversity action plans. • The company reports biodiversity in top-level management plans and details management's approach to biodiversity. • The company provides details of land management or rehabilitation activities. • The company reports biodiversity projects undertaken to enhance biodiversity in and around the areas of operation. • The company provides details about its involvement in afforestation activities. • Company reports its involvement in the protection/ conservation of "Ecological corridors" in and around areas of operation.	• (Grabsch et al., 2012) • (CBD, 2018) • (Adler et al., 2018) • (GRI, 2020)
Biodiversity officer	• A biodiversity officer is identified, and his responsibilities are outlined. • The company identifies to whom the biodiversity officer reports.	• (Grabsch et al., 2012) • (Van Liempd & Busch, 2013)
Products and value-chain	• Disclosures around the impact of the company's products and activities on biodiversity. • Information about whether the company's processes contribute to the mitigation, restoration or improvement of biodiversity. • The company details the importance of biodiversity as a natural capital in the value creation process. • Description of how natural capital and biodiversity loss affects the other capitals.	• (GRI, 2020) • (Van Liempd & Busch, 2013) • (IIRC, 2021) • (Atkins & Maroun, 2018)
External reports		
GRI, <IR> and other frameworks	• The company reports on international conventions for biodiversity conservation and restoration. • Reference to GRI reporting, IIRC framework or other relevant frameworks. • The company mentions that the Integrated Report is printed on recycled/ sustainably sourced paper	• (Adler et al., 2018) • (Grabsch et al., 2012)

Source: Author's construction

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METHOD

The study is grounded in an interpretive approach to collecting and analysing data (Baker and Bettner, 1997). A mixed-methods approach is adopted according to a two-stage process to assess the level of biodiversity, ecological, and extinction reporting by South African companies. The first stage includes qualitative content analysis to evaluate what companies disclose in their integrated reports and to gauge the level of biodiversity, ecological and extinction reporting. The second stage involves using quantitative methods to test for associations between identified determinants and the levels of biodiversity, ecological and extinction reporting.

Sample

This study selected a sample of 30[7] public companies listed on the JSE, across multiple industries[8]. The sample was selected using a haphazard selection from the Top 50 JSE listed companies (by market capitalisation). Public companies were selected as (1) they have a great public interest, (2) there is a growing stakeholder awareness of the impact these organisations have on the environment in which they operate and (3) they are known for reporting corporate social responsibility activities (Adler et al., 2018; Hassan et al., 2020; Rimmel & Jonäll, 2013). The study examined the primary reports issued to stakeholders over the 2019 and 2020 years. Separate sustainability reports, interim results, investor presentations and companies' webpages will not be included in the analysis[9]. Listed companies were used in this study to control for the possibility that a lack of resources or technical expertise, lack of financial analyst following or a lack of experience in applying the <IR> Framework may impact the report quality (IIRC, 2021; Malola & Maroun, 2019). There are no ethical considerations as the data is obtained from publicly available reports so is not confidential or sensitive in nature.

The relatively small sample is consistent with the fact that the objective of this study is not to extrapolate findings but to explore the level of biodiversity, ecological and extinction reporting in integrated reports of South African listed entities for a defined period. It is also comparable to similar studies (Adler et al., 2018; Grabsch et al., 2012; Hassan et al., 2020; Mansoor & Maroun, 2016; Usher & Maroun, 2018;Van Liempd & Busch, 2013).

Data collection and analysis

Following a similar approach as prior studies (Adler et al., 2018; Grabsch et al., 2012; Hassan et al., 2020; Mansoor & Maroun, 2016; Usher & Maroun, 2018) thematic content analysis was used to collect data. Content analysis was used due to its suitability for dealing with material that is not consistently formatted while highlighting trends and investigating both text and graphic disclosures (Krippendorff, 2013).

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7 The intention is to expand the sample size in a later study.

8 The industries are Technology, Telecommunications, Health Care, Financials, Real Estate, Consumer Discretionary, Consumer Staples, Industrials, Basic Materials and Energy.

9 Integrated reports are the main form of communication with stakeholders (IIRC, 2021) and other forms of information might not represent a true reflection of the company's biodiversity views (Guthrie & Parker, 1989).

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Each report for each entity and financial year under review was broken down into key sections based on their tables of content to gain a sense of its content and structure (Malola & Maroun, 2019). Each section was further disaggregated into individual paragraphs which served as the unit of analysis to avoid overlooking context and misinterpreting content. Any identified disclosures were coded and grouped according to the indicators outlined in the newly constructed disclosure checklist. To ensure the complete collection of biodiversity, ecological and extinction related disclosures, keywords[10] were searched to identify all disclosures. These keywords are informed by prior literature and developed during the coding of data (Adler et al., 2018; Hassan et al., 2020; Mansoor & Maroun, 2016).

The identified disclosures were classified and scored according to the 76-item disclosure checklist that was constructed. All 76 items have a score threshold of 0 to 3, resulting in a total potential score of 228 (76 x 3) per company per year. Repeated disclosures are counted and scored each time they appear. The total score, however, adjusts for repeated disclosures by only taking the highest score per item on the disclosure checklist. The scoring was adapted from Adler et al. (2018) and Hassan et al. (2020):

> 'A score of "0" was awarded for no disclosure at all. A score of "1" was awarded when the disclosure relating to a particular item was minimal, vague, and/or completely general. A score of "2" was awarded when disclosures contained objective, verifiable, and current data. A score of "3" was awarded when disclosure included all the ingredients of code "2," as well as providing specific information identifying the site/operating facility, affected species, and/or number of affected flora/fauna; a description of specific measures taken and/or amount of money spent; a discussion of trend information; and/or a linking of the data presented to a company strategy, aim performance measure, target, incident, or accident.'

An example of a disclosure that was scored a "1" is:

> 'Our key environmental focus areas include … biodiversity and disclosure … we aim to understand our impact, create awareness and influence the right behaviours among our suppliers, employees and tenant base' (Redefine's Integrated Report, 2020:117).

The following example was scored a "2":

> 'Manage 83,402 hectares of land and 2,500 hectares are set aside for biodiversity offsets. Integrate mine closure planning with land rehabilitation, promoting biodiversity and conservation, and using our non-operational land to benefit the mine and surrounding communities' (Kumba Iron Ore's Integrated Report, 2020:133).

An example of a score "3" disclosure is:

> 'We've been working with the Institute of Biology at Komi Science Centre to assess the long-term impacts of our mill on the biodiversity of the surrounding area. The assessment covered 20 years of results … on the ecological status of terrestrial and freshwater ecosystems… we will identify rare plant, lichen and animal species and habitats in the areas for assessment and monitoring… We will also develop a biodiversity database and maps of sensitive habitats and species' (Mondi's Integrated report, 2020:64).

10 The primary words are: "Extinct," "Protection," "Wildlife," Habitat," "Species," "Biodiversity," "Forest," "Ecosystem," "Flora," "Fauna," "Endangered," "Threatened," "Vulnerable," "Rehabilitation," "Conservation," "Marine," "Ecology," "SDG," "Ocean," and "IUCN."

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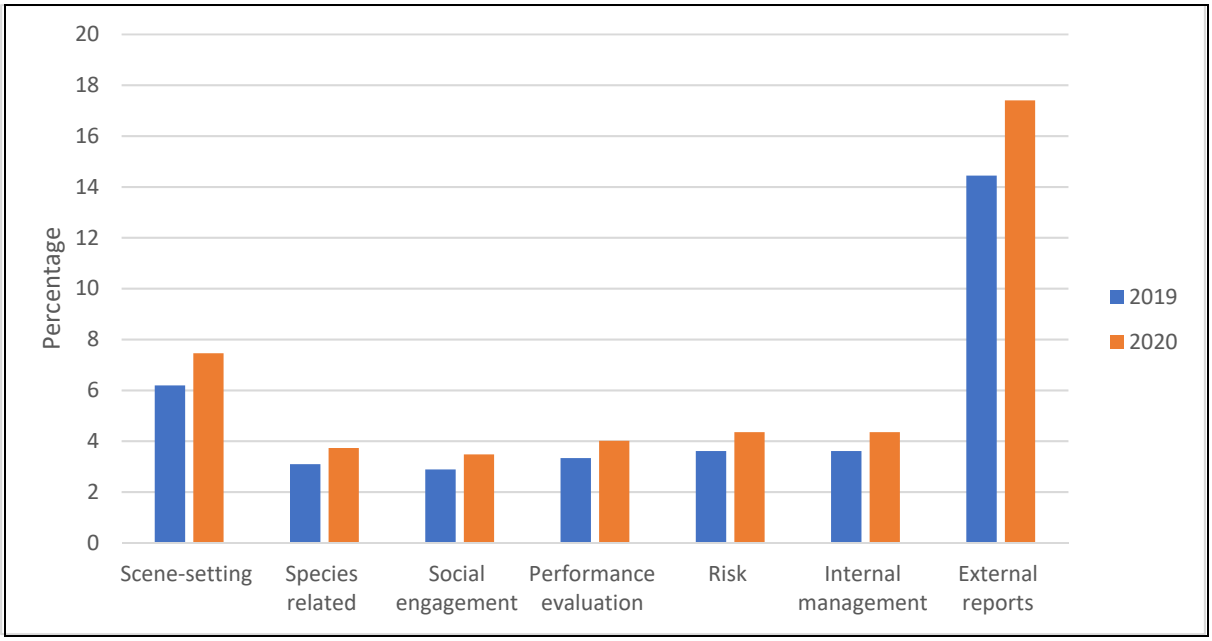
Once the coding was done, the disclosures were categorised according to each disclosure theme and subsequently analysed for trends or patterns using descriptive statistics and graphical plots (Samkin et al., 2014). Given the exploratory nature of the study, descriptive statistics is the main source of analysis. The data is not expected to be normally distributed so non-parametric tests are used to provide additional insights. Correlation tests were performed to evaluate if there exist any correlations with industry type. A Kruskal-Wallis H test was also used to evaluate the differences in the disclosure themes (using industry as a grouping variable). Using a similar approach as Adler et al. (2018), specific examples of disclosures are provided to further illustrate how biodiversity, ecological and extinction reporting is operationalised by the sample companies.

RESULTS

Figure 2: Percentage of total possible disclosure score per theme



The total biodiversity, ecological and extinction disclosure score as a percentage of the total possible score per theme is presented in Figure 2. In total, there was a disclosure score of 741 in 2020 compared to 703 in 2019. The total possible score, for all 30 companies, per year was 6840. The external reports theme had the highest possible score percentage (14 per cent) in 2019 followed by scene-setting (6 per cent). All other themes had a disclosure score between 3 and 5 per cent of the total possible score. 2020 yielded similar results, external reports remained the highest (17 per cent) followed by scene-setting (7 per cent) and the rest remained between 3 and 5 per cent. The total possible score percentage did, however, increase for all themes from 2019 to 2020.

Results are consistent with prior studies which found that performance evaluation and internal management were amongst the least reported with scene-setting being amongst the most reported (Grabsch et al., 2012; Mansoor & Maroun, 2016; Van Liempd & Busch, 2013). The results also found that the disclosures for internal management and performance evaluation were biased and focused

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mainly on positive examples[11]. This is consistent with prior studies and suggests that disclosures are used to manage impressions and legitimise the company (Adler et al., 2018; Grabsch et al., 2012; Van Liempd & Busch, 2013).

Table 3: Descriptive statistics

2019

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
Scene-setting	30	0	5	1.30	1.466
Species related	30	0	13	2.00	3.206
Social engagement	30	0	23	4.10	6.053
Performance evaluation	30	0	18	5.13	4.208
Risk	30	0	20	3.80	5.047
Internal management	30	0	16	5.03	4.098
External reports	30	0	6	2.07	1.388
Valid N (listwise)	30				

a. Year = 2019

2020

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
Scene-setting	30	0	12	1.57	2.775
Species related	30	0	8	1.77	2.161
Social engagement	30	0	21	3.50	5.151
Performance evaluation	30	0	16	5.83	4.348
Risk	30	0	21	4.40	5.481
Internal management	30	0	19	5.40	5.164
External reports	30	0	6	2.23	1.478
Valid N (listwise)	30				

a. Year = 2020

The descriptive statistics in Table 3 show that the average score increased for scene-setting, performance evaluation, risk, internal management and external reports from 2019 to 2020. The mean score for both species-related and social engagements decreased from 2019 to 2020. This might be explained by the impact of Covid-19 on businesses. Covid-19 may have limited the impact companies had on habitats and species due to lockdowns (species-related) and could have made stakeholder engagement and working with NGOs harder (social engagement). Social engagements did, however, offer the highest score for a single company compared to all the other disclosure themes.

11 Only 2 of the 30 companies provided a disclosure on incidents/accidents that negatively impacted biodiversity.

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Overall, the disclosures were poor as all the themes had at least one company that did not disclose anything for the respective disclosure items in the theme. The results are consistent with the prior studies performed which found the level of biodiversity, ecological and extinction reporting to be poor (Adler et al., 2018; Grabsch et al., 2012; Hassan et al., 2020; Mansoor & Maroun, 2016; Rimmel & Jonäll, 2013; Usher & Maroun, 2018; Van Liempd & Busch, 2013).

Figure 3: Disclosure score per company

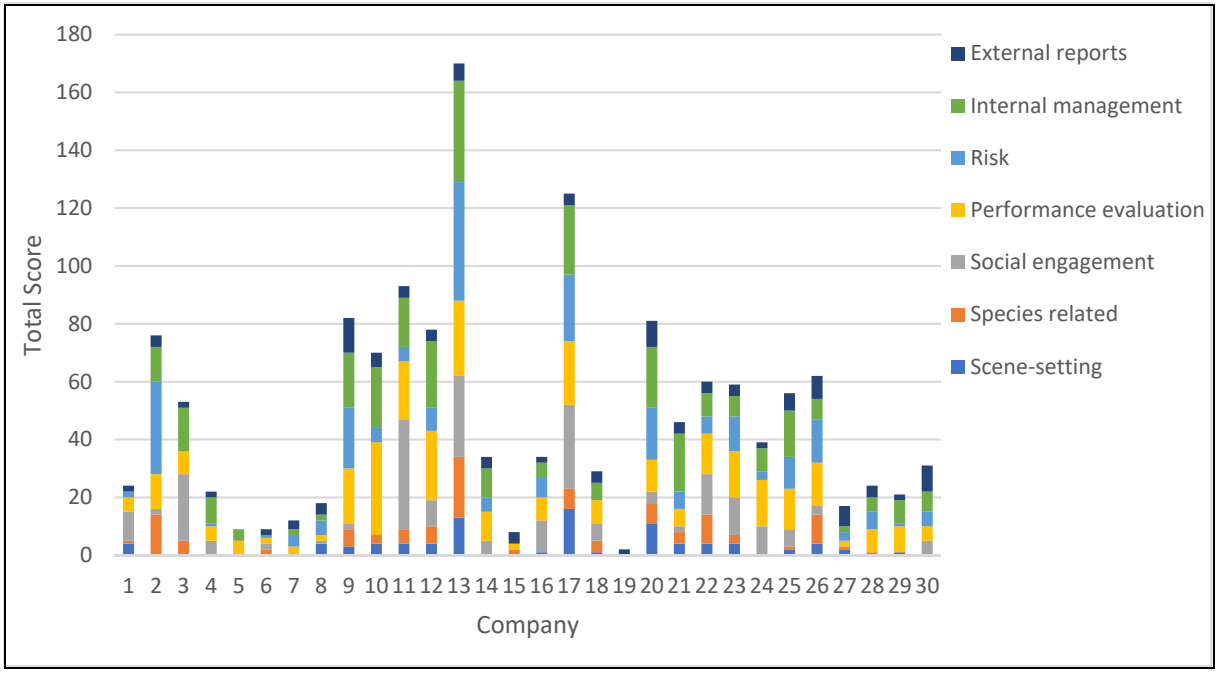

Figure 3 shows that company 13 has the highest disclosure score followed by company 17 and company 11. Amongst the lowest scoring were company 19, company 15, company 5 and company 6. Overall, the biodiversity, ecological and extinction reporting was poor considering the highest a company could score was 456 over the two years. Figure 3 also shows that the disclosure themes with the highest scores per company are internal management, performance evaluation and risk. Social engagements also contributed significantly to the overall score of the companies that included disclosures on social engagements (see also Table 3). An example of an internal management disclosure is:

> 'Follow the Bidfood Bee continues to create a buzz amongst schools and employees, as we promote the importance of our valuable pollinators … depots support local bee keepers across the country by regularly donating sugar to keep their bees thriving, creating bee-friendly gardens at the depots, as well as sponsoring or hosting local bee hives' (Bidcorp's Annual Integrated Report, 2019:41).

An example of a performance evaluation disclosure is:

> '…we support the charity, Trees for Cities, that engages local schools and communities to plant trees and shrubs, …, reconnecting urban areas with nature. In the past year our staff volunteered more than 1 300 hours to plant trees… 1 500 trees planted by staff in the UK (2019: >2 500)' (Investec's Annual Report, 2020, Vol 1:169).

An example of a risk disclosure is:

> 'The soil contamination risk at the Boxtel site has been reassessed by an independent expert during the year with a significant reduction in the risk being the outcome. Minor remediation

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activities will be performed over the next year to address the residual risk remaining' (Aspen's Integrated Report, 2019:86).

Figure 4: Quantity of disclosures vs total score

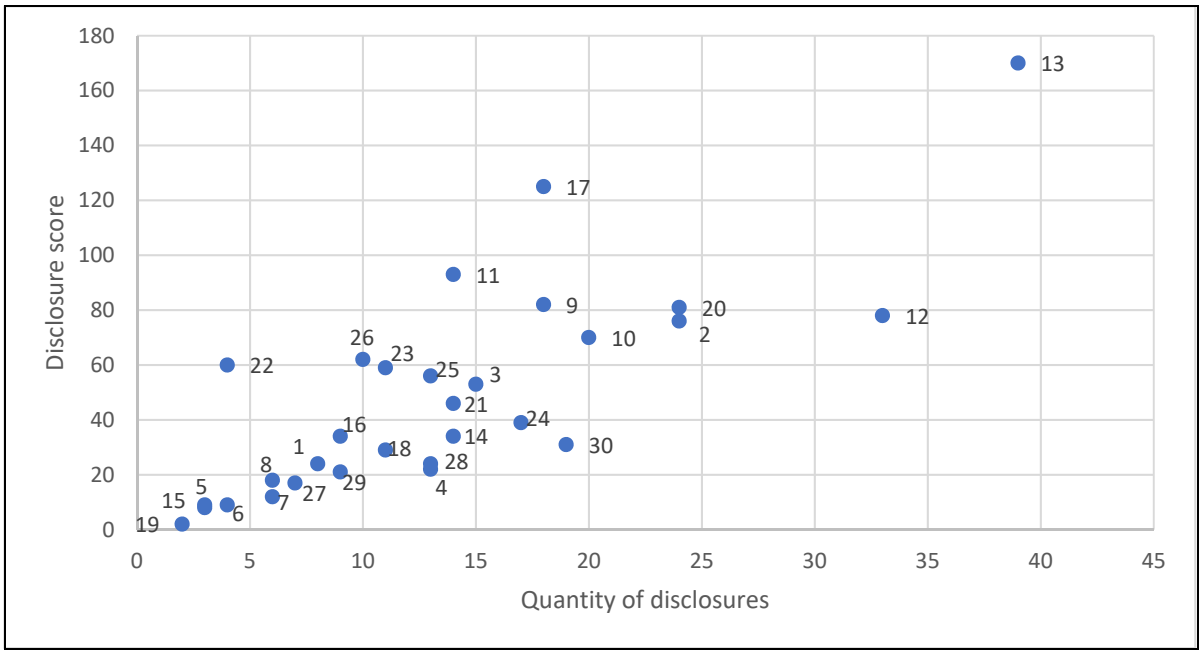

Figure 4 shows the total disclosure score compared to the number of disclosures. These results complement Figure 3. Company 12 has the second-highest number of disclosures but ranks sixth behind companies 13, 17, 11, 9 and 20 in terms of the total score, despite them having fewer disclosures (except for company 13). This suggests that those other companies have more detailed disclosures, thus a higher score. An example of a detailed disclosure from company 17 that was scored "3" is:

> '… our survival as a species depends absolutely on the healthy and proper functioning of the world's natural systems … this dependence on the natural systems we take so for granted, and abuse so easily, must be the most important and valuable … the decimation of earth's natural resources and biodiversity are no different. These are not 'environmental problems', they are human problems. As such, they require humans to be the solution. Our relentless consumption of the natural world is destroying the conditions that make human progress and the benefits of advanced civilisation possible' (Nedbank's Integrated Report, 2020:41).

Companies 13, 17 and 20 were the only companies that explained why biodiversity is important for business and human survival. These companies understanding the importance of biodiversity and the need to preserve and conserve biodiversity would explain why they are higher scoring companies. They achieve the idea set out by Atkins and Maroun (2018) by actively taking steps to reduce their impact on biodiversity and not treating reporting on biodiversity as merely a disclosure exercise. In contrast, certain companies did have vague and generic disclosures, often repeating the same disclosure from 2019 to 2020. An example of a generic disclosure that was repeated is:

> 'Remgro recognises that many of its investments are dependent on a healthy and functioning ecosystem and that this system is increasingly under pressure from a quantity and quality perspective. Hence, Remgro continuously analyses its impact on the environment, its response to changing environmental realities and the pursuit of new opportunities that might arise as a result of responsible environmental management' (Remgro's Integrated Report, 2019:68, 2020:67).

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Figure 5 (below) shows that the basic materials and real estate industries[12] have the highest average number of disclosures per year (12) and the highest average total score per year (46 and 41 respectively)[13]. These findings are consistent with prior studies that high-impact industries have a greater extent of biodiversity reporting (Adler et al., 2018; Rimmel & Jonäll, 2013). This study provided inconclusive evidence regarding the reporting by low-impact industries. The financials industry outperformed some medium-impact industries (energy, consumer discretionary and consumer staples). Other low-impact industries (industrials and telecommunications), however, had a lower level of biodiversity, ecological and extinction reporting compared to medium-impact industries.[14]

Figure 5: Average per industry per year

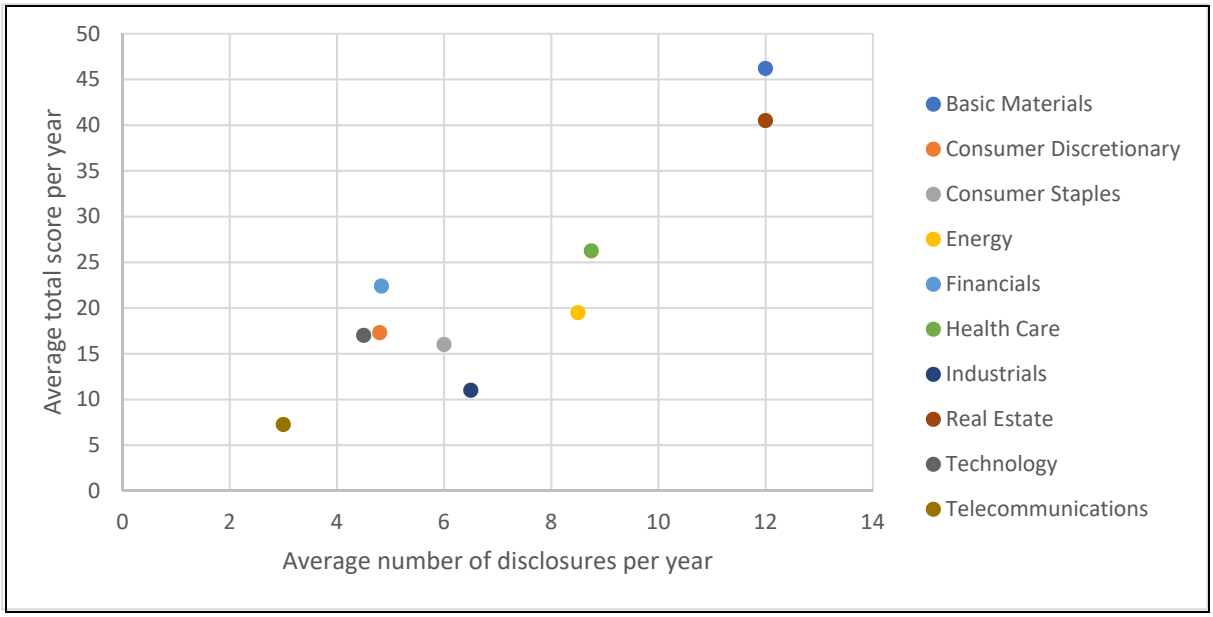

Figure 5 suggests that there is a correlation between the industry type, the number of disclosures and the total disclosure score. This is confirmed by the results in Table 4 below. Number of disclosures and industry type have a weak positive correlation ($r = 0.393$; $p<0.01$). Total disclosure score and industry type also have a weak positive correlation ($r = 0.290$) but is significant at the 5% level. Total disclosure score does have a strong positive correlation to the number of disclosures ($r = 0.777$; $p<0.01$). The total disclosure score and number of disclosures does not have a perfect correlation for two reasons. Firstly, companies provide many vague and generic disclosures, resulting in a relatively low overall score. Secondly, companies provide many repeat disclosures, which are all counted but only the highest score per disclosure element (Table 2) is used towards the total score.

12 These are both high biodiversity impact industries (F&C Asset Management, 2004).

13 The average per year was obtained using the combined data for 2019 and 2020.

14 The author acknowledges that this might be explained by differences in macro-economic environments of countries used in prior studies.

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Table 4: Correlations with industry type

	Number of disclosures	Total Score	Industry
Number of disclosures	1.000	.777**	.439**
Total Score	.782**	1.000	.311*
Industry	.393**	.290*	1.000
Pearson correlations are reported above the diagonal. Spearman's rho correlations are reported below the diagonal. ** significant at the 0.01 level; * significant at the 0.05 level			

Table 5: Results from Kruskal Wallis test grouped by industry

Test Statistics[a,b]

	Scene Setting	Species Related	Social Engagement	Performance Evaluation	Risk	Internal Management	External Reports	Total Score
Kruskal-Wallis H	30.042	21.860	6.556	24.767	18.603	16.334	21.228	21.423
df	9	9	9	9	9	9	9	9
Asymp. Sig.	.000	.009	.683	.003	.029	.060	.012	.011

a. Kruskal Wallis Test

b. Grouping Variable: Industry

Table 5 provides evidence that there are no statistical differences for social engagement and internal management when grouped by industry ($p>0.05$). Risk, external reports and total score are all statistically significant at the 5% level. The results show that there are significant differences for scene-setting ($H= 30.042$; $p<0.01$), species-related ($H= 21.860$; $p<0.01$) and performance evaluation ($H= 24.767$; $p<0.01$) at the 1% level when grouped by industry.

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Figure 6: Location of disclosures

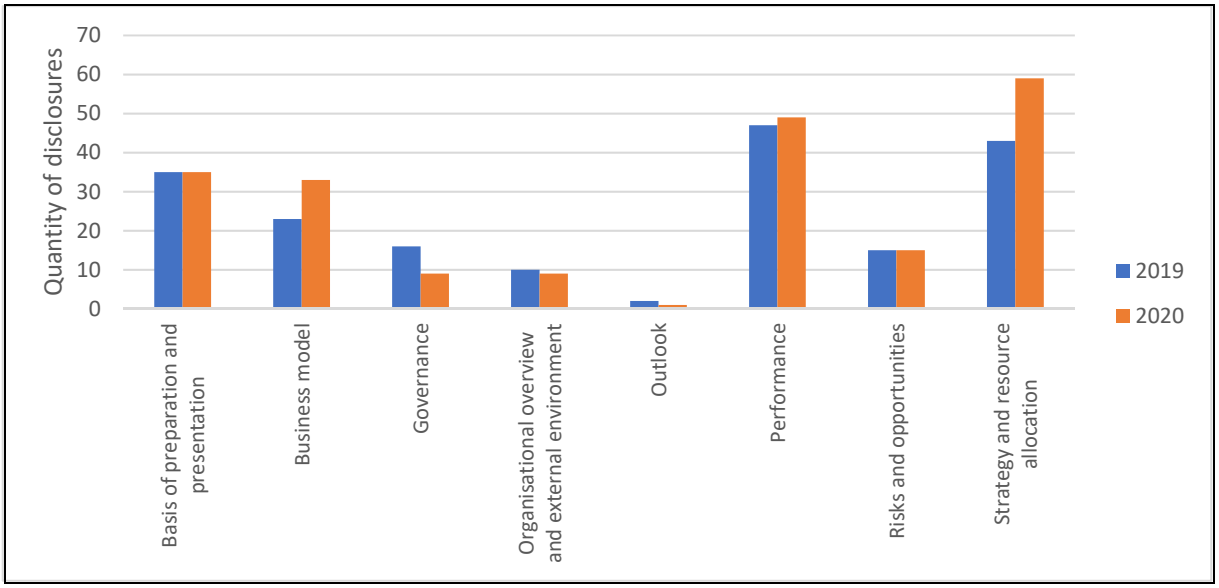

Figure 6 shows the location of biodiversity, ecological and extinction disclosures (according to integrated reporting content elements). It is seen that companies disclose the most under the strategy and resource allocation content element, with there being an increase from 2019 to 2020. Disclosures within the performance evaluation content element are the second highest. This supports the findings of Adler et al. (2018) and Hassan et al. (2020) that companies prefer reporting positive information as a form of impression management. Disclosures within the business model content element increased from 2019 to 2020, which is a promising result. It may indicate that companies are more aware of biodiversity as a key input to the value creation of the business. Disclosures within the risks and opportunities content element, however, paint a grim picture. It appears that companies still fail to understand the risks associated with biodiversity loss and extinction.

CONCLUSION

This study explored the level of biodiversity, ecological and extinction reporting (within integrated reports) by 30 Top JSE listed companies over the 2019 and 2020 years. This study provides an updated review of biodiversity reporting by companies listed on the JSE. It is also the first South African study to focus on biodiversity, ecological and extinction reporting concurrently across a range of industries.

The findings show that despite there being an increase in biodiversity, ecological and extinction disclosures compared to prior studies, disclosures remain vague and generic. The findings are consistent with prior studies that disclosures were biased and focused mainly on positive examples. This suggests that disclosures are used to manage impressions and legitimise the company. Among the highest-scoring disclosure themes was scene-setting, which is in line with prior studies.

The number of disclosures and total disclosure score was found to be positively correlated with the industry of the respective companies. A Kruskal-Wallis test confirmed that there are some statistical

ISBN NUMBER: 978-0-620-92690-4

differences between disclosure themes when grouped by industry. Findings showed that high biodiversity impact industries have a higher level of biodiversity, ecological and extinction reporting. A promising result is an increase in the number of disclosures in the business model and strategy and resource allocation sections of integrated reports. Companies are, however, still failing to disclose the risks and opportunities associated with biodiversity issues. This is surprising given mounting scientific evidence on habitat loss and mass extinction.

This study does have limitations in the form of a relatively small sample size and a subjective coding process to collect and interpret data. The study is only over two years, which is a further limitation of the study. Studying a larger sample size across more years is recommended for future research.

Reporting is increasing at a slow pace and lacks the level of detail necessary to effectively contribute to the conservation and restoration of biodiversity and prevention of extinction. This study implies that more needs to be done by organisations in terms of biodiversity, ecological and extinction reporting. It is, therefore, recommended that South African companies implement strategies and management-level approaches to address their impacts on biodiversity, ecology and extinction. South African companies should also adopt formal biodiversity reporting approaches as this is an essential step in the long-term goal of saving the natural world.

ISBN NUMBER: 978-0-620-92690-4

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

GAUTENG CENTRAL REGION

Analysis of the Challenges Arising from the Current Taxation Regime regarding Cryptocurrencies in South Africa

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ABSTRACT

There is extant research on the Bitcoin in the spheres of information technology, legality, accounting and taxation. There is, however, minimal research done on the challenges tax authorities face in taxing cryptocurrency (using Bitcoin as proxy). The purpose of this research paper is to identify those challenges and provide possible recommendations. The importance of this research is to provide recommendations to SARS, which may enable enhanced tax collection from cryptocurrency transactions. An in-depth analysis will be performed on the characteristics of Bitcoin and how cryptocurrencies are taxed in South Africa and other jurisdictions. This research will be conducted through a detailed literature review employing a qualitative method. The main focus of this research paper will be the implications of normal tax of cryptocurrency transactions. It was found that SARS is currently dependent on taxpayers being transparent in order to collect tax revenue from cryptocurrency transactions. There are multiple challenges SARS faces when taxing cryptocurrency and SARS will be required to adjust the current taxation regime to prevent tax evasion on cryptocurrency transactions and ensure effective collection of tax revenue from cryptocurrency transactions.

KEYWORDS: Bitcoin; crypto asset; cryptocurrency; SARS; tax challenges; taxation regime

INTRODUCTION

Background

"Paper money is going away… and crypto is a far better way to transfer value than pieces of paper…" This comment by Tesla CEO, Elon Musk, highlights the ever-growing influence of cryptocurrencies on the world payment ecosystem (Keeney & Wood, 2019). This brings with it unique challenges.

The purpose of this research paper is to analyse the challenges arising from the current taxation regime regarding cryptocurrencies in South Africa and provide recommendations in order to address the identified challenges. The nature and the complexities around cryptocurrency will be evaluated to undertake this analysis. The Bitcoin is the most well-known of the cryptocurrencies (Hellard, 2018) and is used as a proxy in this research.

Cryptocurrency is defined as "a medium of exchange, created and stored electronically in the blockchain, using encryption techniques to control the creation of monetary units and to verify the transfer of funds". A cryptocurrency has no intrinsic value in that it is not redeemable for another commodity such as gold, has no physical form and exists only in the network. It is difficult for tax authorities to enforce any tax regulations due to the complexity around cryptocurrency and the specialised information technology required (Johnson, 2018).

The South African Revenue Service (SARS) requires the taxpayer to declare ownership as well as the value of the cryptocurrency. If the cryptocurrency is held for speculative purposes, the taxpayer will be required to declare each trade and the corresponding profits and losses on that trade for taxation purposes. Tax will, therefore, only be collected from taxpayers who are honest and transparent (Verduyn, 2019).

The tax collection on cryptocurrency transactions is an administrative burden to SARS due to complexities around identifying whether a transaction has taken place as well as the value of the transaction (Van der Zwan, 2018). In the 2018 Budget Review, SARS indicated that they were intent on collecting tax on cryptocurrency transactions and preventing tax fraud (Van der Zwan, 2018).

In addition, the fact that cryptocurrency, specifically Bitcoin, represents a new asset class (Ram, 2019) presents multiple challenges to SARS as neither SARS, nor other tax regulators, have notable experience in taxing cryptocurrencies and preventing tax evasion with regards to cryptocurrency.

This research adds to the minimal research done on the challenges facing tax authorities in taxing cryptocurrencies, in particular, Bitcoin.

Research question

The research question to be addressed in this paper is: What are the challenges in the current South African taxation regime with regards to cryptocurrency and what recommendations can be made to address these challenges?

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This research question will be addressed by evaluating how cryptocurrencies are currently taxed within South Africa and Australia and Canada. Australia and Canada have been selected because they are OECD (2021) members and have introduced policies and regulation around the Bitcoin (Blandin, Cloots, Hussain, Rauchs, Saleuddin, Allen, Zhang & Cloud, 2019). While South Africa is not an OECD (2019, 2021) member, South Africa is a key partner to the OECD and takes guidance from OECD policies on matters of international taxation.

This will also include a discussion of tax administration around cryptocurrencies. The challenges SARS faces in ensuring efficient tax collection on the disposals of cryptocurrency and preventing tax evasion will be determined. The recommendations will be based on the challenges identified and how these challenges can possibly be resolved.

To address this research question, a qualitative method will be employed through a detailed literature review and content analysis. The research conducted will be based on a review of various literature, including: legislation, discussion papers, journal articles, websites and media articles. The aim of this research is not to create a generalisable conclusion and it is exploratory in nature.

Importance

The effective and efficient collection of tax is a necessity due to 90% of the funds required by government being acquired through tax collection by SARS. These funds are acquired to fund multiple government programmes (SARS, 2019:10). There has been a decrease of R50.8 billion in revenue in the recent SARS medium-term budget arising from a decrease in Gross Domestic Product (GDP), a decline in consumer confidence and the Business Confidence index (SARS, 2019:11).

This research paper will provide guidance on assisting SARS in the efficient and effective tax collection of cryptocurrency. This research, therefore, may be able to contribute to much-needed increases in tax collections. Furthermore, the Intergovernmental Fintech Working Group (IFWG) (2021) was purposely established to provide regulation guidance in South Africa and notes that crypto assets (cryptocurrencies) should be regulated to combat tax evasion. This paper furthers those aims.

There is extant research on the Bitcoin in the spheres of information technology (Reynolds & Irwin, 2017), legality (Gamble, 2017) and accounting (Ram, Maroun & Garnett, 2016). In a tax context, research has been conducted to develop a taxation policy of the Bitcoin (Ram, 2018). The challenges, however, have been little explored. In particular, the OECD (2020) notes that there is a dearth of comprehensive guidance on the taxation of cryptocurrencies and that this is exacerbated by the complexity and mercurial nature of cryptocurrencies. This paper serves to provide some approaches to address the challenges identified.

Scope and delimitations

The focus of this report will be challenges SARS faces in the imposition of normal tax on cryptocurrency. The implications of Value-Added Tax (VAT) on cryptocurrency will not be discussed. The cryptocurrency used in this analysis will be the Bitcoin.

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The rest of the paper is structured as follows. Section 2 deals with gaining an understanding of what Bitcoin is and the complexities around the cryptocurrency. The current taxation regime for cryptocurrencies of South Africa and other jurisdictions will be evaluated in Section 3.

The challenges SARS currently faces in taxing cryptocurrency will be identified in Section 4. Section 5 provides possible recommendations to the issues identified above.

In concluding the paper, possible amendments to current taxation provisions which may allow for the challenges with regards to the taxation of cryptocurrency in South Africa to be addressed will be stated in Section 6.

WHAT IS BITCOIN?

Nature of the Bitcoin

A fundamental feature of the Bitcoin is its decentralised nature. The Bitcoin is not regulated by neither a single country nor a specific entity, resulting in no central authoritative function regulating the Bitcoin system (Parveen & Alajmi, 2019). The lack of backing from government entities has resulted in difficulties in forming a taxation policy around the Bitcoin (Lovell, 2019).

The Bitcoin network is considered a peer-to-peer network as it a gives the seller and the buyer of the cryptocurrency the ability to transact without the need for an intermediary. Generally, there is no legal oversight over the transacting of cryptocurrency and, therefore, the regulation surrounding cryptocurrency cannot be considered traditional (Kuo Chuen Lee & Low, 2018).

All Bitcoins transactions are anonymous, as no personal identity is required to transact. The Bitcoin's system, however, is transparent as all transactions have a traceable history which is maintained on a ledger which is accessible to the public (Ciaian, Rajcaniova & Kancs, 2016). This ledger is known as the blockchain (Ram et al., 2016). This has resulted in the Bitcoin system having a pseudonymous nature as transacting in Bitcoins is neither completely anonymous nor completely transparent (Ciaian et al., 2016).

The Bitcoin is a digital currency as there is no physical component to the cryptocurrency and it is only available in digital form (Ram, 2019).

Cryptocurrencies can be obtained in the following ways: (Kuo Chuen Lee & Low, 2018)

- Vending machines or automated teller machines
- In exchange for goods or services
- Purchased from cryptocurrency exchanges online (using the internet)
- Purchased from decentralised exchanges via smart contracts
- Through mining

With regards to the mining of cryptocurrency, participants are rewarded with new cryptocurrencies for solving specific mathematical equations. This protocol around the mining of cryptocurrency is known as the Proof-of-Work protocol (Kuo Chuen Lee & Low, 2018). An increase in the number of Bitcoins mined results in additional complexities around solving the specific mathematical equations

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(Lovell, 2019). It should be noted that the amount of Bitcoins that can be successfully mined is limited to 21 million (Darlington, 2014). The limitation imposed on the number of Bitcoins that can exist results in the appreciation of the value of Bitcoin (Darlington, 2014).

Use of Bitcoin and the challenges faced by users

The Bitcoin can be used as a hedge against fluctuations in currency values as the value of the Bitcoin is not affected by the appreciation nor the depreciation of any currencies. Individuals and companies who reside in countries with extremely volatile currencies may elect to invest in Bitcoin. The Bitcoin can, therefore, be held as an investment in which the Bitcoin can be converted into a more favourable currency in the future or exchanged for other commodities in a barter type transaction (Darlington, 2014).

The accessibility of the Bitcoin and the fact that currency values do not impact the Bitcoin can result in international trade, which may have been impossible prior to the Bitcoin (Darlington, 2014). It should be noted that a majority of Bitcoin transactions are between investors who hold the Bitcoin for speculative purposes whereas only 20% of Bitcoin transactions are barter-type transactions (Ciaian et al., 2016).

There are multiple challenges which arise from the use of the Bitcoin, such as information asymmetry arising from the complexities over the software and system required resulting in a possible lack of knowledge or understanding. Furthermore, the initial investment costs are high to ensure the entity is acquainted with the system and has purchased the required specific software. One of the largest challenges faced are cyber-attacks due to the value of the Bitcoin and lack of an oversight institution. This results in further investment being required to ensure an adequate level of cyber-security to prevent unauthorised access and the theft of Bitcoins. Additionally, if there are any errors or instances of fraud within a Bitcoin transaction, the transaction cannot be reversed nor disputed once completed further placing emphasis on the challenges faced of not having an oversight institution (Ciaian et al., 2016).

Bitcoin wallets are susceptible to theft and can possibly be lost. A breakdown in the hard drive or viruses on the system can result in the loss of the private key associated with the Bitcoin wallet. The Bitcoins in the wallet will be unrecoverable and the Bitcoin user will not be able to recoup the resources used to acquire the Bitcoin (IFWG, 2021).

In 2018, SARS announced that cryptocurrency will be regarded as an asset of intangible nature for income tax purposes agreeing to the prevailing view. “Currency” is not defined in the South African Income Tax Act, however, the announcement was made due to the fact that cryptocurrency is neither legal tender within South Africa nor is cryptocurrency utilised or accepted nationally as a method of payment and cannot be accounted for as a currency (SARS, 2018).

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TAXATION IN SOUTH AFRICA AND OTHER JURISDICTIONS

South African taxation regime

SARS issued a media release in 2018 in which its stance on cryptocurrency was stated. The revenue service indicated that the current taxation framework will be used in guiding SARS in collecting taxes on cryptocurrency transactions and an additional Interpretation Note to provide specific guidance, as of 6 April 2018, was not necessary. The media release provided guidance on the tax administration of cryptocurrency in which the onus to declare any taxable gains or income on cryptocurrency transactions falls on the taxpayer (SARS, 2018).

Any amount received or accrued to the taxpayer with regards to cryptocurrency transactions can either be revenue or capital in nature. To determine if the amount is capital or revenue in nature, current jurisprudence will be evaluated. There is no dearth of case law to support this assessment. The amount will be included in the taxpayers' gross income if revenue in nature and the corresponding expenditure will be deductible if incurred in the production of the taxpayer's income. The Eighth Schedule will be used as guidance in taxing the amount if it is determined to be capital in nature (SARS, 2018).

The tax consequences for income which is of a revenue nature is different to that of a capital nature. The tax consequences for income which is of capital nature is more beneficial to the taxpayer as the income is included at a specific percentage, depending on the nature of the taxpayer, as opposed to the full income being included in the taxpayer's income if the income is deemed to be revenue in nature (SARS, 2018).

The acquisition or disposal of cryptocurrency will be considered a suspect trade in terms of section 20A(2)(*b*) and the definition of financial instruments in section 1 has been expanded to include cryptocurrency (National Treasury, 2019).

The main function of section 20A is to prevent any assessed losses from suspect trades being utilised to reduce the taxable income of natural persons. The amendment results in any assessed losses from a trade in which cryptocurrencies are acquired or disposed being ring-fenced to that trade unless the requirements of section 20A(3) are met in which the ring-fencing no longer applies (Wilkinson, 2019).

The normal tax implication of amending the definition of financial instruments to include cryptocurrencies is that the anti-avoidance rule in terms of paragraph 42 of the Eighth Schedule may be applicable to a capital loss incurred on the disposal of cryptocurrencies (Wilkinson, 2019). Paragraph 42 is applicable where a financial instrument is acquired 45 days before or 45 days after an identical financial instrument was disposed of and a capital loss arose on that disposal. The capital loss is not realised at the time of the disposal but is rather added to the base cost of the reacquired financial instrument (Stiglingh, Koekemoer, Van Heerden, Wilcocks & Van der Zwan, 2019).

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Australian taxation regime

The Australian Taxation Office (ATO) issued specific rulings and provided guidance over the taxation of cryptocurrency in December 2014. As stated by the rulings and guidance, the tax consequences of transacting in cryptocurrency is akin to those of a barter transaction. The reasoning for the above is that the ATO does not see cryptocurrencies as neither a currency nor a foreign currency (LOC, 2015).

Once a taxpayer has transacted in cryptocurrencies, the taxpayer is required to obtain the value of the cryptocurrency in Australian dollars from a reputable online exchange to determine the amount taxable. The taxpayer is required to maintain additional documentation with regards to the transaction. The documentation must consist of the date of the transaction, the purpose of the transaction and any details, if possible, of the party transacting with the taxpayer (LOC, 2015).

The guidance provided clarity over the tax consequences for individuals. The capital gain or loss for individuals who purchase goods or services for personal use or consumption using cryptocurrency as a means of payment will be disregarded. The capital gain or loss will only be disregarded if the cryptocurrency was acquired for less than $10,000. An additional tax implication is that if an employee is remunerated by means of cryptocurrency, the cryptocurrency transferred to the employee will constitute a fringe benefit (LOC, 2015).

The ATO has clarified that any cryptocurrency received as means of payment in a business transaction will be included in the entity's ordinary income at the fair market value, being the Australian dollar value of the cryptocurrency at the date of the transaction. The tax relief provided for businesses who transact in cryptocurrency is that if cryptocurrencies are used as payment to purchase any business-related items, the fair value of the items acquired will be deductible for tax purposes (LOC, 2015).

Additionally, the Australian tax administrative function will be discussed in detail due to the issuing of Gazette which provides direct guidance on how the ATO administration function will operate with regards to cryptocurrencies (ATO, 2019).

The data matching program requires all individuals and companies who transact in cryptocurrencies to maintain accurate records of every purchase, sale and transfer of cryptocurrencies. Individuals and companies who have taken part in the buying, selling or transferring of cryptocurrencies will be identified by the ATO as the ATO will obtain the necessary data from cryptocurrency designated service providers to allow for the aforementioned identification (ATO, 2019).

The main function of the data matching program is to ensure that taxpayers who transact in cryptocurrencies comply fully with the relevant tax legislation and that all the taxpayers' tax and superannuation obligations are met. The data obtained from the cryptocurrency designated service providers will be electronically matched to the already existing ATO database. This will allow the ATO to provide tailored tax information to the relevant taxpayers to ensure the main function of the data matching program is met (ATO, 2019).

An additional function of the data matching program is to allow the ATO to obtain an understanding of the behaviour and compliance profiles of taxpayers who hold and transact in cryptocurrencies.

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The data obtained may assist in the development and implementation of programmes, such as educational or compliance programmes, which will promote voluntary compliance of taxpayers who transact in cryptocurrencies (ATO, 2019).

Canadian taxation regime

The Canada Revenue Agency (CRA) treats cryptocurrencies as a commodity and any income from cryptocurrencies can either be business income or a capital gain. The CRA has established a list of examples in which the transacting in cryptocurrency will most probably constitute business income. The examples of cryptocurrency businesses are cryptocurrency exchanges (including automated teller machines) and those businesses involved in the mining or trading in cryptocurrencies (CRA, 2019).

The standardised tax rules will apply to the taxation of cryptocurrency in which Subdivision B and Subdivision C of the Canadian Income Tax Act will be used in guidance in taxing business income/loss and capital gains/losses respectively. The CRA has established that there are no tax consequences for holding or possessing cryptocurrency, resulting in the appreciation or deprecation of cryptocurrencies not being taxable while held by the taxpayer. There may be tax consequences on the selling, trading and the conversion of cryptocurrencies into currencies. These events are known as a disposition events (CRA, 2019).

The revenue agency has stated that the taxpayer is responsible for maintaining adequate documentation with regards to all cryptocurrency transactions, for a period of at least 6 years (CRA, 2019).

Conclusion

All the above jurisdictions regard cryptocurrencies as assets and use extant legislation, with some guidance, to delineate on the taxation implications of the barter transactions with the Bitcoin.

The Australian data matching program is of keen interest and is considered in addressing challenges in taxing the Bitcoin in South Africa. The next Section looks at what challenges exist in taxing the Bitcoin.

CHALLENGES FACING SARS IN TAXING CRYPTOCURRENCIES

This section explores the various challenges that arise for SARS in taxing cryptocurrencies, given its unique nature.

Identification of taxpayer

This challenge arises due to the pseudonymous nature of Bitcoin (Ciaian et al., 2016). The anonymity in Bitcoin transactions results in the inability of SARS to identify who the taxpayer is or whether a taxpayer has transacted in the cryptocurrency, unless disclosed by the taxpayer directly (Verduyn, 2019).

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The Bitcoin blockchain does record every transaction, but does not record information that can be used for instant personal identification. As a result, the transparency of the Bitcoin system does not guarantee that the taxpayer can be identified. The link created between the taxpayer and the Bitcoin, arising from the bank account details used to purchase Bitcoins or the physical address used for the delivery of goods purchased with Bitcoins, can be broken. The taxpayer can make use of different physical locations for delivery or different bank account to break this link. The fact that the taxpayer has the ability to break the link between the taxpayer and the taxpayer's Bitcoins, makes the transaction untraceable and transacting in Bitcoins completely anonymous (Ciaian et al., 2016).

Any person who is supposed to be taxed on Bitcoin transactions (for example, South African residents who are taxed on worldwide receipts and accrual) can avoid being taxed if no disclosure is made. This is possible due to the decentralised nature of the Bitcoin and the taxpayer's ability to transact anonymously.

Determining whether the source is a South African source in evaluating the tax implications for non-residents of South Africa

South Africa has a source-based tax system which entails that there will only be tax consequences for income that is sourced from South Africa for non-residents (SARS, 2018). The source of cryptocurrency transactions is placed into question when a non-resident company transacts with a South African resident. An example of this is when Luno, a digital currency exchange located in London (Luno, 2019), derives taxable income from a transaction with a South African resident. As Luno is a non-resident for tax purposes, the company will be taxed on South African source income. The South African resident transacts within South Africa, however, the transaction is processed on Luno's system, which is located in England. Additionally, the cryptocurrency which is owned by the South African resident is stored in a cryptocurrency wallet, the wallet is held and maintained on Luno's system (Lacoma, 2019). This indicates that although the cryptocurrency is owned by a South African resident, the cryptocurrency is never digitally located in South Africa. This results in difficulty in determining if the income is from a South African source and the possibility of Luno not being taxed on South African source income.

In contrast to the above, there is a possibility of double taxation arising from the challenges faced in determining the source of the income. Luno may be liable to pay tax on cryptocurrency transactions which occur in South Africa, in both England and South Africa. This is due to the fact that is not clear whether the source of the income will constitute South African sourced income or income sourced from England. Additionally, there is no specific double tax agreement articles which gives direct guidance on the above-mentioned scenario.

The taxpayer's ability to manipulate the taxpayer's taxable income with regards to the value of Bitcoin transactions

The volatile nature of the Bitcoin makes it extremely difficult for SARS to ensure the details disclosed on the taxpayer's return are transparent. The taxpayer could have disposed of a Bitcoin on 23 June 2019 at 11:36 AM for R161 142.75 and stated on his tax return that the Bitcoin was disposed of on 23 June 2019 (Coinbase, 2019). The taxpayer can, therefore, indicate he received R151 796.96, the price on 23 June 2019 at 3:44 PM (Coinbase, 2019), on his tax return. Furthermore, SARS has made no indication that the revenue service will be inspecting the

ISBN NUMBER: 978-0-620-92690-4

blockchain to confirm the details of any cryptocurrency transactions details disclosed on taxpayers' returns are correct.

The taxpayer has the ability to transact in Bitcoin without any money being transferred into the taxpayer's bank account, such as making purchases with Bitcoins. This is possible due to the peer-to-peer network on which the Bitcoin system operates (Kuo Chuen Lee & Low, 2018). This gives the taxpayer a further ability to manipulate the taxpayer's taxable income as section 26 of the Tax Administration Act No. 28 of 2011 (third party returns) will be fruitless in the above-mentioned transaction.

The taxpayer's ability to be dishonest on the taxpayer's tax return and the fact that there is no specific legislation in determining the value to be placed on Bitcoins has created the opportunity for taxpayers to manipulate their taxable income with regards to Bitcoin transactions.

The implications of section 20A and section 20 of the Income Tax Act for individuals who do not fall into the highest tax bracket

In terms of section 20A(2) of the Income Tax Act, section 20A is only applicable to individuals who fall into the maximum marginal tax rate. The maximum marginal tax rate applies to individuals whose taxable income exceeds R1 500 000. A taxpayer, who does not fall into the maximum marginal tax rate, can set off any assessed losses from trading in cryptocurrencies against the income derived from other trades in terms of section 20.

An assessed loss arises when deductions admissible under section 11 exceeds the income in respect of which they are admissible. A taxpayer who conducts a trade with respect to cryptocurrencies, such as mining of cryptocurrencies, has the ability to manipulate the income or losses from that trade. The taxpayer can claim deductions in terms of section 11 for expenditure incurred in power costs and maintenance costs. The taxpayer can manipulate the income from that trade to either decrease the tax payable with regards to that trade or create an assessed loss which can be set off against income from other trades. This creates a challenge to SARS as individuals who do not fall into the maximum marginal tax rate can make use of section 20 and their ability to manipulate their taxable income to significantly decrease their tax liability.

Cryptocurrency transactions that are in foreign currencies

In terms of section 25D, transactions that are conducted in currencies other than the rand (local currency) must be translated into the rand for South African tax purposes. The foreign currency may be either translated at the spot rate or at the average exchange rate for the corresponding year of assessment, depending on whether the taxpayer is a natural person, company or a permanent establishment.

A company who transacts in cryptocurrencies has the ability to manipulate section 25D due to the following. Companies are required to translate any foreign currencies into the rand at the spot rate on the date of the transaction. The lack of regulation, the peer-to-peer network on which the Bitcoin operates, the ability of the taxpayer to transact anonymously (Ciaian et al., 2016) and the current inability of SARS to obtain third party returns allows companies to incorrectly disclose the date of the transaction. This may be done to ensure the most beneficial exchange rate for the company is used

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to translate the foreign currency either received or expended in the corresponding cryptocurrency transaction.

The above applies to natural person and permanent establishment to a limited extent. The current taxation regime provides more choice in translating foreign currencies for natural persons and permanent establishments as these taxpayers mentioned can either translate the foreign currency using the spot rate on the date of the transaction or the average exchange rate for the corresponding year of assessment, whichever is more beneficial. These taxpayers may not be as incentivised to manipulate the date the transaction took place as opposed to companies, however, it is still a possibility for them to partake in the above manipulation.

Short term disposals and the acquisitions of identical financial instruments

The date on which the financial instrument was disposed of and that date in which an identical financial instrument was acquired are fundamental features in determining whether paragraph 42 of the Eighth Schedule is applicable. If paragraph 42 is applicable, the corresponding capital loss will be disregarded.

The taxpayer has the ability to manipulate the dates on the taxpayer's return with regards to Bitcoin transaction without being detected, as discussed in Section 4.5., to avoid the implications of paragraph 42. This is possible as paragraph 42 only applies where an identical financial asset is acquired 45 days prior or 45 days after the date the financial instrument was disposed of. The taxpayer can intentionally disclose the incorrect date of which the identical financial asset acquired or the date of the disposal of the initial financial asset to ensure the disposal does not fall within the 45 days period and the corresponding capital loss is not disregarded. The capital loss will either be used to reduce any other capital gains realised in that year of assessment or if there were no other capitals gains, the capital loss will be carried forward to the next year of assessment.

An additional note is that the difference between the losses realised in the above as opposed to the losses realised in section 20, is that the losses associated with paragraph 42 are capital in nature, whereas the losses associated with section 20 are revenue in nature.

Difficulty in classifying whether the proceeds on the disposal of Bitcoins are capital or revenue in nature

There will be difficulty for the Commissioner in determining whether the taxpayer's intention is capital or revenue in nature. The taxpayer's intention at acquisition of the items is important and conclusive, unless any other factor intervenes that indicates that it was disposed of in undertaking a scheme of profit-making (CIR v Stott 3 SATC 253). The taxpayer may be holding the Bitcoin for investment purposes (capital in nature), however, this will be placed into question due to the volatile nature of the Bitcoin. The taxpayer will be exposed to significant risk and large fluctuations in the value of the Bitcoin in comparison to traditional investments and it would appear that the Bitcoin cannot be considered a traditional investment (Ram, 2019). Due to the above, it is indicative that a majority of taxpayers who hold Bitcoins may be seen as holding the cryptocurrency for speculative purposes, indicating revenue in nature, as opposed to capital in nature.

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An additional challenge arises when a taxpayer purchases a fraction of a Bitcoin for investment purposes and subsequently purchases an additional fraction of the Bitcoin for speculative purposes. The taxpayer then sells the Bitcoin in a single transaction. The taxpayer can argue that the transaction should be treated as two separate transactions. This is due to that fact that current case law states that if the taxpayer has a primary purpose that is capital in nature (held for investment) as well as a secondary purpose that is revenue in nature, the secondary purpose may cause the receipt or accrual to be revenue in nature as the taxpayer pursued the 2 purposes simultaneously (CIR v Nussbaum). This will result in the full amount received or accrued to the taxpayer with regards to the transaction being revenue in nature. The current legislation or case law does not provide specific guidance on how two separate smaller parts of a larger asset held with different intentions, acquired at separate times and disposed of in one transaction should be taxed.

The importance in determining whether the proceeds on the disposal of Bitcoins are capital or revenue in nature is that the tax revenue obtained from these transactions will differ. The taxpayer will argue that the proceeds are of a capital nature as the tax consequences will be more beneficial to the taxpayer. The revenue service will argue that the proceeds are of a revenue nature as it will result in the tax revenue received being higher, depending on the nature of the taxpayer (SARS, 2016).

Conclusion

Many challenges in taxing the Bitcoin have been identified above, given its unique nature. Most of these challenges stem from the ability of a taxpayer to maintain pseudonymity and manipulate values and dates, as these transactions run through systems that are not part of the traditional financial paradigm. Furthermore, this is compounded by links to subjective factors such as a taxpayer's intention.

The next section considers how these challenges can be addressed.

RECOMMENDATIONS

The challenges faced by SARS in taxing cryptocurrency transactions and relevant recommendations are provided.

The possibility of third party returns with regards to digital currency exchanges

Section 26 of the Tax Administration Act states that the Commissioner may, by public notice, require a person who employs, pays amounts to, receives amounts on behalf of or otherwise transacts with another person, or has control over assets of another person, to submit a return with the required information in the prescribed form and manner and by the date specified in the notice.

SARS may consider entering into agreements with the respective digital currency exchanges, such as Luno, that are similar to the agreements with banks as contemplated in section 26 of the Tax Administration Act. Luno will provide SARS with opening balances, transactions throughout the year, the dates of these transactions and closing balances of South African taxpayers who transact in cryptocurrency. This will give SARS the ability to compare the details disclosed on the taxpayers'

ISBN NUMBER: 978-0-620-92690-4

returns and the corresponding third party returns from the digital currency exchanges. These third party returns will allow SARS to ensure transparency in the taxpayers' returns and to detect tax evasion.

In digitising the above approach, the data matching program adopted by the ATO could be implemented (ATO, 2019). The data obtained from the digital currency exchanges can be electronically matched to the corresponding details of the taxpayer submitted by means of e-filing. This will allow SARS to identify taxpayers who transact in cryptocurrency and provide tailored tax information to these taxpayers to ensure they understand and comply with the tax consequences of transacting in cryptocurrency.

This proposed recommendation may ensure that the challenges SARS faces in ensuring that the taxpayer is being transparent are resolved. The taxpayer will be unable to manipulate the value of the cryptocurrency or the date of the cryptocurrency transaction disclosed on the taxpayer's return. This is due to the fact that the value of the cryptocurrency and the respective date of the transaction disclosed on the respective taxpayer's return will have to agree to the details as per the third parties' returns. Furthermore, SARS will be able to identify taxpayers who transact in cryptocurrency as the details of these taxpayers will be disclosed on the third parties' returns. This will give SARS the ability to identify taxpayers who make no disclosure about cryptocurrency transactions on their returns.

The possibility of amending section 20A

National Treasury may consider the following recommended amendments to section 20A. The recommended amendment is to scope all individuals into section 20A or to apply ring-fencing of assessed losses from cryptocurrencies trades to all individuals. The second recommendation mentioned above may be the more simplistic approach as it will only apply to a part of section 20A, whereas the first recommendation will apply to the whole of section 20A.

This will prevent all individuals, not only individuals who fall into the maximum marginal tax rate, from making use of section 20 and their ability to manipulate their taxable income from cryptocurrency trades to significantly decrease their tax liability. The taxpayer will still have the ability to manipulate their gain or loss with regards to their cryptocurrency trade, however, this loss will now be ring-fenced to that trade.

Double tax agreements and Section 9 of the Income Tax Act

A Double Tax Agreement (DTA) is an international agreement between two tax administration authorities, from two separate counties, in which the main function is to prevent tax being unfairly imposed on a taxpayer in both countries. These agreements consist of specific requirements a taxpayer must meet to determine where the taxpayer is taxed (SARS, 2018).

The current DTA between South Africa and the United Kingdom will be used as guidance due to the scenario discussed in Section 4.2, where a South African resident transacts with an England based digital currency exchange. Article 20 of the respective DTA currently states that items of income of a resident of a Contracting State, wherever arising, not dealt within the foregoing Articles of this Convention shall be taxable only in that State (SARS, 2003). The recommended amendment to Article 20 is to state that when the aforementioned transaction occurs, the source of the income will

ISBN NUMBER: 978-0-620-92690-4

either be the country in which the taxpayer transacts or the system in which the transaction is processed and the corresponding cryptocurrency wallet is stored. This will provide clarity on the source of the income and ensure that there is no double taxation on these transactions.

The recommended amendment for Article 20 can be used in amending section 9 of the Income Tax Act. This will provide clarity in determining the source for taxpayers who are not South African residents for tax purposes and whose respective counties do not have a DTA with South Africa.

The possibility of the imposition of withholding tax

Once the source rules have been established, the recommendation to ensure efficient tax collection from non-residents who derive taxable income from a source within South Africa is the possibility of the imposition of withholding tax. The current legislation used to impose withholding tax on royalties (section 49B), interest (section 50B) and the sale of immovable property located in South Africa (section 35A) could be used as guidance.

When a South African resident transacts with a non-resident, in which income is received by or accrued to the non-resident from a cryptocurrency transaction from a source within South Africa, the South African resident will be required to withhold a certain percentage of that income. The aforementioned percentage will range from 7.5%-15% depending on the nature of the taxpayer. The South African resident will have the responsibility to the pay the withholding tax to SARS. This will simplify the approach in taxing the respective non-resident for SARS, especially when the non-resident is not in South African when the tax payment is due.

Capital or revenue in nature

The recommendations provided in this sub-section will be used as assistance in classifying whether the proceeds on the disposal of Bitcoins are capital or revenue in nature. The current approach by SARS to evaluate current jurisprudence to determine if the amount is capital or revenue in nature, has its challenges as discussed in Section 4.7.

In simplifying the above approach, National Treasury may consider expanding the scope of section 9C of the Income Tax Act to include cryptocurrencies. This will result in any proceeds from a disposal of cryptocurrency, in which the cryptocurrency was held for a period exceeding 3 years, being capital in nature in terms of section 9C(2). It should be noted that if the cryptocurrency was held as trading stock, being revenue in nature, the taxpayer will be required to recoup the deductions claimed in terms of section 22(2) of the Income Tax Act if the cryptocurrency was held for a period exceeding 3 years. This recoupment will be required in the year of assessment in which the cryptocurrency is disposed of, in terms of section 9C(5).

The list of cryptocurrency transactions or businesses issued by the CRA can be used as further guidance for SARS in determining whether the proceeds on the disposal of Bitcoins are capital or revenue in nature. The income from these businesses or transactions will, most probably, indicate that the income is of a revenue nature. The businesses or transactions listed are as follows: cryptocurrency exchanges (including automated teller machines) and the mining or trading in cryptocurrencies (CRA, 2019).

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Capital gains tax

The base costs of multiple cryptocurrencies or parts of a single cryptocurrency obtained by a taxpayer can be determined using paragraph 32 of the Eighth Schedule as guidance. This is due to the fact that cryptocurrencies meet the requirements of an identical asset. The requirements are met as, if any of the cryptocurrencies or part of cryptocurrency are disposed of, the taxpayer will realise the same amount regardless of which of them was so disposed of and the cryptocurrencies do not have identifying numbers which would allow the taxpayer to distinguish each cryptocurrency individually. The base cost of the cryptocurrencies will be determined using one of the following methods: specific identification or the first-in, first-out method. It should be noted that the weighted average method will not be applicable as Bitcoin is not traded on a recognised exchange.

The following two sub-paragraphs will be used to provide recommended amendments which will be used to determine the tax consequences for assets acquired or disposed of, in which cryptocurrency was used as the medium of exchange. Paragraph 43 of the Eighth Schedule provides the current taxation for capital assets disposed of or acquired in a foreign currency. The above-mentioned paragraph will be used as guidance in providing the following recommended amendments.

When a natural person disposes of an asset for cryptocurrencies and incurred expenditure with regard to that asset, in which cryptocurrency was used as means of payment. The taxpayer will be able to determine the capital gain or capital loss on the disposal in that cryptocurrency. The capital gain or capital loss must be translated into the Rand value (local currency), at either the value of the cryptocurrency at the date of transaction or the average value of the cryptocurrency for the year of assessment in which the disposal incurred.

Next, we consider a situation where a non-natural person taxpayer disposes of a capital asset for cryptocurrencies or incurred expenditure in acquiring that asset in cryptocurrencies. The proceeds will be translated into the Rand value, at the value of the cryptocurrency at the date of the disposal or the average value of the cryptocurrency for the year of assessment in which the disposal incurred. The expenditure will be translated into Rands, at the value of the cryptocurrency at the date the expenditure was incurred or the average value of the cryptocurrency for the year of assessment in which the expenditure was incurred.

In using the Australian taxation regime as guidance (ATO, 2019), the recommended amendment will be for the capital gain or loss for natural persons who purchase goods or services for personal use or consumption using cryptocurrency as a means of payment to be disregarded. Additionally, a limit will be imposed on the taxpayer's ability to disregard the capital gains or loss based on the Rand value of the cryptocurrency originally obtained.

CONCLUSION

This research has shown that SARS is extremely dependent on the taxpayer to be transparent to ensure cryptocurrency transactions are disclosed on the taxpayer's returns and the corresponding tax revenue is collected from these transactions. The recommendations provided in Section 5 may be able to assist National Treasury in forming a tax policy to ensure the effective tax collection on cryptocurrency transactions.

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Areas for further research include: The implications of VAT on cryptocurrencies transactions and the possibility of levying VAT on these transactions as opposed to classifying cryptocurrency transactions as a financial service.

Another area for further research is the IT hardware, software and expertise that SARS will be required to have to make use of the blockchain to identify South African taxpayers who transact in cryptocurrencies and trace these transactions.

In evaluating the future of cryptocurrency and the impact cryptocurrencies may have on the South African taxation regime, the following quote must be considered: “Money is a collective agreement. If enough people come to the same agreement, what they agree upon becomes secondary, whether it be farm animals, gold, diamonds, paper, or simply a code… Who knows what the future is going to suggest to us as money, once we see digital currencies as ordinary?” (Sever, 2019).

ISBN NUMBER: 978-0-620-92690-4

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

GAUTENG CENTRAL REGION

Challenges Facing Small and Mid-Cap JSE Listed Companies when Preparing IFRS Financial Statements

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ABSTRACT

Financial statements are required for the efficient functioning of the economy. The financial statements of small and mid-cap firms are of particular importance in developing economies where these entities' contributions are vital for economic growth. Numerous challenges are facing these entities in the preparation of high-quality financial statements. This paper investigates the challenges faced by small and mid-cap firms listed on the Johannesburg Stock Exchange. A qualitative method was adopted as the purpose of the study is exploratory. Data were collected from 11 semi-structured open-ended interviews held with preparers, technical accountants, auditors, and regulators. Findings based on respondents' perceptions revealed that pressure on their limited resources leads to a tick-box attitude towards the preparation of financial statements. Preparers feel justified in this approach as they perceive users as only looking at limited numeric values of financial statements. Any additional investment into improving the usefulness or relevance of financial statements is seen as a waste of resources. Lastly, many important shareholders are directly involved with the smaller entities, further entrenching the belief that financial statements are not used by capital providers and support a tick-box approach. The result is a negative reinforcing feedback loop where mere compliant financials lead users to de-emphasize its use, which strengthens preparers' motivation to treat financial reporting as a tick-box exercise.

KEYWORDS: Financial statements; IFRS: JSE; reporting; resources; small and mid-cap firms

INTRODUCTION

Financial statements are required for capital markets to function and developing countries to grow. Small and medium capitalisation (small- and mid-cap) companies (companies with market capitalisations of less than R10 billion) play a vital role in helping developing countries expand and grow their economy, reduce unemployment, and become less reliant on foreign direct investment (Fooladi & Nikzad Chaleshtori, 2011; Zhou, Simnett & Green, 2017). Despite this importance, these companies are seldom the subject of research. This is because these companies form an immaterial percentage of total market capitalisation and are infrequently discussed in the media and financial forums. To illustrate, the Top 40 Johannesburg Stock Exchange (JSE) listed companies make up over 80% of the total JSE market capitalisation but only 11.6% of the total number of companies.

Moreover, the challenges preparers face when preparing financial statements have received little attention, with those few existing studies, again, focusing on large corporations (Atkins & Maroun, 2015; Lee & Yeo, 2016). This research begins to address this gap in the literature by conducting semi-structured, open-ended interviews with 11 preparers of small- and mid-cap JSE listed companies – refer to the methodology section for more detail.

The purpose of this research is to identify challenges faced by small- and mid-cap companies in the preparation of high-quality financial statements. By identifying these challenges, regulators may be able to make more informed and inclusive regulatory decisions. The research may also inform standard setters on the reporting needs of smaller companies.

The literature review presents how agency theory may impact attitudes towards preparing financial statements. It is followed by a brief discussion of other factors that may impact the challenges facing small- and mid-cap companies when preparing their financial statement. The method is then presented, followed by the findings and a brief conclusion.

LITERATURE REVIEW

Financial statement quality is inherently difficult to define and evaluate objectively (Penman, 2007; Malola & Maroun, 2019). The International Accounting Standards Board (IASB) believes that financial statements are high quality if they comply with the fundamental and enhancing qualitative characteristics of International Financial Reporting Standards (IFRS) (Al-Dmour, Abbod & Al-Dmour, 2017; IASB, 2018b). Academics differ about which characteristics are most important. Biddle, Hilary and Verdi (2009), Tasios and Bekiaris (2012) and Cohen, Krishnamoorthy and Wright (2004) focus on the precision and fair presentation of financial statements, paying particular attention to the presentation of cash flows, financial restatements, and fraud. Elbannan (2011) focuses on the report's ability to communicate the underlying economics of the business while Tang, Chen and Lin (2008) emphasize the need for transparency. Concluding on the best definition of quality is beyond the scope of this paper. These papers are used to help identify potential challenges and informed the interview agenda.

This paper does not aim to judge the quality of financial statement quality, but to investigate the challenges small- and mid-cap listed companies face. Regardless of the current quality of small- and mid-cap companies' financial reports, identifying and understanding those challenges will help

ISBN NUMBER: 978-0-620-92690-4

companies to improve their report quality. Increased report quality has been found to reduce the cost of capital (Zhou et al., 2017) and have ancillary benefits in the form of promoting better internal decision-making (Barth, Cahan, Chen & Venter, 2017).

Large versus small- and mid-cap listed entities

Small- and mid-cap listed companies are different from large, listed companies as they often have lower net asset bases, gross revenue, and less complex operations. In addition, their shares are not as liquid as large-cap companies and are likely to have a larger proportion of management-owned shares (Mattimoe, 2016; SA Shares, 2020). These characteristics have important implications for corporate reporting and management's attitude when preparing them.

In general, we assume public companies are mostly owned by non-managers. The result is that the users must get their financial information about the company from general purpose financial statements (IASB, 2018a; Shapiro, 2005). But the smaller a company gets, the less this argument holds true as management are often significant shareholders, and the number of shareholders is typically reduced. Further, non-employee shareholders may hold Board positions, giving them access to privileged information, leading to these shareholders being less reliant on financial statements for financial information. Creditors, too, may have more bargaining power over small- and mid-cap firms allowing the creditors to demand detailed management accounts and other financial information as part of the loan conditions. This reduces creditors' reliance on general-purpose financial statements.

According to agency theory, principals (e.g. shareholders) bear agency costs due to an information asymmetry between management (as agents) and the principal, as well as the divergent goals (Shapiro, 2005). Using agency theory, we can generate predictions about how many resources we can expect small- and medium-cap entities to put into the preparation of financial statements. Understanding the dynamics between the need for continued capital support and the number of shareholders is crucial. This relationship provides a useful theoretical lens through which to analyse and challenge management's specified challenges to ensure that there are no excuses. Without this critical and skeptical mindset, findings may lead to ineffective changes that do not address genuine challenges, leaving the small- and mid-cap reporting environment without progress.

According to agency theory, in a company with only a few shareholders, the information asymmetry may be small as shareholders can either participate directly in the operations, or a company may feel comfortable sharing more granular information with all shareholders without a high risk of those reports becoming too widely distributed (Shapiro, 2005). In these cases, financial statements are not a vital component to address agency costs as a tool to monitor management. When coupled with the context of the other factors facing small- and mid-cap firms, this may lead management to focus their limited resources (both human and financial) on income-producing activities to the detriment of administrative activities like producing financial statements. We can therefore expect these companies to not perceive preparing financial statements as anything other than a compliance exercise that, perhaps, is a waste of time and money.

For companies with many shareholders, there are too many people for all to be a part of the management team or be Board members. The information asymmetry between management and shareholders in these companies is far greater. As such, these companies are likely to pursue

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preparing high-quality financial statements to address agency costs. Moreover, with so many shareholders, this is also a cost-effective and efficient mechanism to satisfy the shareholders' information needs.

On the one hand, in the small- and mid-cap company context, few large institutional investors have the time and competencies to interrogate financial statements with any rigor (Pandya, van Zijl & Maroun, 2021). This may lead to a lack of demand for high-quality financial statements and may again, incentivize management to focus their resources on income-producing activities and treat financial statements as a compliance exercise. On the other hand, small- and mid-cap companies could differentiate themselves from other companies by pursuing the preparation of high-quality financial statements (Porter, 2008; Van Zijl, Wöstmann & Maroun, 2017). The key to answering this question may lie in the perceived relevance of IFRS financial statements in the small- and mid-cap context.

The next section briefly summarizes other factors that may impact the preparation of financial statements in the small- and mid-cap context.

Factors affecting financial statement preparation

Firm size

A positive relationship has been found between the quality of financial reports and firm value and size (Lee & Yeo, 2016). Larger entities have greater access to resources to allocate towards collecting and analysing information, resulting in higher quality reports (Buitendag, Fortuin & De Laan, 2017). Larger firms generally have a greater impact on society and greater dependence on a large number of stakeholders (Buitendag et al., 2017). Greater reliance on stakeholders and potential reputational damage incentivises larger companies to allocate more resources to the preparation of financial statements. Small firms offer high growth opportunities, which may incentivise them to allocate scarce resources to their financial reporting at the prospect of greater investment (Buitendag et al., 2017).

Human resources

To assist in achieving high-quality financial reporting, Rezaee (2003) developed a six-legged stool model. The six legs are (1) commitment from the board of directors, (2) audit committee, (3) top management team, (4) internal auditors, (5) external auditors, and (6) the governing bodies. With the limited resources that small- and mid-cap firms have, it is probable that six legs to the financial reporting process are not as effective as in larger firms, resulting in lower quality financial reports.

Small and mid-cap firms struggle to attract and retain quality staff members due to lower compensation and less prestige (Appelbaum & Shapiro, 1991). The result may be less competitive and competent staff at small and mid-cap firms that are not cycled out due to decreased competition (Delfgaauw & Dur, 2010). However, given the size and complexity of these smaller firms, there is less need for more skilled and innovative staff members. This may result in lower staff turnover, which is encouraged by the non-financial benefits that are offered by smaller-cap firms, such as flexible working hours and a close interactive team (Appelbaum & Shapiro, 1991; Yousaf, Latif, Aslam & Saddiqui, 2014).

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Organisational structure

An organisational hierarchy exists in firms where jobs and authority are divided amongst employees to achieve a common goal (Damanpour, 1991; Greenberg, 2014; Mintzberg, 2007). The division of work and reporting levels result in information-processing costs such as costs of communication, costs of miscommunication, and opportunity costs from delays in communication (Gurbaxani & Whang, 1991). The sum of these costs and the agency problem that comes with it, increases as the person who prepares the financial reports moves higher up the hierarchy and as the level of organization within the firm decreases.

Corporate governance

Corporate Governance has become very topical with the slew of recent accounting scandals. Corporate Governance relates to the behaviour of corporations in terms of their performance, efficiency, growth, financial structure, and treatment of stakeholders (Fooladi & Nikzad Chaleshtori, 2011). An association has been found between companies yielding poor financial reporting quality and poor corporate governance (Beasley, 1996; Beasley et al., 1999; Beasley et al., 2000; Carcello and Neal, 2000; Dechow et al., 1996; Klein, 2002b; Krishnan, 2001; McMullen, 1996). Cohen et al. (2004) in their corporate governance mosaic, suggest that the drivers of high-quality financial reporting are external auditors, internal auditors, the board of directors (management), and the audit committee.

Opinions expressed by external auditors enhance the credibility of the financial statements (Kolk & Perego, 2010; Simnett et al., 2009). Although credibility itself does not increase financial statement quality, auditors may test systems and processes used to generate financial statements and make appropriate recommendations, which in turn increases the quality of the financial statements produced (Dopuch & Simunic, 1982; Watts & Zimmerman, 1986). Value-adding activities performed by the auditor include (1) auditor-client relationship quality, (2) additional advice on accounting and general business issues, and (3) validation on the work performed concerning IFRS complexities. Larger firms are more likely to provide these value-adding services due to their resource availability (Herda & Lavelle, 2013). Smaller audit firms face the same issues as the smaller listed companies with fewer resources available to perform value-adding activities for their clients. The quality of the audit is in turn affected by the strength of the board of directors, with stronger directors demanding higher quality audits. These strong boards may not exist in smaller-cap companies where resources are limited.

Research suggests that audits conducted by larger audit firms, with more resources, supervision, in-house experience, and industry knowledge are of a higher quality (Dezoort, Friedberg & Reisch, 2000; Ettredge, Johnstone, Stone & Wang, 2011; Solomon, Shields & Whittington, 1999). Larger audit firms are largely less dependent on client fees and face a greater reputational risk for incorrect reporting. As such, they may be able to retain independence with greater ease (Francis & Yu, 2009). In contrast to this, Behn, Choi and Kang (2008) argued that audit firm size should not affect the quality of the external audit. This sentiment is not widely shared. Larger clients demand high-quality audits as their financial statements are scrutinized, and stakeholders demand information about management stewardship (Arruñada, 2013).

Linked to the strength of the board of directors and the quality of the external audit received is the audit committee. The responsibility of audit committees has increased in light of recent accounting scandals, increasing their influence over financial reporting (Bédard & Gendron, 2010). The influence

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over the financial reporting quality and effectiveness of the audit committee is affected by the financial sophistication of the firm, the power of the audit committee to ensure quality (Krishnamoorthy, Wright & Cohen, 2002) as well as competence and independence (Bédard & Gendron, 2010; Ettredge et al., 2011).

As previously discussed, smaller-cap firms have limited resources to attract talent. This may result in audit committee members not having the required skills or motivation to effectively discharge their responsibilities (Ettredge et al., 2011). They may be less motivated to engage, reducing financial statement quality (Ghafran, 2013). On the other hand, audit committee members of smaller firms likely hold fewer directorships and have more time to devote to their role on the audit committee (Ghafran, 2013).

The final corporate governance component found to affect financial statement quality is the internal audit function (IAF). The IAF monitors the financial reporting process and provides guidance on accounting matters (Abbott, Daugherty, Parker & Peters, 2016). In this way, the IAF affects the quality of financial statements. A close relationship between internal auditors and the audit committee, where there is supervision by and reporting to the audit committee, has the potential to enhance the corporate governance capabilities of both parties (Cohen et al., 2004:33). Competence and independence are necessary for an effective IAF (Abbott et al., 2016; DeAngelo, 1981). Prior literature has shown a positive association between greater audit committee oversight and greater independence of the IAF (Quarles, 1994). As independence increases, the likelihood that financial reporting policy departures are either properly reported to the audit committee/external auditors or corrected by the party responsible, increases. This has the potential to increase financial statement quality (Abbott et al., 2016). IAF may be in-house or outsourced. Outsourced IAF allow for greater independence, deterring fraud (Abbott, Parker, Peters & Rama, 2007). An in-house IAF may result in increased firm knowledge resulting in more efficiencies at the risk of a decreased independence where deficiencies and fraud are less likely to be reported (Cohen et al., 2004). Whether the IAF is in-house or outsourced depends on the resource availability of the company as well as the skills available at the company. These are generally under strain at small-and mid-cap companies.

METHODOLOGY

This study adopted a qualitative method as its purpose was exploratory. Data were collected from 11 semi-structured open-ended interviews (Creswell, 2009; Rowley, 2012). This is appropriate as research on the challenges faced during the preparation of IFRS financial statements is limited, especially with regards to small- and mid-cap entities. Interviews provided the study with the ability to extract rich detail (Rowley, 2012).

Population and sample

Purposive sampling was used to identify potential interviewees who had the maximum probability of providing useful information and meaningful insights about financial statement preparation by small and mid-cap cap listed companies. The sampling stratified potential interviewees into four different categories. This was to ensure multiple perspectives were obtained and could be used to compare and corroborate insights. Through this, a sense of data triangulation was performed (Van Zijl & Maroun, 2017). These categories are preparers, regulators, auditors, and technical accountants.

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The sample was biased towards preparers of small- and mid-cap firms since they have direct involvement in the financial reporting process.

Rowley (2012) suggests that between 10 – 12 interviews are needed before data saturation is reached. Data saturation was reached after the tenth interview. The final interview was already scheduled and so was carried out. Table 1 summarizes the interviewees.

Table 1: Interviewee breakdown

Respondent group	Respondent code	Experience	Role and business title	Length of interview (min)
Auditors	**A1**	12 years	Senior audit manager	60
	A2	7 years	Audit partner	60
Preparers	**P1**	30 years	CFO	60
	P2	16 years	Group financial manager	60
	P3	17 years	CFO	60
	P4	20 years	CFO	90
	P5	8 years	Financial manager	90
	P6	25 years	Head of Finance and Company secretary	90
	P7	20 years	Financial director	75
Regulators	**R1**	30 years +	Regulator	60
Technical accountants	**B1**	20+ years	Previous technical partner	60

Data collection

Potential interviewees were contacted using the researchers' existing networks. An MS Teams meeting was scheduled at a suitable date and time with willing participants. Participants were given an information sheet that explained the project and the participant's risks and rights. A consent form was also included to be signed and returned to the researchers before the interview commenced (Alvesson, 2003; Creswel, 2009; Onwuegbuzie, Leech & Collins, 2010; Rowley, 2012).

Interviewees were provided the opportunity to clarify any ambiguities that the interviewer identified (Creswell, 2009; Parker & Roffey, 1997; Rowley, 2012). Tone and non-verbal cues were noted and used when interpreting interview transcripts during the analysis process (Alvesson, 2003; Creswell, 2009; Onwuegbuzie et al., 2010; Parker & Roffey, 1997).

Two pilot interviews were conducted to ensure the interview agenda: (a) gathered the information necessary to address the research questions, (b) was non-leading, (c) did not pose an ethical risk to both interviewee and interviewer, (d) questions were not ambiguous and (e) were complete (Leedy & Ormrod, 2013; Rowley, 2012). This enhanced the validity of the responses acquired (Creswell, 2009; Rowley, 2012; Strauss & Corbin, 2008). Periodically, interviewees were also asked to reword their statements to address the possibility of rehearsed responses and ensure there was no ambiguity (Alvesson, 2003).

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All interviews were allowed to progress naturally, which allowed for interviewees to provide more detail on the areas that they saw fit. A detailed interview agenda was used by the researchers to ensure that all themes were explored to ensure completeness.

Interview data and analysis

Interviews ranged between 60–90 minutes. Each transcript was reviewed to become familiar with its content. Open coding was then performed. A line-by-line approach was used to code each transcript while referring to the literature review to ensure a detailed open coding process. As additional interviews were conducted and coded, previous open codes were refined, resulting in the open coding being an iterative process (Gibbs, 2010; Strauss & Corbin, 2008). Axial coding was then performed. This allowed the researcher to identify links between the open codes (Creswell, 2009). These meaningful links were then used to create categories of information that may further be refined by collapsing or expanding them. This process provided a data mind map of categories that formed the basis from which selective coding was done. The coding was used to identify any additional themes or issues emerging from the interviews which shed light on the challenges small- and mid-cap firms are facing when producing high-quality reports (Gibbs, 2010; Strauss & Corbin, 2008).

The data gathering and coding processes were iterative and occurred concurrently. As more interviews were conducted, and codes refined, previously coded interviews were updated to ensure consistency and that the maximum value from each transcript was extracted (Maroun & van Zijl, 2016).

RESULTS

There is an overall sentiment shared amongst interviewees that IFRS is losing its relevance. This was especially felt by preparers of the financial statements of simple businesses. This sentiment harmed the attitude towards preparing financial statements. Interviewees generally felt that users of small- and mid-cap firms do not demand high-quality financial statements, relying rather on management accounts and other financial performance metrics. The lack of demand for quality financial statements coupled with the resource scarcity experienced by small- and mid-cap firms contributes to a lower emphasis on the preparation of quality financial statements in favour of compliant financial statements.

There was only one exception. Preparers of a financial services company that was just below the threshold to be classified as a large-cap felt financial statements are still relevant and play a vital role. There was a sense of pride in the quality of financial statements as these preparers spoke during the interview.

The results first present the interviewees' perspectives on IFRS financial statements and their perception of the demand for financial statements. This is followed by a discussion of the challenges faced by preparers when preparing IFRS financial statements.

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Perception of financial reportings

High-quality financial statements vs low-quality financial statements

All interviewees agreed that financial statements need to comply with IFRS, be free from error, and be clearly presented at a minimum.

> *"It's got to be compliant - that's a minimum*" P4.

Quality is improved as additional relevant information is provided and is presented understandably and concisely. Respondents identified that quality could be improved by improving the logical flow of the financial statements and clearly linking numbers and disclosures without including unnecessary complexity.

> "*High-quality financial statements are those that go beyond complying with the basic minimum [and present] additional information that is of relevance to investors*" R1.

This is essential, as most preparers believe that most of their users lack the competence to comprehend complex financial statements.

Respondents identified conciseness as a key determinant of quality which will lead to users being more likely to remain focused. A balance needs to be struck between providing relevant information while maintaining a reasonable length.

> *"[If my attention is not maintained], then I go: "okay, well that's nice" [and] you put it down. Then that 300-page document does not become relevant because I don't finish it*" A1.

Methods identified to retain users' attention include presenting the financial statements in order of materiality and adapting language in the disclosure to relate specifically to the reporting entity.

> "*We actively used to recommend to companies to move away from boilerplate policies because we felt that it doesn't actually add to the quality of the financial statements"* B1.

Interviewees noted that they do not view the timeliness of financial statements as improving quality. This is counterintuitive as information loses relevance as time passes, especially in the modern, technological age. In the small- and mid-cap context, this may be a result of their shares not being traded as frequently as large-cap shares. Moreover, the lack of fast-paced, and highly competitive speculative and institutional investors may translate into less pressure to publish financial statements as soon as possible after year-end.

Two preparers identified that accountability and transparency of financial statements increased quality. This is in contrast to Tang et al. (2008) and five of the preparers interviewed who stated that financial statements need to be transparent at a minimum before quality can be addressed. Emphasis was placed on the need for balanced financial statements that depict both the positive and negative aspects of the firm. Preparers felt this increased the trust placed in financial statements. These sentiments are shared by Elbannan (2011).

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Relevance of IFRS annual financial statements

Accounting has evolved in response to changes in the business environment. There was some concern that changes to improve accountability have resulted in irrelevant financial statements (Gea-Carrasco, 2015; Maxxia, 2019). Seven respondents felt that IFRS financial statements are losing their relevance. A further 3 respondents stated that they believe IFRS, on its current trajectory, will lose its relevance soon.

> "*There is so much detail and long words included that I don't think anyone reads [the financial statements] anymore. So, I do think it has lost relevance because it has just got a little bit over the top… So, you know it has just become such a tick-box exercise. It has become so detailed. It has lost that focus*" P3.

Only 1 respondent felt confident that IFRS financial statements are still relevant. This respondent worked at a financial services company that was just under the threshold to be classified as a large-cap company. This may indicate two key issues. First, that the perceived relevance of financial statements increases as the company's market capitalization increases. Secondly, that financial services organizations, being highly regulated, appreciate the importance of financial statements more, leading them to believe IFRS financial statements have more relevance.

For interviewees that felt IFRS financial statements are irrelevant, it negatively affected their attitude towards the preparation of financial statements, which in turn resulted in fewer resources being allocated to this process. An auditor noted:

> "*It probably is a part laziness, it is probably part "I don't know how?" and it is probably part "This is going to take me two days to do, no one is going to look at the financial statements or no one is going to see the value in actually doing IFRS [when referring to small- and mid-cap preparers]"* A1.

In smaller-cap firms, limited training is available, and less time is arguably spent learning the requirements of new standards, as the benefit of compliance with IFRS seem not apparent to the preparers. Three preparers noted that most of their shareholders were on the board, decreasing the agency problem and information gap that needs to be closed by financial statements. Although the remaining firms interviewed had a wide spread of funders, holdings are immaterial to investors, and the impact of these smaller-cap entities on society is limited, decreasing demand for high-quality financial statements. Interviewees emphasized that in discussions with their users, financial statements are not the focal point.

> "*They've got their models… If you look at analysts, they have got their own models… They look at your EBITDA and they understand your segment report and you don't get asked any more questions. I have never been asked a single question in a roadshow about the liquidity risk or sensitivity analysis on my trade receivables*" P3.

Preparer 7 believes that the preparation of IFRS financial statements (1) is a non-value-adding activity, (2) are not relevant, and (3) have little value to their users. All small-cap preparers interviewed shared the same sentiments.

Interviewees expressed that the minimum disclosures per IFRS do not provide relevant information. However, when questioned as to why they don't provide additional disclosure to overcome this

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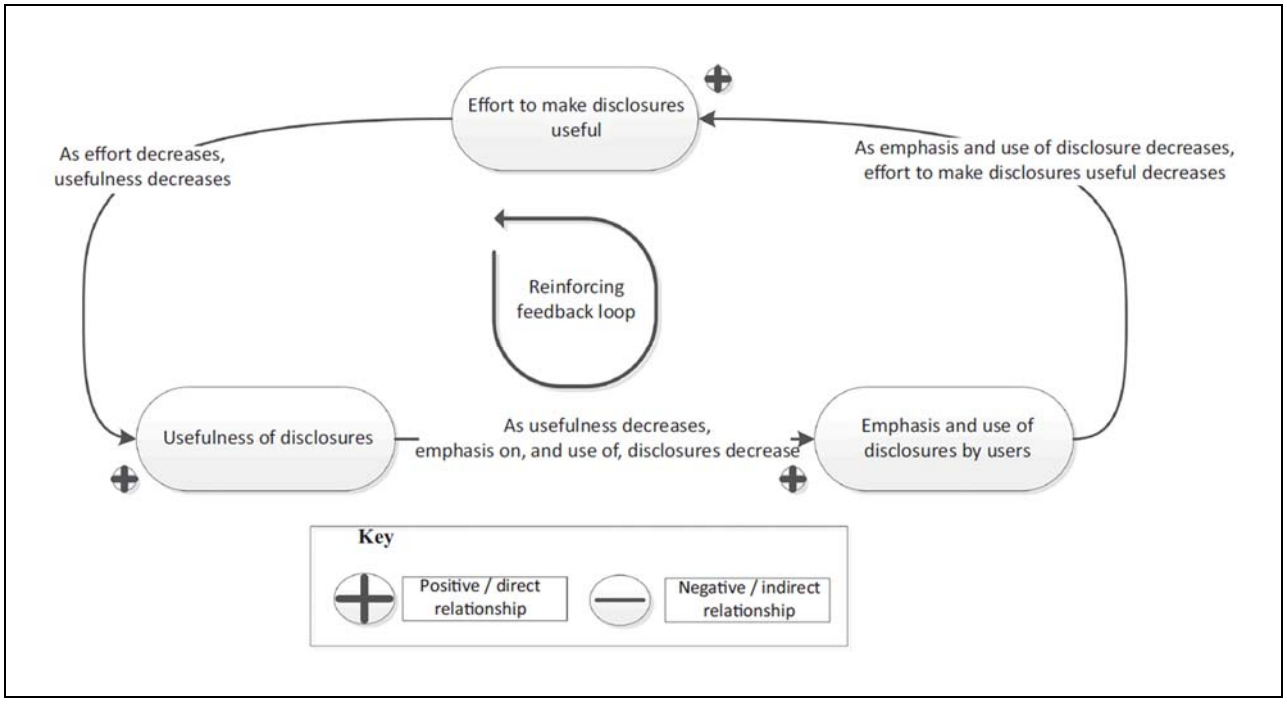
shortfall in line with IAS 1[1], the relevance of financial statements was raised again. The following diagram by Pandya et al. (2021:229) summaries the interviewees' views:

Figure 1: Financial statement emphasis feedback loop



Challenges small- and mid-cap JSE listed firms face in producing high-quality financial statements

Size and qualification of the finance team

The size of the finance team at small and mid-cap firms is notably smaller than their larger counterparts. Most small and mid-cap firms interviewed had finance teams of 3-4 people compared to 30 people in large-listed companies (A1). A difference in the level of qualification of the finance teams was also noted. Most of the interviewees had CA(SA) qualifications with some having BCom qualification or less. Those that were not CA(SA)s noted considerable reservations about their own ability to perform their finance roles:

> "'*When I took the job, I thought it was just the financial managers' position but by the time I went there, I learnt the position was a full financial director position. On the first day, I went to the CEO and said, 'I'm not a financial director, honestly I'm not.' I only have a BCom, I'm not a CA… I have never drafted financial statements before*." P7.

In the past, small finance teams would have been appropriate to prepare the financial statements due to the smaller, less complex nature of the operations. However, with the increase in the complexity of IFRS, these finance teams are beginning to feel overwhelmed. In addition, all preparers interviewed expressed that the size of their firm does not justify a larger, more qualified finance team or hiring an IFRS expert.

1 International Accounting Standard 1 – Presentation of financial statements

ISBN NUMBER: 978-0-620-92690-4

> "*I don't think employing a person that knows all these things and to then pay them R100 000 a month is worth it for our company - because we would only use it when we have to do these wonderful calculations at year-end… I don't think for a small company like ours it's worth it*" P7.

Lack of resources may be one of the reasons for decreased expertise in smaller-cap firms (Yousaf et al., 2014). Smaller firms generally attract employees who are less competitive and ambitious, due to lower compensation and prestige. The effect may be less expertise and innovation, decreasing financial statement quality (Bantel & Jackson, 1989).

> "*It does seem that there is a level of competitiveness amongst [preparers of large-cap firms]. Where there is a wanting to reflect that they are better than their peers and at the top of their game from an IFRS perspective... Most of them take personal pride in being strong in IFRS and it seems to be quite an important factor to them*" A1.

Preparers identified that small and mid-cap firms have a lower staff turnover. This may be due to increased autonomy and smaller organizational hierarchies. The lower staff turnover may offer some mitigation against lower IFRS competencies. This is because staff become extremely familiar with the entire business and, through the years, learn the IFRS of the specific transaction that that entity deals with often. An issue arises when standards change, and these staff may require outside assistance to become comfortable with the new accounting procedures:

> *"I said to [my CA friend], "Please just explain this to me?" Because you know the orders that came in from our auditors, and then they send you the spreadsheet and you look at it and you do not, you do not…- I didn't get it. Okay, It's complex. It just didn't make sense. That's also, so my friend who is a CA, I asked her and she sent me a spreadsheet and she made little notes and whatever then eventually I could understand what they were doing - which doesn't really… it doesn't… it's not to say that I agree with it fully, or understand exactly but then I could understand the calculation at least … Yeah, so I had somebody that actually helped me with that calculation, and I could do the rest."* P7.

Linked to the competence of the finance team are the competence and size of the internal audit function (IAF) and audit committee. Most preparers identified that they had a small, in-house internal audit function. This poses a threat to the independence of the IAF, where employees may be manipulated by management. This is partially mitigated by the largely simple operations of these smaller companies, where there is less room for fraud and error. Preparers of firms moving towards the mid-cap size had outsourced IAF. Although this eliminates the threat of a lack of independence, there may be a decrease in knowledge of the business operations, reducing the propensity for fraud and error to be identified. This risk is again mitigated by the lack of complexity that exists in most small and mid-cap firms.

The audit committee is responsible for the oversight of the IAF. Much like the rest of the finance function, it was found that smaller-cap firms invest limited resources into the competence of their audit committee, rather investing in income-producing activities, where value creation is more apparent. Auditor 1 and R1 identified that small and mid-cap firms lack the experienced chairs and committee diversity that exists at their larger firms.

> "*The large companies pride themselves in having an audit chair that is well versed, has got experience in various industries. Whereas the smaller firms are happy if they have an audit*

ISBN NUMBER: 978-0-620-92690-4

committee chair that mainly serves on one other listed company. Or, in some cases, don't serve on any other listed entities. So no, there is a difference" A1.

Although the audit committee may have less experience, they can allocate more time to their role on the audit committee as they hold fewer directorships (Ghafran, 2013). This may positively impact the performance of the audit committee and the financial statement oversight if these members are committed to their roles.

The efficient functioning of the audit committee affects the quality of the external audit received, which could in turn, affect financial statement quality. The auditors interviewed identified that the less competent audit committees of smaller listed companies are, the more defensive and less willing they are to accept recommendations put forward by the auditors.

"I would spend more time adding value on a large-listed client than small- and mid-cap clients because I know by the time that I go to them it will be a conversation that would be listened to, in the first place" A1.

This may also be a result of the education, experience, and confidence of the audit committee. Experienced and knowledgeable audit committees of large-cap firms may feel comfortable within themselves to not view recommendations as attacks, and a resultant need to become defensive. On the contrary, audit committees of large-cap firms – with their competitiveness – may welcome recommendations as it ultimately reflects well on them as the audit committee.

Moreover, costs may play a role in how welcoming audit committees and senior management are towards recommendations. With the limited resources available to small- and mid-cap firms, coupled with their general perception of disinterested users, they may not see the need or want to spend time and money on implementing recommendations. This is especially so if the recommendations are directed towards general improvements and not towards achieving compliance.

The external audit

All preparers expressed frustration and disagreement in their dealings with the external auditors. At times, they felt they had adversarial interactions with their auditors:

"*Yeah, they will say 'That is your opinion, but you know what? This is IFRS.' They always throw IFRS at you and say, 'This is IFRS' and '**this is what you must do, so please go over it and do it again and then come back to us**'*" P7, emphasis in original.

Constant disagreement, which may be due to the lower technical expertise of the smaller cap firms, hinders the audit and the financial statement process. Preparers don't view the audit as adding value and were visibly upset:

"*There is **no value-add**. Not at all. **Seriously, not at all***" P7, emphasis in original.

This reduction in value-add may be due to increased time spent on ensuring basic correctness and compliance, decreasing time available to provide value-add.

"*By the time that you get something from a large-listed client, it is 90% ready, whereas the smaller company, there are all these version control issues, things get done over and over again*" A1.

ISBN NUMBER: 978-0-620-92690-4

These issues can compound and can frustrate the audit-client relationship and increase the view that an audit is a grudge purchase.

Auditors interviewed identified that the audits of larger listed companies were more efficient as the financial statements were more complete and had fewer inaccuracies. This is consistent with the finding that smaller listed firms have less competent finance teams or pay less attention to the preparation of financial statements as well as the view that financial statements are losing relevance.

CONCLUSION

This research found that preparers at small- and mid-cap firms perceive IFRS financial statements as playing only a minor role in corporate reporting. They believe IFRS financial statements have lost, or are losing, their relevance. This has led to a reduced focus on IFRS financial statements for small/medium cap companies.

Specific challenges in preparing financial statements include personnel constraints regarding time, qualifications, and confidence. While large-cap firms often receive value-adding advice and assistance from auditors, small- and mid-cap firms receive less, if any. This may be a result of the extra effort required by auditors to help small- and mid-cap firms get their financial statements to be correct and compliant. Audit committee members of small- and mid-cap firms appear to limit the improvement of financial statement quality.

These challenges are, however, mitigated to a certain extent as many shareholders are also executives, and the reduced complexity of their businesses reduces the complexity of their financial statements.

The biggest challenge facing small- and mid-cap firms appears to be the negative feedback cycle present in the corporate reporting space. A scarcity of financial resources and security leads to prudent spending of both time and money with a focus on income-producing activities. Smaller and less qualified finance teams lead to time constraints and further prioritisation of income-producing activities over the production of highly informative financial statements. This is supported by the general perception that IFRS financial statements are losing relevance and are not the primary source of financial information by users of financial statements for smaller- cap firms. This allows preparers to justify bare-minimum financial statements, further embedding the perception that financial statements are losing relevance and further entrenching the justification of preparing bare-minimum financial statements.

To break the cycle, regulators and standard setters may need to shift their focus to understanding why IFRS financial statements seems to be losing their relevance for small- and mid-cap firms, and how this perception can be changed. If these small- and mid-cap firms' businesses are relatively simple, so, too, should their financial statements be. However, especially in the current COVID-19 context, one can understand prioritising time and spending on income-producing activities.

Perhaps academics can play a role in helping to break the negative feedback loop. Academics from different universities could join forces to prepare monthly short lectures aimed at users of small- and mid-cap firms. The point of these lecturers would be to show less informed users (a) how to approach

ISBN NUMBER: 978-0-620-92690-4

reviewing a set of financial statements and (b) provide tips and tricks on various topics to demonstrate what calculations or comparisons can be performed to further their understanding of the respective entity. With a renewed focus on IFRS financial statements, preparers may begin to change their priorities and initiate a new feedback loop – a positive feedback loop. One where more attention is placed on improving financial statements, leading to more informative and useful financial statements, and greater demand for high-quality financial statements and so, closing the positive feedback loop.

This research did not explore the differences in challenges faced by small- and mid-cap firms by industry. Some industries, specifically the finance and banking industry, are significantly more regulated, which may affect the financial statement quality. Other industries may be prone to attract personnel with specific traits, which could result in higher competition, and therefore motivate finance employees to perform at their highest – positively affecting the quality of financial statements. The research did not focus on interviewing preparers of large-cap firms listed on the JSE to corroborate or contradict the views of small- and mid-cap firms. Confidence in the results may be improved if future research focused on contrasting the experiences of preparers at small- and mid-cap firms to those at large-cap firms. Finally, this research was specific to JSE listed firms in South Africa. Further research can be performed to address the above-mentioned aspects not covered in this paper, and to determine if the challenges small- and mid-cap firms face when producing financial reports are experienced in other countries.

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

GAUTENG CENTRAL REGION

Directors' Report Disclosures and the Expectation Gap

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ABSTRACT

According to SAAPS[1] 3, the directors' report should not be covered by the audit opinion expressed by auditors. Yet the Companies Act 71 of 2008 requires auditors to express an opinion on the complete set of financial statements, which includes the directors' report. The inconsistency between the Companies Act 71 of 2008 requirements and the guidance issued in SAAPS 3 pertaining to directors' reports arises due to the absence of a disclosure framework. This study identifies current directors' report disclosures and investigates users' perceptions of the importance of these directors' report disclosures, assessing the possibility of and need for conceptual guidelines on directors' report disclosures.

A multi-phase approach was followed for this study. A qualitative method (thematic content analysis) was used to collect data on the content of directors' report disclosures, whilst an online questionnaire was used to collect data on users' perceptions of the directors' report.

The disclosures found in the stand-alone directors' report mimic the disclosures found in corporate governance section of the integrated report. This allows for the establishment of a disclosure framework over directors' report disclosures. For certain disclosures, there is an expectation gap between what is disclosed in the directors' report and what users perceive as being important.

KEYWORDS: SAAPS 3; directors' report; disclosures; framework; expectation gap

1 South African Audit Practice Statements

INTRODUCTION

Purpose

According to SAAPS 3, due to the nature of the directors' report, along with the absence of a suitable framework governing directors' report disclosures, the directors' report should be excluded from the audit opinion over the financial statements. Yet the Companies Act 71 of 2008 requires auditors to express an opinion on the complete set of financial statements, which includes the directors' report.

This study addresses the inconsistency between the Companies Act 71 of 2008 requirements and the guidance issued in SAAPS 3 pertaining to directors' reports, by identifying current directors' report disclosures and assessing whether these disclosures are sufficient to warrant inclusion in the audit opinion by determining users' perceptions of those disclosures. This is used to inform normative recommendations on the issues which should be included in a director's report and, in turn, provides the first step in developing criteria for auditors to use when evaluating director report disclosures.

Significance

This study is the first to develop a disclosure framework for the directors' report. This framework will allow auditors to evaluate whether or not these disclosures can be the subject matter of an audit engagement (Cohen & Hanno, 2000; Cohen et al., 2002; García-Sánchez, 2020; García-Sánchez et al., 2021), thereby addressing the inconsistency between certain regulatory requirements[2] in a South African context. The resolution of the above inconsistency between regulatory requirements will allow for full legal compliance by both companies and their auditors.

The remainder of this research is structured as follows: an overview of the prior literature is provided. Next, the method is discussed. This is followed by an analysis of the results and the conclusion.

LITERATURE REVIEW

The separation of company ownership from the management function gave rise to the agency problem (Moriarty, 2014; Rossouw et al., 2002). Since the owners (principals) no longer managed the day-to-day operations of the company, this responsibility shifted to the board of directors (agents) (Moriarty, 2014; Raemaekers & Maroun, 2014; Rossouw et al., 2002). One shortcoming of this arrangement was that directors/managers could take advantage of information asymmetry and abuse their position to obtain personal gains at the expense of owners and other stakeholders. Consequently, the board of directors needs to be accountable to the stakeholders and disclose to them the actions taken to serve the interests of

[2] the inconsistency between the Companies Act 71 of 2008 and SAAPS 3 in relation to the directors' report

ISBN NUMBER: 978-0-620-92690-4

stakeholders (IoD, 2016; Rossouw et al., 2002). One method of reducing the information asymmetry and in turn ensuring accountability, is through auditing the financial statements. Another method of reducing information asymmetry is through improved corporate reporting (including the directors' report) (Jensen and Meckling, 1976; Rossouw et al., 2002).

The directors' report is one of the reports found in the integrated report and provides information that moves away from the traditional reporting model (which mainly focusses on quantified financial information). The directors' report enables corporate transparency and accountability, particularly over the responsibilities of the board of directors.

The accompanying Schedule 4 to the now repealed 1973 Companies Act provided guidance on the disclosures of the directors' report. Many of the Schedule 4 disclosures are similar to those recommended by King IV (see Table 1). King IV provides guidance on disclosures, which are guided by materiality of the information, enabling stakeholders to make informed decisions (IoD, 2016).

The new Companies Act 71 of 2008 and the accompanying Regulations do not provide any guidance as to what content to include in the directors' report. According to the Companies Act (2008, s30 (3) a), the annual financial statements must:

> 'include a report by the directors with respect to the state of affairs, the business and profit or loss of the company, or of the group of companies, if the company is part of a group, including (i) any matter material for the shareholders to appreciate the company's state of affairs and (ii) any prescribed information'.[3]

The wording of the Companies Act explicitly includes the directors' report as part of the complete set of annual financial statements (Maroun & Wainer, 2014). If a company's annual financial statements need to be audited, these financial statements must also include the auditor's report (Companies Act 2008, s30 (3)(b)).

The South African Auditing Practice Statement 3 and King IV's impact on directors' report

In November 2015, the IRBA published a revised SAAPS 3 containing illustrative audit reports (IESBA, 2015). The revised practice statement illustrates the form and content of independent auditor's reports. The illustrative reports include the following statement under the heading 'other information':

> 'The directors are responsible for the other information. The other information comprises the Directors' Report, […]. Our opinion […] does not cover the other information and we do not express an audit opinion or any form of assurance thereon' (IRBA, 2015:28).

3 Refer to Table 1 for a list of specific disclosures required in the directors' report by Schedule 4 to the now repealed 1973 Companies Act

ISBN NUMBER: 978-0-620-92690-4

SAAPS 3 requires auditors to read through other information and assess whether there are any material inconsistencies between the other information and the financial statements, whilst also taking into consideration the auditors' understanding of the entity.
Consequently, considering that that the directors' report should fall within the scope of an auditor's opinion (Maroun & Wainer, 2014), the audit procedures of only reading the directors' report to assess for inconsistencies does not provide sufficient appropriate audit evidence to express an opinion of reasonable assurance thereon.

The audit of the directors' report seems to be problematic as there are no criteria against which the form and content of the report can be evaluated. IFRS provides guidelines on the form and content of all the annual financial statements that are prescribed by the Companies Act, (2008) except for the auditors' report and directors' report (IASB, 2010c). The International Integrated Reporting Framework further provides guidelines and principles that cover the preparation of integrated reports (IIRC, 2021). Yet the form and content of the directors' report is at the discretion of directors. There is also no generally accepted basis for determining precisely what information should be included in the directors' report. Consequently, there is no guidance to ensure that the directors' report disclosures deliver transparent, consistent, comparable, relevant and reliable financial or non-financial information.

King IV lays out the governing body's roles and responsibilities and consequently, most of the directors' report disclosures are based on the responsibilities and duties of directors. Relevant disclosures are summarised in Table 1 and cross-tabulates with disclosures per the repealed 1973 Act.

Table 1: Summary of disclosures

King Code (King IV)	Companies Act No. 61 of 1973
1. Composition of the board (Principle 7; practice 6-13)	1. Nature of business
2. Number of meetings held and attendance (Principle 7; practice 7(d))	2. Share capital and other instruments
3. Diversity targets and achievements (Principle 7; practice 10-11)	3. Significant acquisitions and disposals (change in fixed assets or accounting policy)
4. Independence of the board (Principle 7; practice 25-29)	4. Details of the board of directors and company secretary, including financial interests
5. Period of service (Principle 7; p30)	5. Group structure

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6. Board Committees (Principle 8; practice 39-69)	6. Dividends
7. External advisers (Principle 6; practice 3)	
8. Board evaluation (Principle 9; practice 71-75)	
9. Succession planning (Principle 7; practice 13)	
10. Risk governance and IT governance (Principle 11; practice 1-9 & Principle 12; practice 10-17)	
11. Compliance with applicable laws & regulations, non-binding rules, codes and standards (Principle 13; practice 18-25)	
12. Types of assurance (internal and external audit) (Principle 15; practice 40-61)	
13. Stakeholder relationships (Principle 16; practice 1-19)	

Even though most disclosures are driven by the responsibilities of directors in King IV (see IoD, 2016), there still exists a lack of guidance on what information companies should disclose, where it should be disclosed and what form the disclosures should take (Solomon et al., 2000; Wahh et al., 2020).

The Companies Act is legally binding and must be adhered to by all companies. The only lawful way in which the directors' report can be excluded from the audit opinion (thereby ensuring that companies fully comply with the Companies Act 71 of 2008) is through the alteration of the Companies Act. To address these problems, this paper explores direct directors' report disclosures to develop an initial framework to be used as a benchmark for the auditing of the directors' report.

METHODOLOGY

Population and sampling

The population is the listed companies on the JSE. The sample consisted of the JSE top-100 companies for two financial years. These companies have a public interest covering a wide variety of stakeholders (global interest) (Gilbertson & Roux, 1977; Mlambo & Biekpe, 2007), and differences in non-financial report disclosures may exist due to differences in firm size, industry, geographic dispersion and the country of operations (consider Beattie et al., (2004)).

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Data collection

A thematic content analysis was used to examine and identify themes in the disclosures of companies' directors' reports (Leedy & Ormrod, 2010; Raemaekers, 2015; Solomon & Maroun, 2012). An iterative process was used to codify the directors' report. Specific disclosures were identified and recorded on a theme or disclosure register. As additional reports were analysed, the theme register was updated until no additional disclosure themes were noted. The final result was a list of disclosures typically included in directors' reports. The final list is included in Appendix A.

The frequency of the disclosures (per Appendix A) was then determined. The researchers used a binary coding system to limit the degree of subjectivity. A value of 1 was recoded where a disclosure was located. A value of 0 was assigned where a specific theme has not been covered. Initial analyses of the data drove later data collection, thereby ensuring completeness over the disclosure checklist (i.e., constant comparative method) (Leedy & Ormrod, 2005).

An online questionnaire was then used to gauge stakeholders' perceived importance of the directors' report disclosure themes identified in *Appendix A*. Stakeholders are proxied by auditors, preparers, academics and general users of financial statements. A Likert scale ranging from 1 to 5 was used where "1" indicates that the disclosure/theme is irrelevant and "5" represents that the information is very relevant (Naynar et al., 2018).

Data analysis

The responses from the online questionnaire were analysed using PCA[4]. PCA is useful in studying interrelationships (Dimi et al., 2014; Muthén & Muthén, 2015; Naynar et al., 2018). The questionnaire results were scanned for univariate correlations greater than 0.7 to confirm that multi-collinearity was not having a significant effect on the results. The determinant of the correlation matrix (un-tabulated) reported correlations along the diagonal greater than the recommended 0.5 (Kline, 2014; Naynar et al., 2018).

An untabulated KMO[5] test (Kaiser & Rice, 1974; Kaiser et al., 1970) and Bartlett's test of sphericity (Bartlett, 1954) was used to determine if the variables are factorable, and that the sampling size was adequate (x^2=0,833, p<1%). It was concluded that 8 factors are appropriate for this research as this accounted for a cumulative 70% of the total variance in the data (see scree plot in Appendix B).

Occasionally, certain variables may load about the same on more than one factor, making interpretation ambiguous. To address this, factor rotation was used to clarify the relationships between variables and factors (Naynar et al., 2018; Öcal et al., 2007). The final results were generated using orthogonal rotation (Varimax method) with principal component analysis as

4 principle component analysis
5 Kaiser-Mayer-Olkin

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the extraction method. This is in keeping with the approach followed by social science research and the assumption that the factors are independent rather than highly inter-related.

For ease of analysis, factor loadings of less than 0.4 were excluded from the analysis. The objective was to minimise the number of variables with high loadings on a factor and generate an interpretable solution (Dimi et al., 2014; Hair & Jnr, 2009; Naynar et al., 2018; Osborne, 2015). The results were derived by analysing the factor load of each variable and interpretively grouping the factors based on the factor loads contributing to the factor (Öcal et al., 2007).

RESULTS

Most companies' directors' reports cross-reference to the governance reports. Other reports that also overlapped with the directors' report included the directors' responsibility reports, remuneration reports, nomination committee reports, audit committee reports, risk committee reports, chairman and management reports and the secretary certificate.

Due to the overlap between the directors' reports and the corporate governance reports, two sets of data were collected. The first data set collected only included disclosures in reports labelled "directors' report". The second data set included combination-disclosures found in a company's directors' report and the corporate governance report. Both reports included discussions and an analysis of company affairs provided by the directors. In the cases of the combined reports, a separate or clearly labelled director's report was not included in the company's annual or integrated report.

From the analysis of the reports, 46 disclosure themes were identified (see Appendix A). The differences in disclosure themes between the two data sets were found to be statistically insignificant for both financial years (see Table 2 below).

Table 2: Descriptive statistics for the disclosure themes data collected

Field Information	Year 1 (Directors' report & Corporate governance report)	Year 1 (Directors' report & Corporate governance report)	Year 2 (Directors' report)	Year 2 (Directors' report)	Differences (Directors' report)	Differences (Directors' report & Corporate governance report)
Number of disclosures	46	46	46	46	0	0
Mean	66	65	31	31	0	1
Median	78	78	27	26	1	0

Figure 1 illustrates the frequency of each disclosure identified in the sample of directors' reports and corporate governance reports for both years of this study. Note that Figure 1 does not illustrate the results of the stand-alone directors' report, due to the similarities between the standalone reports and the cross-referenced reports (see Table 2).

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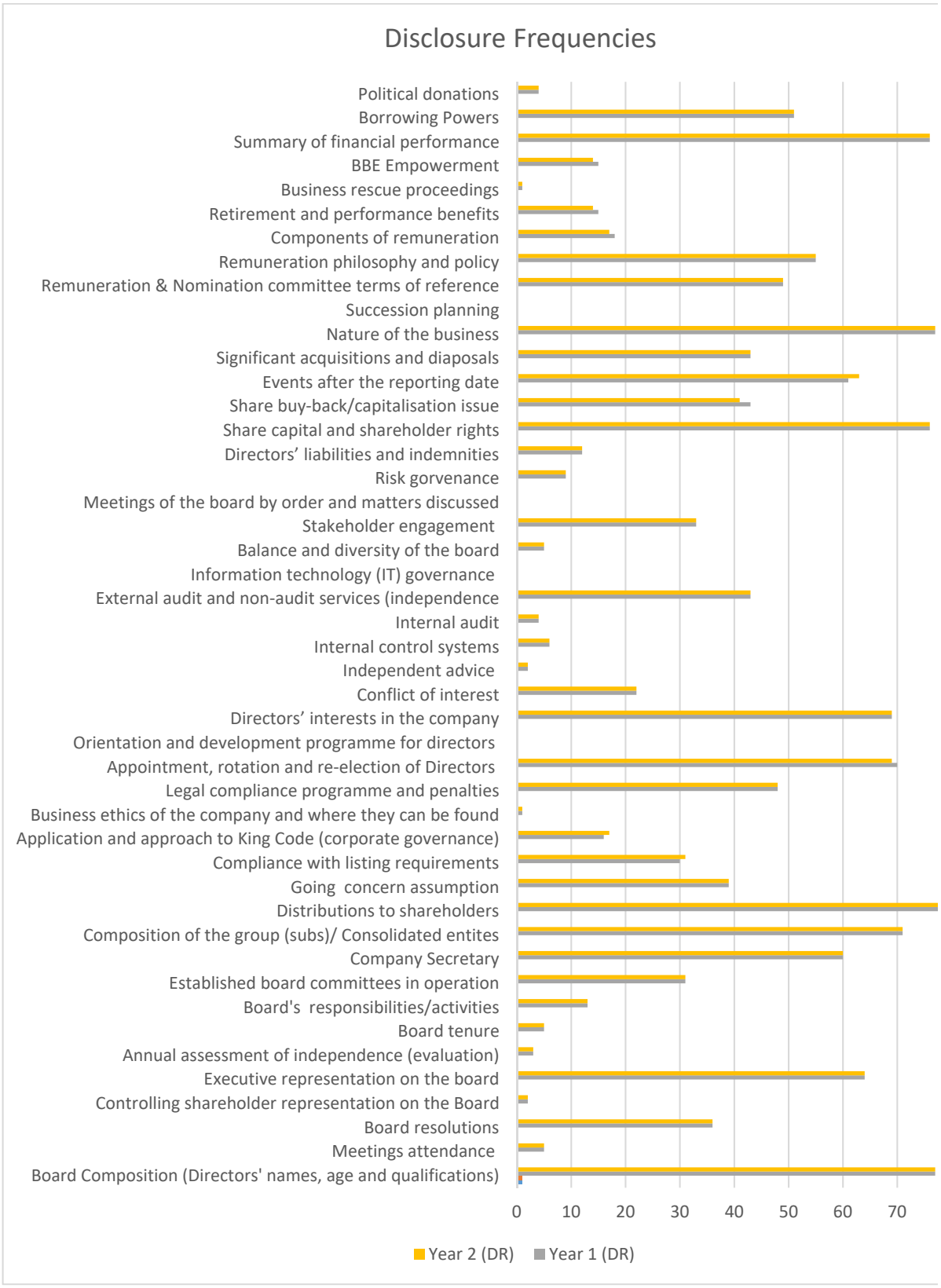
Figure 1: Frequency of disclosures



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Factor analysis results

Table 3 below shows the disclosures as per the factor analysis with strong loadings on each factor. Please note that in this section the respondents are also referred to as users of financial statements.

All disclosure items loaded sufficiently on the components/factors and no disclosure was excluded from the solution (see Table 3). There are however a number of cross-loading situations (disclosures which loaded heavily on more than one factor) which needed careful interpretation (Osborne & Costello, 2004; Osborne et al., 2008).

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Table 3: Rotated component matrix								
Question No	Component							
	1. Composition of the board of directors and their interests in the company, as well as the current state and future prospects of the company	2. The benefits of stakeholders and rights over the company.	3.Board's responsibilities	4. Compliance with laws, regulations and recommended practices	5. Nature of the business	6. Annual assessment of independence and board resolutions.	7. Remuneration benefits of directors	8. Risk governance and business ethics
42	0.755							
35	0.648	0.436						
21	0.639							
20	0.634							
44	0.613							
13	0.575					0.483		
32		0.680						
37		0.615						
36		0.596			0.487			
45		0.575					0.556	
14		0.524		0.406				
33		0.459						
18		0.420						
9			0.626					
2			0.613					
8			0.592		0.400			
3			0.516			0.515		
29			0.502					
19		0.430	0.482					

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22			0.468					
31			0.443					
43				0.740				
27				0.640				
15				0.634				
28		0.473		0.535				
1	0.417			0.505				
25					0.656			
24					0.643			
23					0.633			0.423
10			0.414	0.415	0.551			
26					0.517			
11					0.505			
4						0.761		
7						0.700		
5						0.669		
6				0.510		0.518		
41							0.711	
40							0.706	
46							0.604	
39							0.578	
38							0.420	
16								0.773
17								0.615
30								0.580
34								0.554
12								0.410

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 27 iterations.

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The components/factors calculated were interpretively named according to the types of disclosures that loaded in each factor (shown in Table 4 below).

Table 4: Factor analysis disclosures

Component/ Factor	Component/factor name
1	Composition of the board of directors and their interests in the company as well as the current state and future prospects of the company.
2	The benefits of stakeholders and rights over the company.
3	Board's responsibilities and activities in the company.
4	Compliance with laws, regulations and recommended practices of good corporate governance
5	Nature of the business, how the business is composed, its internal control systems, internal audit and external audit.
6	Annual assessment of independence and board resolutions.
7	Remuneration benefits of directors.
8	Risk governance and business ethics of the company.

Factor analysis key findings

For each of the components identified from the factor analysis, the frequency of the disclosures making up a component/factor is compared to the users' perceived importance of the disclosures (based on the questionnaire results). This is used to highlight possible expectation gaps (Naynar et al., 2018) (see Table 5).

The expectation gap is measured by comparing the results of the frequency measure score of disclosures disclosed by companies against the frequency measure score of users' perceived importance regarding which disclosures they deem are important in the directors' report.

Table 5: Expectation gap frequencies

Component/Factor	Sum of average score per company	Perceived importance per questionnaire	Outcome
1) Composition of the board of directors and their interests in the company as well as the	4.41	4.50	No issues

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current state and future prospects of the company			
2) The benefits of stakeholders and rights over the company	3.73	4.13	Some expectation gap
3) Board's responsibilities and activities in the company	4.98	4.15	No issues
4) Compliance with laws, regulations and recommended practices of good corporate governance	2.90	4.07	Wide expectation gap
5) Nature of the business, how the business is composed, its internal control systems, internal audit and external audit	4.60	4.21	No issues
6) Annual assessment of independence and board resolutions	2.81	4.29	Wide expectation gap
7) Remuneration benefits of directors	3.33	4.25	Some expectation gap
8) Risk governance and business ethics of the company	3.37	4.36	Some expectation gap

As per Table 5, the most notable expectation gaps involve components/factors 4 and 6. Less significant expectation gaps are reported for components/factors 2, 7 and 8. No expectation gaps were identified for components/factors 1, 3 and 5.

The above suggests that there are adequate disclosures provided by companies for disclosure on:

- the benefits of stakeholders and their rights over the company (factor 2)
- remuneration benefits of directors (factor 7)
- risk governance of the company (factor 8)

King IV provides guidelines on the role of directors over risk governance, as well as stakeholder inclusivity and also remuneration governance (IoD, 2016). The influence of the

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King Code might be the reason that there are insignificant expectation gaps in this regard, because companies are required to make the necessary disclosures (IoD, 2016).

More emphasis is placed on factor 1, 3 and 5 disclosures by the companies than by the respondents (see Table 5). The results suggest that more than sufficient detail for the below disclosures is being provided in the directors' reports (as evidenced by the absence of an expectation gap):

- composition of the board of directors and their interests in the company as well as the current state and future prospects of the company (factor 1)
- the board's responsibilities and activities in the company (factor 3)
- the nature of the business, how the business is composed, its internal control systems, internal audit and external audit (factor 5)

The level of detail pertaining to the above disclosures in not problematic, unless companies disclose large amounts of information that is not relevant to users. The information provided by companies needs to be relevant and useful to users, in line with the fundamental principles per the conceptual framework (IASB, 2010).

Overall, the results imply that the respondents place greater emphasis on the following disclosures than the preparers (creating an expectation gap (Naynar et al., 2018)):

- the compliance with laws, regulations and recommended practices of good corporate governance (factor 4)
- the annual assessment of independence and board resolutions (factor 6)

Respondents seem to require more detail on the annual assessment of independence and board resolutions (factor 6) to be able to assess the types of decisions taken by the board of directors. This will allow users to determine whether all resolutions are always in the best interest of the company. More detail on board resolutions would also provide transparency with regards to compliance with laws, regulations and recommended practices of good corporate governance by the board when making decisions.

A sensitivity test (see Appendix C) was conducted on the characteristics of the respondents to assess the impact on the results. Neither the respondents' position nor the respondents' type of career had any statistically significant impact on the results of the respondents. There was also no statistically significant impact on the respondents' years of experience, probably because all respondents have an advanced understanding of financial reporting.

Results show that an expectation gap has developed due to companies placing emphasis on disclosures which are not considered equally important by users (Naynar et al., 2018). Consequently, a directors' report disclosure framework is proposed to address the expectation gap.

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CONCLUSION

Key findings and disclosure framework

This study develops a disclosure framework for the directors' report by identifying current disclosures and assessing whether these disclosures are sufficient to warrant inclusion in the audit opinion (given the current exclusion of the directors' report from the audit opinion as per SAAPS 3). This study also investigates users' perceptions of the importance of certain directors' report disclosures and assesses the possibility of and need for conceptual guidelines for the evaluation of the directors' report by auditors. (see Table 5).

Figure 2 (rotated matrix) summarises the main disclosure themes identified. There are 46 disclosures that can be found under the directors' report/corporate governance report (see Appendix A). These formed the basis for the development of the disclosure framework in this study, along with users' perception of the importance of certain disclosures (which was also factored into account when developing the framework). The disclosures found in the stand-alone directors' report mimic the disclosures found in corporate governance section of the integrated report. The users perceived the composition of the board of directors and their interests in the company, as well as the current state and future prospects of the company as important and ranked these highest with a frequency score of 4.50 out of 5. The disclosure theme which ranked second highest with a score of 4.29 out of 5 is the annual assessment of independence and board resolutions. All the disclosure themes were perceived by users as important, having a score of above 4 out of 5 which is greater than 80% (see Table 5). The findings indicated that there are some inconsistencies with what companies disclose and what the users expect.

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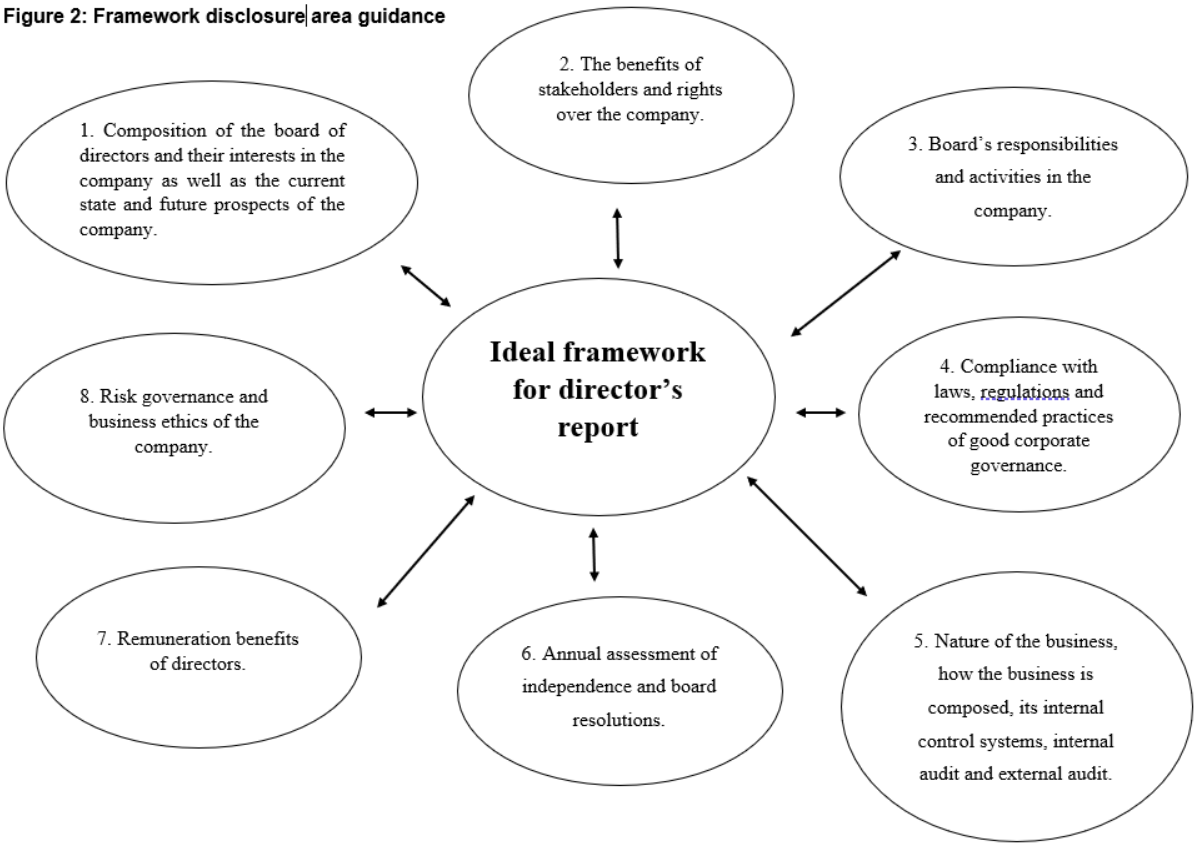
Figure 2: Framework disclosure area guidance



Implications and recommendations

Although not all companies disclose every identified disclosure items in their directors' report, prior findings indicate that even though different organisations may be influenced by different factors (e.g., social factors), disclosure structures and patterns are still remarkably similar (De Villiers & Alexander, 2014). However, the similarities in disclosures may not necessarily reflect corporate priorities and intentions, but may instead be driven by a desire to follow generally accepted practices such as those presented by King Code (Scapens, 2006). To enhance legitimacy, organisations conform with generally accepted practices, which leads to the adoption and application of voluntary disclosures on reporting (DiMaggio and Powell, 1983; Scapens, 2006).

The findings of the paper indicate that, despite there being a certain level of consistency in directors' report disclosures amongst companies (which means that there are criteria which can be used for the evaluation of directors' report disclosures by users and auditors), there still appears to be an expectation gap between what is disclosed versus what users want to be disclosed. The results of the expectation gap have been discussed in detail in this paper.

Limitations and areas for future research

As with any study of this nature, there are inherent limitations. This study was confined to two years, which reflected the latest published annual financial statements and integrated reports at the time of this study. The fact that the King IV report was only issued in 2016 infers that

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there was a presence of a learning curve during the following few financial year-ends whereby the newly structured recommended principles and practices of King IV were incorporated. This limitation can be addressed through a future study which could explore whether or not the disclosures in the separate directors' report and the directors' report within the corporate governance report have remained consistent in the financial periods subsequent to this study.

Future research can also expand on the sample size as only 100 JSE-listed entities were selected for this study whereas the JSE main board hosts almost 400 companies. Directors' report disclosure trends in other jurisdictions can also be examined in future research as this study is limited to a South African context. Another area for future research is the perception gap between companies and users. Future research could also factor a broader range of users (including regulators) into account, as this study considers only three groups of users (academics, auditors and preparers of financial statement). Academics serve as a proxy for investors, given that investors learn about mispricing of investment portfolios from academic publications, according to McLean and Pontiff (2016). Nevertheless, the fact that investors are not engaged directly is an inherent limitation of this study and presents an area for future research, where investors can be engaged directly.

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Appendix 1: Directors report disclosure framework

Areas of disclosures	Disclosure List
1. Composition of the board of directors and their interests in the company as well as the current state and future prospects of the company.	• Board composition (directors' names, age and qualifications). • Going concern assumption. • Directors' interests in the company. • Conflict of interest. • Significant acquisitions and disposals. • Business rescue proceedings. • Summary of financial performance.
2. The benefits of stakeholders and rights over the company.	• Distributions to shareholders. • Stakeholder engagement. • Share capital and shareholder rights. • Share buy-back/capitalisation issue. • Nature of the business. • Succession planning. • Borrowing powers.
3. Board's responsibilities and activities in the company.	• Meetings attendance. • Board resolutions. • Board's responsibilities/activities. • Established board committees in operation. • Appointment, rotation and re-election of directors. • Company secretary. • Orientation and development programme for directors. • Independent advice. • Meetings of the board by order and matters discussed. • Directors' liabilities and indemnities.
4. Compliance with laws, regulations and recommended practices of good corporate governance.	• Board composition (directors' names, age and qualifications). • Annual assessment of independence (evaluation). • Company secretary. • Compliance with listing requirements. • Application and approach to King Code (corporate governance). • Balance and diversity of the board. • Stakeholder engagement. • BBE empowerment.
5. Nature of the business, how the business is composed, its internal audit and external audit.	• Composition of the group (subs)/consolidated entities. • Internal control systems. • Internal audit. • External audit and non-audit services (independence). • Information technology (IT) governance. • Nature of the business.
6. Annual assessment of independence and board resolutions.	• Board resolutions. • Controlling shareholder representation on the board. • Executive representation on the board.

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Areas of disclosures	Disclosure List
	• Annual assessment of independence (evaluation). • Board tenure.
7. Remuneration benefits for directors.	• Remuneration & nomination committee terms of reference. • Remuneration philosophy and policy. • Components of remuneration. • Retirement and performance benefits. • Borrowing powers. • Political donations.
8. Risk governance and business ethics of the company.	• Business ethics of the company and where they can be found. • Legal compliance programme and penalties. • Internal control systems. • Risk governance. • Events after the reporting date.

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APPENDIX A: SAMPLE QUESTIONNAIRE

List of directors' report and corporate governance disclosure items identified from the principal component analysis

"1" indicates the disclosure is totally irrelevant, and "5" means the disclosure is very relevant.

Disclosures	1	2	3	4	5
1. Board Composition (Directors' names, age and qualifications)					
2. Meetings attendance					
3. Board resolutions					
4. Controlling shareholder representation on the Board					
5. Executive representation on the board					
6. Annual assessment of independence (evaluation)					
7. Board tenure					
8. Board's responsibilities/activities					
9. Established board committees in operation					
10. Company Secretary					
11. Composition of the group (subs)					
12. Distributions to shareholders					
13. Going concern assumption					
14. Compliance with listing requirements					
15. Application and approach to King Code (corporate governance)					
16. Business ethics of the company					
17. Legal compliance programme and penalties					
18. Appointment, rotation and re-election of Directors					
19. Orientation and development programme for directors					
20. Directors' interests in the company/ Insider Trading					
21. Conflict of interest					
22. Independent advice					
23. Internal control systems					
24. Internal audit					
25. External audit and non-audit services (independence)					
26. Information technology (IT) governance					
27. Balance and diversity of the board					
28. Stakeholder engagement					
29. Meetings of the board by order and matters discussed					
30. Risk governance					
31. Going concern assumption					
32. Directors' liabilities and indemnities					
33. Share capital and shareholder rights					
34. Share buy-back/capitalisation issue					
35. Events after the reporting date					
36. Significant acquisitions and disposals					
37. Nature of the business					

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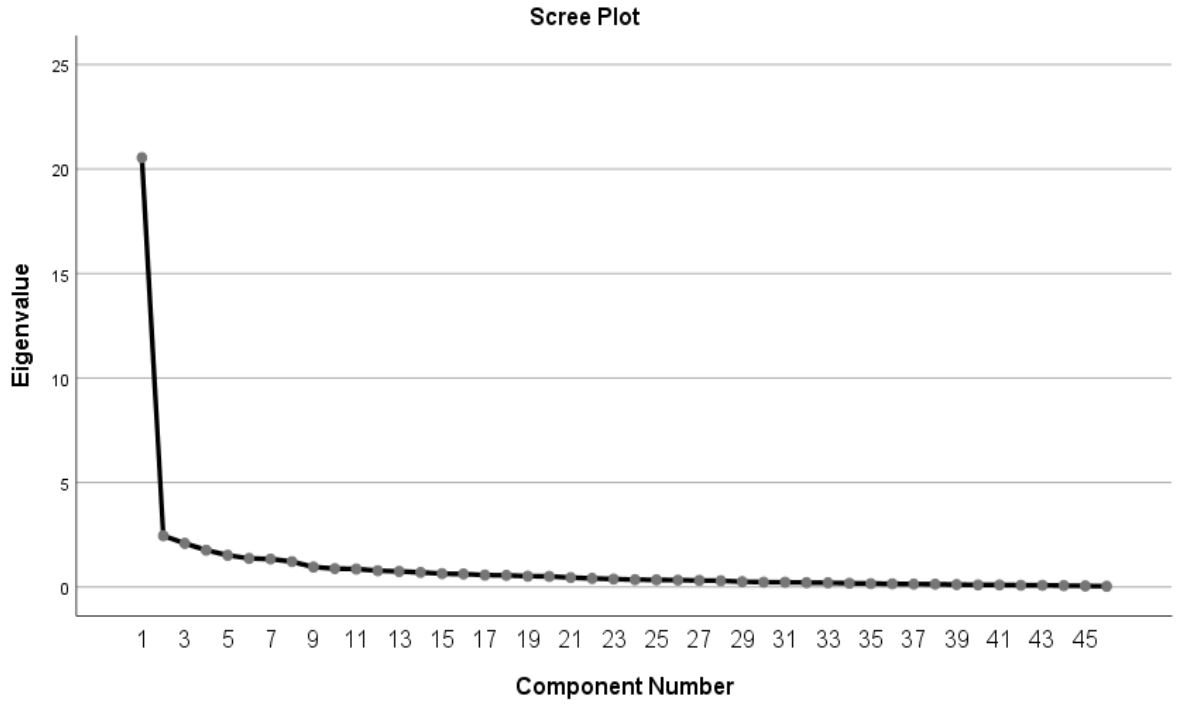
Disclosures	1	2	3	4	5
38. Succession planning					
39. Remuneration & Nomination committee terms of reference					
40. Remuneration philosophy and policy					
41. Components of remuneration					
42. Retirement and performance benefits					
43. Business rescue proceedings					
44. BBEEE Empowerment					
45. Summary of financial performance					
46. Political donations					

ISBN NUMBER: 978-0-620-92690-4

APPENDIX B: FACTOR ANALYSIS SCREE PLOT



Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20,543	44,658	44,658	20,543	44,658	44,658	4,491	9,764	9,764
2	2,452	5,330	49,987	2,452	5,330	49,987	4,487	9,754	19,517
3	2,089	4,541	54,528	2,089	4,541	54,528	4,235	9,206	28,723
4	1,762	3,830	58,359	1,762	3,830	58,359	4,109	8,933	37,656
5	1,518	3,300	61,659	1,518	3,300	61,659	4,011	8,720	46,376
6	1,368	2,975	64,634	1,368	2,975	64,634	3,890	8,456	54,832
7	1,339	2,911	67,545	1,339	2,911	67,545	3,596	7,818	62,650
8	1,213	2,638	70,183	1,213	2,638	70,183	3,465	7,532	70,183

ISBN NUMBER: 978-0-620-92690-4

Test 1 - Effect of position

Jonckheere-Terpstra Testa and Test Statistics[a,b]

	A-R factor score 1 for analysis 1	A-R factor score 2 for analysis 1	A-R factor score 3 for analysis 1	A-R factor score 4 for analysis 1	A-R factor score 5 for analysis 1	A-R factor score 6 for analysis 1	A-R factor score 7 for analysis 1	A-R factor score 8 for analysis 1
Kruskal-Wallis H	3.222	1.561	8.978	9.973	6.101	8.371	3.724	4.469
df	5	5	5	5	5	5	5	5
Asymp. Sig.	0.666	0.906	0.110	0.076	0.297	0.137	0.590	0.484
Observed J-T Statistic	1958.000	1941.000	2139.000	2244.000	2350.000	2222.000	2149.000	1647.000
Asymp. Sig. (2-tailed)	0.970	0.952	0.278	0.091	0.021	0.118	0.253	0.078

a. Kruskal Wallis Test

b. Grouping Variable: Position

Test 2 - Effect of experience

Test Statistics[a,b]

	A-R factor score 1 for analysis 1	A-R factor score 2 for analysis 1	A-R factor score 3 for analysis 1	A-R factor score 4 for analysis 1	A-R factor score 5 for analysis 1	A-R factor score 6 for analysis 1	A-R factor score 7 for analysis 1	A-R factor score 8 for analysis 1
Kruskal-Wallis H	4.923	1.701	2.552	2.009	2.692	0.621	3.172	2.698
df	3	3	3	3	3	3	3	3
Asymp. Sig.	0.178	0.637	0.466	0.571	0.442	0.892	0.366	0.441
Observed J-T Statistic	683.000	581.000	559.000	499.000	568.000	627.000	425.000	706.000
Asymp. Sig. (2-tailed)	0.298	0.980	0.846	0.429	0.917	0.629	0.126	0.204

a. Kruskal Wallis Test

b. Grouping Variable: Years' experience

ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

GAUTENG CENTRAL REGION

The Factors Impacting the Share Performance of JSE Listed Retail Companies

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ABSTRACT

The retail sector is vital to the South African economy. Therefore, it is alarming that the industry lost close to 20% of its market capitalisation over the past three years. Numerous studies have investigated the factors impacting index performance; however, studies focusing on the South African retail sector are limited. It is unknown which microeconomic and company-specific factors drive share value in this industry. In response, the purpose of this study was to examine company-specific and macroeconomic factors that impact the share performance of JSE listed retail companies. The study collected secondary data from nineteen (19) JSE listed retail companies between 2010 to 2019. Panel regression modelling was used to test the hypothesised relationships. The findings suggest that both company-specific factors and macroeconomic factors impact the share performance of South African retailers. Significant company-specific variables include the percentage sales growth, earnings per share, ROE, and the debt-equity ratio are the only significant company-specific factors. The following macroeconomic variables were found to be significant predictors of share performance in the retail sector: consumer price index, interest rate, GDP growth and employment growth. The positive and significant relationship between the debt-to-equity ratio and the share price suggests that retailers are not penalised when increasing their leverage ratios. However, retailers should protect themselves from problems by putting a ceiling on the debt they acquire. The study recommends that retailers focus on growing sales volumes and ensure that the earnings translate to profitability to attract investments.

KEYWORDS: financial performance of retail companies; JSE listed retailers; macroeconomic factors; retail share performance

INTRODUCTION

In 1974, Goldman predicted that the retail sector in developing countries would not experience any fundamental growth (Goldman, 1974). Despite this forecast, retail in South Africa grew substantially in the 1990s through the widespread increase in shopping malls and supermarkets. This growth was maintained notwithstanding the 2007/2008 economic crises (Chevalier, 2015) and resulted in lavish consumer spending, which supported economic growth during this time (Cooke, Prabu & Steele, 2016).

The retail sector is vital to the South African economy as it contributes 13,7% to the overall GDP and is responsible for 19,3% of the country's employment (StatsSA, 2020). The components of the retail sector contribute over 50% to the FTSE/JSE All-share Index in 2019 (JSE, 2019). Recently, however, this sector came under pressure losing close to 20% of its market capitalisation in the past three years (EquityRT, 2020). From an investor's perspective, changes in the share price are considered a measure of a company's performance as it reflects the perception of future value creation (Dolenc, Stubelj & Laporsek, 2012). Therefore, both retailers and investors need to understand the factors that influence this sector's share prices and performance.

Numerous international and South African studies have investigated the impact of macroeconomic factors on overall share performance (Alam & Uddin, 2009; Banda, 2017; Barra, 2010; Bonga-Bonga & Makakabule, 2010; Brown and Hasson, 2017; Celebi & Hönig, 2019; Chandra, 2009; Kloet, 2013; Mohamed & Ahmed, 2018). These studies have offered conflicting results regarding how various factors impact share performance (Bahloul, Mroua & Naifar, 2017; Kumar, 2013; Ruhomaun, Saeedi & Nagavhi, 2019; Worlu & Omodero, 2017). From a South African perspective, the conflicting results have been associated with using the JSE all-share index (ALSI) as an independent variable. The ALSI is biased towards the Top 40 companies, which represent approximately 80% of market capitalisation. As a result, the findings of such studies may not hold for medium and small capitalisation companies (Kotze, 2017). The index is further dominated by companies operating in the resources and financial services sectors. Research by Haq and Rashid (2012) stressed that economic factors have a different impact on companies operating in other industries. Also, Branger, Konerman and Thimme (2012) stated that the cyclicality of a company plays a vital role in the relationship between the economic variables and the share price.

Limited research exists, both internationally and locally, on the factors impacting the share price of the retail sector. Available literature suggests that the retail sector is affected by company-specific and macroeconomic factors (Engelbrecht, 2018; Hameli, 2018; Martínez, Galván & Alam, 2017; Rijamampianina, 2015). However, these studies have either examined macroeconomic factors or company-specific factors. Datta (2019) encouraged scholars to focus on the empirical research that tests, extends or builds retail management theory and contributes to retail sector practices. Research that simultaneously investigates the macroeconomic and company-specific factors would therefore be beneficial.

In response, this study investigated the macroeconomic and company-specific factors that significantly impact the share price of JSE-listed retailers. It is commonly accepted that global investors turn to emerging markets for growth and risk diversification (Mumo, 2017). However, the limited literature on emerging markets makes it difficult for international investors to understand the market (Al-Qaisi, 2017). This study adds to the available literature, helping investors and fund

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managers understand the retail sector's behaviour in South Africa. In addition, the results may assist retailers in making informed and effective strategic decisions on factors that are within their control without sacrificing their performance or causing volatilities in their share price.

LITERATURE REVIEW

The literature review defines the South African retail sector. It further examines empirical studies conducted in developed and developing economies on the relationship between the share price and selected macroeconomic and company-specific variables.

Companies in the retail sector are either classified as Consumer Discretionary or Consumer Staples. Consumers' discretionary products are goods and services classified as non-essential but can still consume, depending on their disposable income. These are also known as cyclical goods. The earnings of retailers that specialise in selling cyclical goods move with the business cycle. These retailers would report a good performance when the economy is booming and poor performance when the economy is in recession.

On the other hand, consumer staples are essential goods and services. These are also known as non-cyclical goods. Consumers tend to demand basic services at a constant level regardless of their price at a given time. The performance of non-cyclical retailers remains stable during upturns or recessions. Within the two classes of retailers described above, retailers can be on the food & drug sub-category or general retailers, which will be discussed below.

Types of retailers

Food and drug retailers

The food and drug retailer sub-sector include drug retailers, food retailers and the wholesaler subsectors. Supermarkets, dietary and vitamin retailers, and food-oriented convenience stores all fall under food and wholesale retailers. Drug retailers include pharmacies, distributors as well as wholesalers that serve pharmacies. Some of the major players in this sector are Shoprite Holdings, Spar Holding, Pick and Pay, Clicks and Woolworths. The companies in this category collectively make up about 5,3% of the all-share index (JSE, 2019).

General retailers

General retailers' products can be classified as either consumer staples or consumer discretionary. However, there are few consumer staples in this category. The subsectors within the general retailers include consumer durables & apparel retailers, home improvement retailers, broad retailers, consumer services and speciality retailers.

Apparel retailers

The subsector in the apparel industry includes jewellery, clothing, sunglasses, footwear and other accessories. Products offered are classified as consumer discretionary by consumers. The apparel industry accounts for about 2.5% of South Africa's manufacturing output. In 2019, the market value of apparel manufacturing was about R23 billion (Department of Trade and Industry (DTI), (2020). About 40 to 70 per cent of products in this category are imported, and in 2017 alone, the industry imported apparel worth $4 billion (DTI, 2020). However, the apparel sector has been experiencing a

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decline in sales and production for the past decade. According to the National Bargaining Council for the clothing manufacturing industry (NBC) (2015), the industry has shed over 170,000 jobs in the past 15 years and created roughly 87,057 informal employment. Some of the most prominent players in the industry are Mr Price, with a market cap of approximately R30 billion, the Foschini Group Ltd (TFG) with roughly R15 billion, and Truworths International Ltd with about R10 billion (INET BFA, 2020).

Broad-line retailers

These retailers provide a wide range of goods and services, including hardline goods such as sporting equipment, appliances or electronics and soft lines goods such as clothing, textiles, and linens. Woolworths Holdings and Massmart Holdings are the largest broad retailers in South Africa. Massmart Holdings (MSM) has a market capitalisation of around R7 billion, and Woolworths (WHL) has a market cap of approximately R29 billion. In 2019, MSM had net losses of R872 million, and WHL had a net profit of R1,52 billion (INET, 2020). The broad-line retailers experienced an accumulated net loss in 2019 of R6 billion, most of which was from Steinhoff Ltd and MSM holdings (INET, 2020).

Home improvement retailers

This category focuses on the wholesalers and retailers that sell goods to improve homes, such as furniture, carpets, building materials and garden equipment. Cashbuid and Lewis Group Ltd are the leading retailers in this subsector. The home and improvement retailers make up 20 basis points on the FTSE/JSE all-share index. The market capitalisation of the home improvement retailers is about R8 billion, with a turnover of nearly R1 billion in 2019 (INET, 2020).

Specialised consumer services

The specialised consumer services are retailers such as hair salons, schools, daycare centres, funeral services and auction houses. The largest retailers in this subsector are Advtech Ltd, with an annual turnover of R2,15 billion and Curro Holdings, with a yearly turnover of R2,66 billion. In 2019, the listed specialised customer services were worth roughly R9 billion and netted an accumulated profit of around R402 million (INET, 2020).

Speciality retailers

A speciality retail store is a retail store that focuses on specific product categories, as opposed to retailers who sell many consumer goods categories. These include automobile dealerships, automotive fuel stations independent of oil companies, electronics, automotive parts and books. The largest retailers in this category are Combine Motor Holdings, with an annual turnover of R5,72 billion and Italtile Ltd with R3,82 billion. The accumulated market cap for the speciality retailers is R39,93 billion in 2019, and the net profit for that year is R1,94 billion (INET, 2020).

Macroeconomic factors

According to Jamal and Mujtaba (2019), macroeconomic variables are external factors beyond the control of any company. Moreover, these external factors can affect retailers' performance. Investors use macroeconomic factors as signals in predicting the share price in the future (Jamal & Mujtaba, 2019).

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The macroeconomic variables selected for this study include the growth in the gross domestic product, consumer confidence, interest rate, consumer price index, and unemployment rate. These variables have proved relevant in the retail sector in South Africa as per analyst consensus and the existing literature (Broll, 2019; Chizema, 2017; Hugo, Haskell, Stroud, Ensor & Moodley, 2016).

Gross domestic product (GDP)

GDP is an essential measure for retailers as it usually directs the retail sales figures. Several researchers have studied the relationship between the GDP and the share price in developing countries and found that a high level of GDP is associated with growing share prices (Emmanuel & Samuel, 2012; Garg & Kalra, 2018; Jamal & Mujtaba, 2019). However, some others have found that this positive relationship between the share price and GDP only holds in the short run and not in the long run, while others did not find evidence of any relationship (Abaenewe, Ogbulu & Nnamocha, 2015; Coovadia, 2014; Macfarlane, 2011; Mehrara et al., 2016; Osamwonyi & Evbayiro-Osagie, 2012)

More recently, Worlu and Omodero (2017) examined the relationship between selected macroeconomic variables and the stock returns in Africa, focusing on Ghana, Kenya, South Africa and Nigeria, over the period 2000 and 2015. The results for South Africa revealed a negative relationship between the GDP and the All Share Index (ALSI). The results of Kenya's and Ghana's studies discovered no correlations between GDP and the stock market returns. At the same time, Nigeria's findings were consistent with the findings on South Africa. Therefore, the relationship between the share price and GDP revealed conflicting results for developing countries.

Although the developing countries demonstrated some inconsistency in the results, the study hypothesises a positive relationship between the retail share price and the gross domestic product in line with most findings.

Interest rates

Modern finance theory explains the relationship between share price and interest rates. Accordingly, a company's value is derived by computing the present value of the expected cash flow discounted at an appropriate discount factor (Kierkegaard, Lejon & Persson, 2006). Therefore, interest rates affect the share price through the discount factor. Interest rates also has a negative impact on the disposable income of consumers (Moya-Martínez, Ferrer-Lapeña & Escribano-Sotos, 2015).

Schrey and Wendt (2017) studied the impact of interest rates on the Icelandic stock market returns and found a negative relationship. This finding is consistent with the findings by Alam and Uddin (2009), Bjornland and Leitemo (2009), Florackis et al. (2014) and Chen and Hu (2015). This finding aligns with modern finance theory, i.e. a higher discount rate results in a lower share price. In addition, a higher interest rate increases consumer cost of borrowing on their current debt, which reduces consumer disposable income leading to low retail trade sales. Moya-Martínez, Ferrer-Lapena and Escribano-Sotos (2015) and Sensoy and Sobaci (2014) found that the correlation between interest rate and the share price is more significant during highly volatile periods.

In South Africa, Alam and Uddin (2009) found a negative relationship between the interest rate and the JSE All Share Index. The findings on the developing countries demonstrated some inconsistency. The majority have, however, shown a negative relationship between the interest rate and retail share prices. Accordingly, this study hypothesised the same relationship.

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Consumer confidence

Consumer confidence (CC) is viewed as a critical variable, reflecting a country's economic health. The index is commonly used to forecast the country's short-term economic outlook (Bathia & Bredin, 2013). Generally, when consumers are confident about their income, they spend more, consequently growing the economy and the share prices. Görmüş and Güneş (2010) found a positive relationship between consumer confidence and the share prices, based on evidence from Turkey. Celik, Aslanoglu and Uzun (2010) and Güneş and Çelik (2010) also found a positive relationship between the CC and share prices in South Africa and other developing countries. An increase in CC, therefore, contributes to rising share prices due to increased consumer spending.

However, noise traders and noise buyers can cause the relationship between prices and CC to deviate from this fundamental assumption, creating a negative relationship between the two variables (Ferrer et al., 2014). Fernandes, Gonçalves and Vieira (2013) studied the impact of CC on stock exchange performance and found a negative relationship for both current and future performance. Ayuningtyas and Koesrindartoto (2014) reached similar conclusions based on the data from the Indonesian stock exchange.

Despite the inconclusive evidence in developing countries, the results hypothesise a positive relationship between consumer confidence and share price in the retail sector.

Consumer price index (CPI)/ Inflation

According to Celebi and Hönig (2019), inflation causes a difference between nominal and real numbers and can change the spending behaviour of consumers. Unlike the developing countries, most developed countries have low inflation rates. Low inflation is mainly linked to structural factors such as new technology, debt level, or the inversion of the yield curve (Lv, Liu & Xu, 2019).

Nelson (1976) and Jonsson and Reslow's (2015) found a negative relationship between the USA's inflation and share prices in the USA. Similarly, Megaravalli and Sampagnaro (2018) reported a negative relationship between the share price and the interest and inflation rates. Alagidede and Panagiotidis (2010) investigated whether the stock exchanges in Africa can protect investors against inflation. The results show a positive relationship between share price and CPI. Banda (2017) also found that an increase in the inflation rate leads to a rise in share prices of JSE listed industrial companies. Junkin (2012), however, reported a negative relationship between the inflation rate and the JSE All-share index. Once again, the results in developing countries were found to be inconsistent. Despite the inconclusive results for developing countries, the study hypothesises a negative relationship between the CPI and share prices.

Unemployment rate

The stock exchange usually reacts positively to an announcement of employment increases and badly to reports of employment decreasing. Larsson and Mörling (2015) investigated the relationship between the unemployment rate and the share price and found a negative relationship. These findings are consistent with the results found by Yashiv (2005). The study, therefore, hypothesises a negative relationship between the unemployment rate and share price in the retail sector.

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Company-specific factors

Company-specific variables are mainly determined by observing the company's financial position. Previous studies have indicated that these factors include sales growth rates, leverage, liquidity, earnings, profitability, etc. Drummen and Zimmermann (1992) studied factors that influence the European share price volatility and found that company-specific factors affect more than 50% of the share price.

Sales growth

Rising income signals growth and creates a positive impression of the company's future potential. Therefore, it is not surprising that analysts and investors have shifted their attention to the top line rather than only relying on earnings figures (Ali & Hayek, 2018).

Hartono (2004) studied the relationship between sales and share prices and found a positive relationship. Similar findings were also reported in other developed economies (Ahmed, Nanda & Schnusenberg, 2010; Ali & Hayek, 2018; Hsueh Fang, Shu Hua & Yann Ching, 2006; Jegadeesh & Livnat, 2006; Malhotra & Tandon, 2013). However, one study found no relationship between sales growth and share performance (Jegadeesh & Livnat, 2006). Despite the inconsistent findings, the study hypothesises a positive relationship between sales growth and retail share prices.

Gross margin

The Gross margin (GM) is an essential ratio for the retail sector. Nizam and Hoshino (2016) reported a positive relationship between the GM and the share price. These results were confirmed by Styan (2017), Arkan (2016) and Bayrakdaroglu, Mirgen and Kuyu (2017). This study, therefore, hypothesises a positive relationship between gross margin and share price in the retail sector in line with previous literature.

Operating margin

The operating margin (OM) is essential in the retail sector because they have high operating costs (Rahilly, 2019). In developed markets, revenue has either slowed or declined (Engelbrecht, 2018). In addition, customers there are putting pressure on retail companies, bargaining for discounts. Several studies have been conducted in developed countries and found a positive relationship between share price and OM (Anwaar, 2016; Fortune, 2000; Tumurkhuu, Wang & Lions, 2010). However, some studies have reported a negative relationship between share prices and OM in other developing countries, especially in studies whose data is based in Amman and Borsa Istanbul (Allozi & Obeidat, 2016; Cengiz & Püskül, 2016; Durrah et al., 2016).

Despite the inconclusive results in developing countries, the study hypothesises a positive relationship between operating margins and share price in the retail sector.

Earnings per share (EPS)

EPS is an indicator that illustrates the amount of profit made by shareholders per each ordinary share in the company. An increase in EPS is a good indicator of the company's profitability and is therefore widely used by investors/analysts (Anwaar, 2016).

The relationship between EPS and the share price has been widely studied. Malhotra and Tandon (2013) found a positive relationship between the share price and the EPS of 100 companies listed

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on the New York stock exchange. Similar results were reported by Truong and Ma (2015), who conducted a study in Sweden.

Anwaar (2016), however, found a negative relationship between the two variables. The reason is that when EPS increases, investors focusing on short-term gains sell their shares, which results in the share price dropping due to excess supply. This phenomenon was confirmed by Mogonta and Pandowo (2016). Nel (2009) investigated the price multiples commonly used in the South African equity market and how these multiples affect the share price of companies in different sectors. The study found that the PE ratio, EPS, price-to-book value per share (P/BVPS), and MVIC/EBITDA are best suited for forecasting the share returns for the retail sector.

Despite the inconclusive results, in line with most findings, the study hypothesises a positive relationship between EPS and share price in the retail sector.

Debt to equity ratio

Choosing the optimal capital structure is an important decision (Damodaran, 2016). Several studies investigating the relationship between debt and equity demonstrated a negative relationship between the share prices and debt to equity ratio (Bahreini, Baghbani & Bahreini, 2013; Raza et al., 2012; Wildatunjanah & Suparningsih, 2019). In addition, Winn (2014) found that companies with smaller leverage ratios earn at least 3,4% more return than those with larger leverage ratios. This result shows how important it is for the company to find an optimal debt-to-equity ratio that maximises its value and share price.

As highlighted previously, developed countries have lower interest rates and inflation rates than developing countries. The cost of debt in developing countries is, therefore, higher than in developed countries. Damodaran (2016) investigated the relationship between the debt to equity ratio and a company's performance, specifically focusing on developing countries and identified a negative relationship. The study recommended that, particularly in developing countries, companies should use equity funding. These results are consistent with Nassar's (2016), who stated that companies operating in developing countries reduce the high cost of debt by using more equity in their capital structure. This finding suggests that the optimal capital structure for developing countries is at a lower debt level than that for developed countries.

This study hypothesises a negative relationship between the debt to equity ratios and the share prices in the retail sector in line with previous studies' findings.

Total asset turnover

Total asset turnover (TAT) shows the company's ability to use assets in generating sales revenue. A high TAT reflects better efficiency within a company, and it provides both investors and creditors insight into the internal management of a company. Higher sales can enhance TAT, and a higher TAT can make creditors charge less for debt (Durrah et al., 2016).

Several studies have shown how this ratio affects the share price. Patin, Rahman and Mustafa (2020) found a positive relationship between TAT and share prices. Durrah et al. (2016) also found a significant relationship between TAT and stock returns for focusing on food and beverage retailers listed on the Indonesian stock exchange.

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This study, therefore, hypothesises a positive relationship between total asset turnover and share price in the retail sector.

Quick ratio

The liquidity ratio measures companies' ability, excluding inventory, to meet their short-term obligations. Highly liquid companies are less risky and are allocated less cost of capital which increases the share price. However, too much liquidity shows a conservative approach in handling funds.

Eya (2016) investigated the relationship between liquidity ratios, including quick ratios, and the share prices in the retail sector in Nigeria. The results indicate that there is a positive relationship between the share price and the quick ratio. Fun and Basana (2012) also found a weak but positive relationship between the quick ratios and share prices.

The previous literature hypothesises a positive relationship between quick ratio and share price in the retail sector.

Return on equity (ROE)

A higher ROE shows better performance by a company, which affects the company's share price (Patin, Rahman & Mustafa, 2020). This ratio shows how effectively management uses shareholders' money, and thus many companies in the retail sector use ROE targets to pay performance bonuses (Ahmed, Awan, Safdar, Hasnain & Kamran, 2016).

According to Manoppo (2015), ROE influences the share price. An increase in ROE generally causes the share prices to increase. These findings were confirmed by Patin, Rahman and Mustafa (2020); Manoppo (2015); Allozi and Obeidat (2016) and Nizam and Hoshino (2016). However, studies by Midesia, Basri and Majid (2016) and Mogonta and Pandowo (2016) found that share prices remain unchanged or decline after an increase in ROE. The reason is that analysts and portfolio managers forecast this ratio for the company for several future periods and invest accordingly. If the forecasted ROE is higher than the actual increase in ROE, share prices will decrease.

RESEARCH METHODS

Sampling and data collection

There are 38 JSE Listed retail companies. Data was collected for JSE retailers that were listed from 2010 and 2019. Twenty companies met the criteria, but the Steinhoff Group was omitted, as an initial analysis of variables identified them as an outlier.

Company-specific information was obtained from the financial statements or ratios from EquityRT. Data relating to the interest and inflation rates and consumer confidence was sourced from the South African Reserve Bank (SARB). Economic growth and employment data were collected from the Statistics South Africa website (StatsSA, 2020). Semi-annual data was collected from June 2010 to December 2019.

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Data analysis

In line with other similar studies (Alam & Uddin, 2009; Celik, Aslanoglu & Uzun, 2010; Hassani, 2014; Ncube, 2011; Parlakkaya & Kahraman, 2017), this study used panel regression techniques to analyse data. Panel regression is appropriate when dealing with data that consist of both cross-sectional elements and time series (De Jager, 2008). The time series/period effects in the study are the macroeconomic variables. The company-specific factors represent the cross-sectional data

The following panel regression model was used:

$$SP_t = \alpha_0 + \alpha_1 CCI_t + \alpha_2 CPI_t + \alpha_3 QR_t + \alpha_4 DE_t + \alpha_5 EMPL_t + \alpha_6 GDP_t + \alpha_7 INTRATE_t + \alpha_8 OM_t + \alpha_9 GSALES_t + \alpha_{10} TAT_t + \alpha_{11} ROE_t + \alpha_{12} GM_t + \alpha_{13} EPS_t + \in_t + \omega_{it}$$

Where:

$SP = share\ price$

$\alpha_0 = the\ intercept$

$\alpha_{1\ldots}\alpha_{13} = coefficients\ of\ the\ independent\ variables$

$\in_t = error\ term$

$\omega_{it} = the\ panel\ regression\ erro\ term$

Table 1 provides a breakdown of the independent variables

Table 1: Independent variable, abbreviations and measurement

Independent variable	Abbreviation	Measurement
Return on equity	R*OE*	*ROE= Net Income/ Average total equity*
Operating margins	*OM*	*OM = (Operating Profit/ Revenue) x 100*
Growth in sales	*GSALES*	*GSALES = (Sales – Sales (-1))/ Sales (-1)*
Gross margin	*GM*	*GM = (Revenue – Cost of sales)/ Revenue*
Earnings per share	*EPS*	*EPS= Total earnings/ Outstanding number of shares*
Total assets turnover	*TAT*	*TAT= Total sales/ Average total assets*
*Q*uick ratio	*QR*	*QR= (Current assets - Inventory)/Current Liability*.
Debt to equity ratio	*DE*	*DE = Total debt/Total Equity*.
Unemployment rate	*EMPL*	*This is the unemployment rate as per StatSA figures*
GDP growth	*GDPG*	*This is the GDP growth rate as per StatSA figures*

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Interest rate	*INTRATE*	*This is the repo rate interest rate reported by the South African Reserve Bank*
Consumer price index	*CPI*	*The CPI figures by StatSA*
Consumer confidence index	*CCI*	*Information on the consumer confidence index was obtained from StatsSA reports.*

E-Views version 10 empirical modelling software was used to run the pooled regression, fixed effects (FE), and random effects (RE) models for each dependent variable. The best model was then selected based on the redundant effects test and the Hausman test (Brooks, 2014). A 90% confidence interval was used as a threshold of significance (Brooks, 2014).

Data distribution

The data distribution was analysed to identify any outliers in the data. The central tendency was observed through the mean, median and mode of the data set.

The dataset showed a positive skewness for all variables except for the GDP growth and the interest rate. A positive skewness on share price and ROE was expected. Investors prefer including shares in their portfolios with positively skewed distributions and are willing to pay a premium for such shares. Several studies have confirmed this notion, refuting the symmetrical distribution of these measures (Omed & Song, 2014; Singleton & Wingender, 1986).

The kurtosis of most independent variables suggests that their distribution is leptokurtic. Interest rate, CPI, consumer confidence index and total asset turnover distributions are, however, platykurtic. Leptokurtic distributions show that the investment returns may be affected by extreme events, whether positive or negative. The platykurtic distributions are associated with low levels of risk as there is a low probability that the variable will experience extreme events. In this case, the interest rate and inflation rate have the lowest level of risk, as we may expect, because, unlike other variables, their risk is controlled and capped within a specific target range determined by the reserve bank.

Lastly, the standard deviation of the dependent variable (142.61) indicates that the retail sector is volatile. According to Snyman and Smith (2019), the annualised standard deviation of the JSE all-share index is roughly 21%. The high variation highlights the notion that the sector faces more pressure than other sectors.

RESULTS

The redundant fixed effect model was run, indicating that the FE model was more suitable for the study than the pooled regression model. In addition, the Hausman test revealed that the FE model is better suited for the study than the RE model. As a result, the study adopted the FE model. Based on the results of the initial models, backward elimination, as outlined by Faraway (2009), was applied to remove statistically insignificant independent variables. Variables were removed if they met two of the following three criteria:

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- If the independent variable is statistically insignificant at a 90% confidence level for all three models;
- If the removal of the independent variable does not reduce the adjusted R-squared significantly; and
- If the independent variable correlated more than 50% with at least two other independent variables.

The following variables do not significantly impact the share performance of South African retail companies: the confidence index, the quick ratio, the total asset turnover, and the operating profit margin. Consumer confidence may have a delayed effect on the share performance, explaining the non-significant relationship.

The results of the FE model is provided in Table 2.

Table 2: Final FE model explaining retail share price movement

Variable	Coefficient	P-value
Constant	74.998	0.218
Consumer price index	-6.960	0.041**
Change in unemployment	-0.004	0.016**
GDP growth %	0.021	0.003***
Interest rate	9.716	0.056*
Sales growth %	8.462	0.005***
Debt to equity ratio	7.561	0.010**
Return on equity	5.030	0.009***
Gross margin %	-4.086	0.152
Earnings per share	9.231	0.000***
Adj R- Squared	0.897	

*, **, *** significant at confidence interval 90%, 95% and 99% respectively
Source: E-views® version 10

The FE model revealed an R-squared of 0.897, which means that the variables explain close to 90% of the variation in South African retail share prices. The coefficient describes the direction of the variable, which is negative for an increase in the CPI, unemployment rates and gross margins. A positive relationship was reported for the remainder of the variables.

The results show that both company-specific factors and macroeconomic variables have an impact on the share price. Of the variables selected, only gross margin was not significant in driving the share price of the retailers.

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DISCUSSION OF THE RESULTS

The results show that both company-specific factors and macroeconomic variables have an impact on the share price.

The company-specific factors that impact the performance of retail shares

Sales growth rate

The growth in sales is statistically significant. The positive relationship between growth in sales and share price is consistent with the findings of Hsueh Fang, Shu Hua and Yann Ching (2006), Jegadeesh and Livnat (2006) and Ali and Hayek (2018). In developing countries, Hsueh Fang, Shu Hua and Yann Ching (2006) went so far as to recommend that sales direction should be used to predict share prices. The reason is that growth in sales increases earnings, which is attractive to investors, ultimately increasing the share price. It is therefore recommended that retail companies focus on implementing strategies to grow sales revenue.

Earning per share (EPS)

As expected, the study found a positive relationship between the earnings per share ratio and share performance. The positive relationship between earnings per share and the share price is consistent with the literature and is one of the relationships most researchers agree on (Mirfakhr et al., 2011; Truong & Ma, 2015). The study results are consistent with Nel (2009), who found a positive relationship between earnings per share in the retail sector and share prices in developing countries. These findings indicate that investors still look at profits attributable to shareholders when making investment decisions.

Debt to equity

The FE model presented a statistically significant positive relationship between the debt to equity ratio and the share price at a 95% confidence level. The reported relationship is inconsistent with the literature as previous research mainly reported a negative relationship (Bahreini, Baghbani & Bahreini, 2013; Wildatunjanah & Suparningsih, 2019). In SA, most retailers expanded their operations across Africa (Dakora, Bytheway & Slabbert, 2014). The findings suggest that investors do not penalise retailers for the increasing debt to expand operations. This finding is in line with Miller and Modigliani's theory, which states that it is irrelevant whether the companies' projects are funded by debt or equity (Miller & Modigliani, 1963).

Return on equity (ROE)

The FE model demonstrated a positive and statistically significant relationship between the return on equity and the share price at a 99% confidence interval. This positive relationship is consistent with the hypothesis that return on equity positively impacts the share price. The finding is in line with the results of Damodaran (2007), Allozi and Obeidat (2016) and Anwaar (2016). This result further supports the findings relating to EPS. Mogonta and Pandowo (2016) stated that when making investment decisions, investors compare the ROE of a company with the long-term average returns of the index. Higher returns should therefore translate into increased demand for the share.

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The macroeconomic factors impacting retail share performance

Growth in GDP (GDPG)

The FE model shows a positive relationship between the SP and GDPG, which is statistically significant at a 99% confidence level. These findings are consistent with previous literature (Branger, Konermann & Thimme, 2012; Haque & Sarwar, 2012; Jamal & Mujtaba, 2019; Savchenko, 2015). Karunanayake, Valadkhani and Brien (2012) notes that GDPG increase during a boom period causes spending in a country to increase, thus driving earnings of retail companies upwards. The opposite occurs during times of recession.

Interest rate

The SP model indicates a positive and significant relationship between interest rate and the share price. The majority of researchers in the literature found a negative relationship between interest rate and share price. The positive relationship between the interest rate and share price is inconsistent with previous literature (Alam & Uddin, 2009; Bjornland & Leitemo, 2009; Chen & Hu, 2015; Florackis et al*.,* 2014). Geske and Roll (1983) found similar results and reasoned that changes in interest rate structure trigger delayed reactions from investors, as interest rates increase when GDP is in a growth phase. However, the positive relationship signals that the expected return in the sector increases when the interest rate increases, driving demand for shares.

Unemployment rate

The FE model reported a significantly negative relationship between the share price and unemployment growth at a 95% confidence level. This finding is consistent with the said findings in the literature, as they found a negative and significant relationship between the share price and the unemployment rate (Larsson & Mörling, 2015; Yasiv, 2005). As unemployment rates increases, disposable income decreases, resulting in less spending.

Consumer price index (CPI)

The model showed a statistically significant negative relationship between the share price and CPI. This finding was consistent with the literature (Chauque & Rayappan, 2018; Junkin, 2012; Keswani & Wadhwa, 2019; Mabandla, 2018; Olweny & Omondi, 2011).

CONCLUSION

The results of the study revealed that both macroeconomic and company-specific variables impact retail share prices. The high correlation between sales growth, EPS and ROA confirm that investors and analysts are still focusing on a company's short term financial performance when making investment decisions. The debt-equity ratio also has a significant impact on retail share prices. In line with general finance theory, retail managers who wish to improve share performances should focus on strategies to grow sales even if they require additional debt.

It is, however, vital that the inter-relationships between the company-specific and macroeconomic variables are not overlooked. This study demonstrates that favourable economic conditions, such as lower inflation and unemployment rates, should translate into more disposable income, positively impacting retail sales. In turn, continuous sales growth also result in higher earnings per share and ROE ratio. Visa versa, it is should be regarded as reasonable to blame unfavourable economic

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conditions on poor performance in the retail sector. Given the importance of the retail sector to the South African economy, the government actively develop plans to reduce the country's unemployment and inflation rates.

Therefore, it is recommended that retail companies aiming to outperform the market focus on improving sales during unfavourable economic conditions. Such companies need to be innovative and find ways to beat competitors to secure growth. Currently, such initiatives may involve improving online sales revenue.

This study did not include any unlisted retail companies. Obtaining information on private retail companies is problematic since it is not available to the public. Therefore, the assumption is that the factors impacting listed retailers should also affect unlisted and small retailers.The study was conducted before the COVID19 pandemic. It is expected that lower disposable income levels from 2020 to 2021 will impact the retail industry negatively (STATISTICA, 2021). Future studies should therefore analyse the impact of this event on the retails sector.

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

GAUTENG CENTRAL REGION

Working Capital Management and Profitability: An Industry Analysis

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ABSTRACT

This paper investigated the effect of working capital management on company profitability within a South Africa context and determined whether the relationship that was found differed depending on the sector to which the entity belonged. In achieving this objective, companies listed on the JSE were investigated over five years extending from 2012- 2016. The results of multiple regression analysis revealed that when the relationship between working capital management and profitability was considered for the Johannesburg Stock Exchange (JSE) as a whole, no significant relationship was observed. However, the analysis of the results by sector revealed that the basic materials, industrials, and technology sectors had a significant negative relationship between accounts receivable days and profitability. The basic materials sector revealed a significant positive relationship between accounts payable days and profitability and the technology sector revealed a significant positive relationship between inventory days and profitability. It can thus be seen that the relationship that may exist when considering the JSE in totality may not be true for companies in different sectors. This may assist working capital investment decisions of companies in specific industries where the relationship is known.

KEYWORDS: Accounts payable days; accounts receivable days; inventory days; JSE; sector; working capital

INTRODUCTION

South Africa has been the subject of political instability in recent years, with foreign investment steadily declining. Foreign investment is of particular importance in developing countries where the financial infrastructure and lending capabilities are limited (Ge & Qiu, 2007). The recent downgrade to junk status and the COVID-19 outbreak and lockdown further add to the financial pressure placed on South African companies. Statistics show that the South African economy has contracted by 2.7% in the past year (Statistics South Africa, 2021). Given the challenges faced, it is essential that entities, regardless of the industry in which they operate, know how best to manage their resources and claims, which include working capital, to maximize profitability.

Working capital consists of the current assets and current liabilities of the entity. These components make up a substantial portion of the balance sheet and occupy a great deal of management's time. More than 60% of management's time is spent managing the short-term activities of the entity (Gitman & Maxwell, 1985). Effective management of these elements is essential as the composition and level of short-term assets within an entity cannot be altered with as much ease as is the case with long-term assets (Nazir & Afza, 2009).

The relationship between working capital management and firm profits has been considered in previous research, without distinguishing results depending on the company sector. Where the company sector has been considered, results have been restricted to a specific sector, rather than noting differences between the sectors (Deloof, 2003; Jagongo & Makori, 2013; Padachi, 2006; Raheman et al., 2010). Companies that are listed on the JSE fall into several sectors and sub-sectors and are exposed to different risks both internally and externally (JSE, 2013). The differences that exist between the sectors will result in different working capital practices which could affect the extent to which working capital alters company profits (Filbeck & Krueger, 2005).

The research in this paper addresses two research questions; is there a relationship between working capital management and profitability and does this relationship change depending on the industry in which the entity operates?

LITERATURE REVIEW

Much research has been performed to identify the effect of working capital management on firm profitability (Deloof, 2003; Erasmus, 2010; Lazaridis & Tryfonidis, 2006; Padachi, 2006; Samiloglu & Akgün, 2016). Studies have been performed in many countries and sectors across the world with many of these studies revealing different findings. A longer cash conversion cycle could increase firm profitability by increasing sales as people will have a longer time to make payments. It could also, however, decrease profitability due to an increase in bad debts. A shorter cash conversion cycle is likely to increase profits as the entity will have cash on hand to meet short-term obligations and lower interest will have to be paid to fund a longer cash conversion cycle (Deloof, 2003). Both arguments are acceptable creating the need to investigate further as to whether there is a clear link between specific working capital management policies and profitability.

ISBN NUMBER: 978-0-620-92690-4

Working capital and management of working capital

Working capital includes only the current assets of the entity that are ready for use in the day-to-day operations of the entity. Net working capital, on the other hand, results when the current liabilities of the entity are deducted from the current assets of the entity. Current assets and liabilities are those assets and liabilities that will be receivable or payable within 12 months (Correia et al., 2015). Management of working capital involves the planning and use of these current elements in a sustainable manner (Raheman & Nasr, 2007).

The risk of investing too little or too much in working capital should be considered in managing working capital (Eljelly, 2004). A balance should be found between the twin goals of the company, which are liquidity and profitability (Kaur & Singh, 2013a). More liquidity may result in a lower risk of defaulting on short-term commitments, but too much cash could mean lost investment opportunities (Padachi, 2006). The management of working capital is not always as simple as investing more or less in inventory. The dynamic nature of the business makes working capital requirements difficult to predict and the lag in the information available to a company may result in the entity investing in levels of working capital that are not operationally efficient (Kaur & Singh, 2013a).

There are three main components of net working capital; accounts receivable, accounts payable, and inventory (Correia et al., 2015). The effective management of these components will be discussed in the paragraphs that follow.

The level of accounts receivable within the entity can be altered by the credit terms and credit-granting requirements of the company. The management of accounts receivable consists of five tasks, namely: risk assessment of the customer, setting credit terms, financing of the debtor, collection of amounts from the debtor, and lastly, while all these tasks take place the risk of default will be borne by the company (Mian & Smith, 1992). Selling on credit improves sales as there is increased access and power over the market, allowing a level of price discrimination and there is the advantage of interest income if the customer pays late (Mian & Smith, 1992). Although the company will be able to boost sales, too great an investment in accounts receivables may result in liquidity issues (Deloof, 2003). Increased credit sales may also reduce profits by way of bad debt expenses and settlement discounts offered to incentivize customers to pay outstanding amounts (Deloof, 2003).

Increasing accounts payable could be beneficial to the entity as the company will be receiving an interest-free, flexible source of financing. However, increasing accounts payable could result in increased costs for the company as the entity will not be able to take advantage of any settlement discounts that are offered by the supplier. By making purchases on credit, the entity is also able to inspect the quality of the product that they have bought before committing to payment (Deloof, 2003). The last component of working capital management is the management of inventory. Inventory should be managed in such a way as to ensure that costs are minimized (Deloof, 2003). These costs include holding costs, ordering costs and costs that are incurred should a stock-out occur. Just-in-time (JIT) inventory management focuses on efficient inventory management with minimal amounts of inventory on hand (Chapman, 1989). Although holding costs will be reduced, this inventory method results in increased ordering costs.

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An entity may decide on an aggressive working capital policy (where trade payables are used as a major source of funding and current asset investment is minimized) or a conservative working capital policy (high levels of current assets and the use of long-term financing) (Nazir & Afza, 2009). Generally, an aggressive policy is associated with higher risk and a higher possible return (Nazir & Afza, 2009). The policy that is selected by a company will depend on the industry in which the entity operates as this may affect the company's ability to pay suppliers or to change credit policies (Filbeck & Krueger, 2005).

Factors influencing company profitability

Many factors have been found to affect company profits other than working capital management. These variables need to be controlled when determining the effects that working capital management has on company profitability. Three main factors that affect company profitability have been identified in previous research efforts; firm size, capital structure, and sales growth (Deloof, 2003; García-Teruel & Martínez-Solano, 2007; Lazaridis & Tryfonidis, 2006; Nazir & Afza, 2009; Padachi, 2006). These three factors are discussed below.

Firm size

The larger the company, the greater the capital available to the company as larger companies will have access to greater sources of funding than smaller companies. As a result, larger companies will have an increased level of investment and higher profits (Hall & Weiss, 1967). The size of the company may also affect profits as larger companies can take advantage of economies of scale (Glancey, 1998).

Capital structure

The capital structure of the company has been found to have a significant effect on company profits (Abor, 2005). There are several theories regarding the optimal capital structure that should be employed by the entity to ensure that returns are maximized. Among these theories is that of Miller and Modigliani (1958) where there is an optimal capital structure that should be achieved. Another widely believed theory is the Pecking Order Theory in which there are preferred financing sources within the entity (Correia et al., 2015). The most attractive source of funding would be retained earnings as this would reveal little information about the entity and its operations to external parties (Correia et al., 2015). A more recent development reveals that there may be a range of combinations of debt and equity financing within the entity that ensures that the value of the entity is maximized (Correia et al., 2015).

Sales growth

The growth in company sales may affect profitability. High growth will lead to increased sales and thus increased profits which will allow the company to invest more and grow profits into the future. However, the company may grow too quickly without the required resources or force growth in markets where it cannot be sustained (Steffens et al., 2009). Company sales growth should thus be controlled for in investigating the effect that working capital management will have on company profits.

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Industry effect on working capital management

García-Teruel and Martínez-Solano (2007) found in their study of small and medium-sized enterprises (SMEs) that companies within the mining industry and the services sector have the highest return on assets when compared to other sectors. They also found that the average accounts receivable days differed significantly between the different sectors. Previous research performed has yielded conflicting results as to whether industry affects the relationship between working capital management and profitability (Beaumont Smith & Fletcher, 2009; Chiou et al., 2006; Hawawini et al., 1986). Filbeck and Krueger (2005) found that companies within the same industry have distinct levels of working capital and these levels tend to remain constant over time and differ per industry.

Working capital management by sector

The nature of the operations of entities that fall within different sectors of the JSE is significantly different. These differences in operations may result in a different level of emphasis being placed on working capital management and a different ability to change working capital levels as well as a different relationship being observed between the various components of working capital and profits (EY, 2016). It is important to note that industries do compete with one another, so while one industry may be trying to increase the amount of time to pay their creditors, those creditors are trying to reduce the amount of time taken to collect cash from customers.

Basic materials companies such as mining and forestry companies are subject to changes in raw materials and as such are more affected by the state of the economy (PWC, 2016). The fact that the output of these types of companies is globally traded gives rise to exposure due to volatility in global markets (Tufano, 1996). Interestingly, research carried out by PWC (2016) indicated that there has been a decline in the profits of basic materials entities despite these entities tightening their working capital management policies.

The consumer goods sector has seen an increase in focus on working capital management (PWC, 2014). Troubling to note is that despite literature indicating that profits could be improved by effectively managing working capital, on average, companies within the consumer goods sector were only able to reduce their cash conversion cycle by 1.7 days per year (The Boston Consulting Group, 2010). It may thus not be possible to manage working capital at the level of efficiency required to ensure improved profits (The Boston Consulting Group, 2010). Within the consumer goods sector, it is very difficult to maintain effective working capital management in the long term due to the high levels of competition that exist in this sector and increasing input prices. It has been found that many companies end up increasing their cash conversion cycles over time (The Boston Consulting Group, 2010).

The PWC report on working capital identifies that the healthcare sector has managed to reduce their levels of net working capital from 2012 by over 4% (PWC, 2017).

The Industrials sector makes up a large portion of the JSE. These industrial firms generally have high inventory levels and are involved in manufacturing. It is expected that their operating cycle is higher than those non-manufacturing companies. Research into the effect of working capital management in the manufacturing sector found that lower profits were associated with a higher level of accounts receivable and inventory (Padachi, 2006). In manufacturing companies, the focus is on

ISBN NUMBER: 978-0-620-92690-4

inventory when trying to improve working capital management (PWC, 2014). Research carried out in India indicates that there is a strong negative relationship between the cash conversion cycle and company profitability when considering companies that form part of the IT sector (Kaur & Singh, 2013b). Another sector into which companies may be classified is the telecommunications sector. Telecommunication companies make use of complex billing arrangements and installment sales agreements, all of which place additional pressure on the management of working capital and the ability to change working capital levels (EY, 2014). Again a large variance was noted in the working capital management of the different companies within the telecommunications industry (EY, 2014). The major area of focus for increased working capital efficiency in the telecommunications industry is the management of accounts receivable (EY, 2014).

The effect of working capital management on profitability

Deloof (2003) tested the relationship between working capital management and profitability of 1009 Belgian firms over the period extending from 1992-1996. A negative relationship was observed between trade payable days and profitability, as measured by gross operating profit (Deloof, 2003). A possible explanation put forward for the relationship observed was that less profitable firms will take longer to pay their debts. This finding is an indication that the firm profits drive the working capital management and not the converse. Alternatively, companies that pay debts later are not able to take advantage of settlement discounts, reducing profits. Deloof (2003) found that when analyzing the relationship between accounts receivable days and profit as well as the relationship between inventory days and profits, a negative relationship existed. Possible explanations posed by Deloof (2003) are that in less profitable companies, customers require more time to inspect products for quality, resulting in a longer time to receive payment. The negative relationship with inventory days could be a result of declining sales, causing a greater level of inventory to be on hand. With a greater level of inventory on hand, inventory holding costs and costs of obsolescence increase. With an increase in costs, profits will decrease. These results were found to be true in a Greek environment (Lazaridis & Tryfonidis, 2006). An interesting explanation posed for the negative relationship between inventory days and firm profitability is that firms that have longer inventory days have more money tied up in working capital and as a result, the management of the entity is unable to move those funds to other areas of the entity to ensure the increased profitability of the entity (Lazaridis & Tryfonidis, 2006).

Garcia-Teruel and Martinez-Solano (2007) found that, like Deloof (2003), when working capital management is measured using the cash conversion cycle, the shorter the cash conversion cycle the greater the profit will be. However, it was found that no significant relationship existed between accounts payable days and firm profits.

Results in conflict with the above three research efforts were found by Alipour (2011), where a positive relationship was noted between the accounts payable days and gross operating profit (Alipour, 2011). This relationship between accounts payable days and firm profits was also observed in research performed by Ngwenya (2012).

Common to all the research discussed up to this point is that a negative relationship exists between the cash conversion cycle of the company and the profitability of the company. However, the individual relationship between each of the components of working capital and profitability has differed. Research into how each of the components of working capital affects profits is required,

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rather than looking at the cash conversion cycle in totality. Research has been conducted in the USA and in emerging economies where the opposite relationship between working capital management and profitability was observed (Abuzayed, 2012; Gill et al., 2010).

Research to date has not been conclusive on the specific working capital policy that will ensure increased company profitability. However, what is common to all research that has been discussed in this literature review is that working capital management is a significant determinant of company profitability.

METHODOLOGY

The objective of this paper is to identify whether a significant relationship exists between working capital management and profitability and to determine whether this relationship will differ depending on the sector to which the entity belongs. Two research questions were asked:

1. Is there a significant relationship between working capital management and firm profitability?
2. Does the relationship between working capital management and profit differ depending on the firm sector?

To answer the research questions a quantitative approach was adopted. The data was analyzed using descriptive statistics and multiple regression analysis. Descriptive statistics were calculated using Microsoft Excel. All regression analysis was conducted using the statistical package R. Regression analysis took the form of multiple regression analysis using panel data analysis.

Population and sample

The population of the study comprised of the companies that are listed on the JSE. The companies were divided into sectors by the sector classifications as defined by InetBFA. 8 main sectors will be investigated namely: Basic Materials, Consumer Goods, Consumer Services, Healthcare, Industrials, Oil and Gas, Technology and Telecommunications. The financial sector was not included in the analysis because the working capital policies of financial companies are highly regulated. The sample of the study will thus consist of 192 companies that are listed on the JSE after removing companies that did not have any of the components of working capital that were investigated. The study was conducted over a 5-year period from 2012-2016. This is consistent with previous research, where a five year period has been used (Deloof, 2003; Eljelly, 2004; Lazaridis & Tryfonidis, 2006)

Variables

The variables that were used in this study have been informed by previous research (Deloof, 2003; García-Teruel & Martínez-Solano, 2007; Lazaridis & Tryfonidis, 2006).

Independent variables

The independent variables in this study are measures of the working capital management of the entity. The independent variables are calculated using annual year-end balances extracted from the entities' financial statements. The variables used in this study have been used effectively in previous research (Deloof, 2003; García-Teruel & Martínez-Solano, 2007; Lazaridis & Tryfonidis, 2006).

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There are 4 independent variables, namely:

- Accounts receivable days: Accounts receivable days is defined at the time taken from the date of sale of inventory to the date that cash is received from the customer (Correia et al., 2015). In this study accounts receivable days will be measured as (Accounts receivable/sales) x 365.
- Accounts payable days: Accounts payable days is defined as the time, in days, from the date that inventory is purchased from the supplier to the date that payment for these goods is made (Correia et al., 2015). Accounts payable days will be measured as (Accounts payable/cost of sales) x 365.
- Inventory days: Inventory days is defined as the time from the date of purchase of the inventory to the date of sale of the inventory (Correia et al., 2015). Inventory days will be calculated as (Inventory/cost of sales) x 365.
- Cash conversion cycle: The cash conversion cycle is the most complete measure of working capital (Deloof, 2003). The cash conversion cycle is the combination of the above three measures of working capital and should give a holistic view of the working capital management that is employed by the entity. The cash conversion cycle is calculated as account receivable days plus inventory days less accounts payable days (Correia et al., 2015)

Dependent variable

The dependent variable in this study is firm profitability. Firm profits are measured using return on assets which is defined as Earnings Before Interest and Tax (EBIT) divided by the total assets of the entity (García-Teruel & Martínez-Solano, 2007; Padachi, 2006). Earnings Before Interest and Tax include the profits that are generated from the ordinary operating activities of the entity. This is aligned with the independent variable being working capital, as working capital decisions are a result of the ordinary operating activities of the entity (Lazaridis & Tryfonidis, 2006). The use of operating profit also minimizes the effects that capital structure may have on profit. The use of return on assets as a measure of company profitability enables the user to identify how well the entity has used its assets, which include working capital, to generate profits for the entity. Return on assets is an absolute measure of profitability that will be comparable amongst entities.

Control variables

- Firm size: Firm size is measured as the natural logarithm of sales (Deloof, 2003; Padachi, 2006).
- Sales growth: sales growth is measured as the increase in sales from the prior year: $(sales_1-sales_0)/sales_0$ (Deloof, 2003; García-Teruel & Martínez-Solano, 2007).
- Leverage: The level of debt financing within an entity will be used as a control variable and will be measured using the debt ratio defined as total debt/ total assets (Deloof, 2003; Lazaridis & Tryfonidis, 2006).

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Table 1: Summary of variables, their measures, and abbreviations

Return on Assets	Profitability	ROA
Accounts receivable days	Working Capital Management	ARD
Accounts payable days	Working Capital Management	APD
Inventory days	Working Capital Management	ID
Cash conversion cycle	Working Capital Management	CCC
Sales Growth	Control variable: Growth	G
Firm Size	Control variable: Size	S
Debt Ratio	Control variable: Leverage	D
Sector variable	Dummy variable to determine how the relationship will vary according to the company sector	SC
Intercept	Measures the intercept of the regression model	A
Error	Measures the error term in the regression model	E
Beta	Beta is used to determine the direction as well as the strength of the relationship between dependent and independent variables	B

Data analysis

The first research question that was answered is: Is there a relationship between working capital management and profits? To answer this question, the four models below were tested. Each of the components of the cash conversion cycle and their relationship to firm profits was tested separately as the significance of the relationship of each component on profits may have differed (García-Teruel & Martínez-Solano, 2007; Gill et al., 2010). Consistent with previous research, company profitability was modelled against the four measures of working capital management (Deloof, 2003; García-Teruel & Martínez-Solano, 2007; Nazir & Afza, 2009; Padachi, 2006).

Model 1: $ROA_{it}= \alpha+ \beta_1ARD_{it}+\beta_2G_{it}+\beta_3S_{it}+\beta_4D_{it}+SC+e_{it}$
Model 2: $ROA_{it}= \alpha+ \beta_1APD_{it}+\beta_2G_{it}+\beta_3S_{it}+\beta_4D_{it}+SC+e_{it}$
Model 3: $ROA_{it}= \alpha+ \beta_1ID_{it}+\beta_2G_{it}+\beta_3S_{it}+\beta_4Dit+SC+e_{it}$
Model 4: $ROA_{it}= \alpha+ \beta_1CCC_{it}+\beta_2G_{it}+\beta_3S_{it}+\beta_4D_{it}+SC+e_{it}$

The next research question that was answered is: Does the relationship between working capital management and profit differ depending on the firm sector? To answer this question, multiple regression was again performed. However, to test the second research question, the four models described above were tested for each sector individually to determine whether the relationship observed between working capital management and profitability for the JSE as a whole differed depending on the sector to which the particular entity belonged.

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The results of these tests are discussed below.

RESULTS

Descriptive statistics

The table below details the descriptive statistics for the dependent and independent variables of the study to determine the relationship that exists between working capital management and company profitability.

Table 2: Descriptive statistics for the independent and dependent variables used in the study for all companies listed on the JSE

	Accounts Receivable Days	Accounts Payable Days	Inventory Days	Cash Conversion Cycle	Return on Assets	Size	Growth	Leverage
Mean	92.19	150.91	75.28	16.55	0.08	15.06	0.11	0.47
Standard Error	5.56	16.65	2.71	12.53	0.00	0.07	0.02	0.01
Median	61.71	88.30	63.49	33.20	0.09	15.18	0.08	0.46
Mode	12.22	50.78	26.22	-12.34	0.05	14.70	0.08	0.45
Standard Deviation	151.57	453.55	73.77	341.42	0.12	1.90	0.46	0.17
Range	2310.95	7419.60	617.87	6022.04	1.47	11.04	11.00	1.26

Inspection of the descriptive statistics used in the study indicates that on average companies, regardless of the industry into which they fall, take 92.19 days to receive cash after they have sold goods to customers. The descriptive statistics also indicate that on average, entities take 150.91 days to pay their creditors. Based on these results, it appears that it is most beneficial for the entity to delay payments of creditors and hasten the collection of amounts from debtors. The primary objective of an entity is to make a profit (Drury, 2012). It would follow that the practise followed by most companies on the JSE would be in the pursuit of this objective and that a shorter cash conversion cycle would result in increased profits.

The range of the accounts receivable days is very high. There is a range of 2310.95. The mean is significantly lower than this range. This may indicate that most companies employ a policy of collecting accounts receivables from customers as soon as possible. This is echoed by the mode which shows that the number of accounts receivable days that exists the most in the sample is 12.22 days.

The same can be said for the inventory days. On average companies that are listed on the JSE take 75.28 days to sell their inventory from the date of purchase. The range for inventory days is 617.87. For the inventory days to be as low as it is in relation to the range would be for the majority of companies to make their inventory days as short as possible. This is consistent with the view that the shorter the cash conversion cycle the higher the profits of the entity will be. It is important to note

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that the range in the outcomes may be due to the number of industries that were investigated. The breakdown of companies per industry is included below:

Table 3: Company sectors and the number of companies in each sector after taking out companies that do not have any components of the cash conversion cycle

Sector	Number of companies
Basic Materials	46[1]
Consumer Goods	19
Consumer Services	40[2]
Healthcare	7
Industrials	64[2]
Oil and Gas	6[1]
Technology	9
Telecommunications	5

Descriptive statistics were calculated and analysed per industry. Based on the results, it was noted that the same relationships existed, with the mean accounts receivable days being lower than the mean accounts payable days and the modal inventory days less than the mean inventory days. This is consistent with the view that a shorter cash conversion cycle maximises profitability (Drury, 2012).

At this point, it appears that the relationship between working capital management and profitability is the same regardless of the sector to which an entity belongs. However, a conclusion cannot be based on descriptive statistics alone as the mean may not be representative of the sample as a whole. It is for this reason that regression analysis will be used to determine whether the relationship observed within the descriptive statistics is true.

Regression analysis

Regression analysis was performed for entities listed on the JSE as a whole and per sector. The results of the regression analysis performed for the JSE as a whole is presented below:

Table 4: Regression results of Model 1: the effect of accounts receivable days on profit

Variable	Estimate	Standard Error	t value	Pr(>ltl)
Accounts receivable days	-1.0079e-06	1.0598e-06	-0.9510	0.3419560
Growth	7.7660e-03	3.8085e-03	2.0391	0.0418155 *
Size	1.5748e-02	4.2664e-03	3.6911	0.0002407 ***
Leverage	-2.5733e-01	5.2119e-02	-4.9373	9.914e-07 ***

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

1 Harmony Gold and DRD Gold are included in both the basic materials sector and the oil and gas sector.
2 Winhold and Grindrod are included in the consumer services and industrials sectors.

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Table 5: Regression results model 2; the effect of accounts payable days on profit

Variable	Estimate	Standard Error	t value	Pr(>ltl)
Accounts Payable Days	1.3673e-05	1.4940e-05	0.9152	0.360490
Growth	2.5976e-02	1.3218e-02	1.9653	0.049870 *
Size	7.5078e-03	2.6610e-03	2.8214	0.004948 **
Leverage	-2.1812e-01	7.3539e-02	-2.9661	0.003143 **

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

Table 6: Regression results Model 3: the effect of inventory days on profit

Variable	Estimate	Standard Error	t value	Pr(>ltl)
Inventory Days	1.4383e-04	7.9235e-05	1.8152	0.07004
Growth	1.1733e-02	8.6821e-03	1.3514	0.17712
Size	3.2013e-02	4.5032e-03	7.1090	3.692e-12***
Leverage	-1.9875e-01	3.3478e-02	-5.9368	5.182e-09 ***

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

Table 7: Regression results of Model 4; the effect of the cash conversion cycle on profit

Variable	Estimate	Standard Error	t value	Pr(>ltl)
(Intercept)	-1.5309e-01	4.9018e-02	-3.1231	0.001859 **
ccc	-1.6328e-05	1.3423e-05	-1.2164	0.224229
size	2.0509e-02	3.1857e-03	6.4378	2.176e-10 ***
growth	1.1511e-02	4.6726e-03	2.4635	0.013985 *
leverage	-1.8375e-01	2.6525e-02	-6.9274	9.302e-12 ***

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

Based on the information included in tables 4-7 above, it is noted that when companies listed on the JSE are investigated in totality, no significant relationship between any of the components of working capital management and profitability exists. This indicates that regardless of whether the entity adopts an aggressive or conservative approach to working capital management, its profitability will remain largely unchanged.

The regression results performed per sector are not much different from those results noted for the JSE as a whole, the only exceptions being the Basic Materials Sector, Consumer Services Sector, Industrials, and the Technology sector. A summary of the results per sector is included below:

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Table 8: Summary of regression results per sector

	Accounts Receivable days	Accounts payable Days	Inventory Days	Cash Conversion Cycle
JSE	Non-significant	Non-significant	Non-significant	Non-significant
Basic Materials	Significant negative (10%)	Significant positive (10%)	Non-significant	Non-significant
Consumer Goods	Non-significant	Non-significant	Non-significant	Non-significant
Consumer Services	Non-significant	Non-significant	Non-significant	Significant negative (10%)
Healthcare	Non-significant	Non-significant	Non-significant	Non-significant
Industrials	Significant negative (1%)	Non-significant	Non-significant	Non-significant
Oil and Gas	Non-significant	Non-significant	Non-significant	Non-significant
Technology	Significant negative (5%)	Non-significant	Significant positive (10%)	Non-significant

Significance levels are included in brackets

The results identified in table 8 above are discussed in detail in the paragraphs that follow.

Table 9: Basic Materials Model 1 regression results: The effect of accounts receivable days on profit

Variable	Estimate	Standard Error	t-value	Pr(>ltl)
(Intercept)	-0.32766850	0.12145380	-2.6979	0.0075372 **
ARD	-0.00025894	0.00015198	-1.7038	0.0898749 .
Size	0.02892825	0.00769149	3.7611	0.0002186 ***
Growth	0.07620469	0.03701443	2.0588	0.0407317 *
Leverage	-0.18008843	0.05515871	-3.2649	0.0012758 **

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

Table 10: Basic Materials Model 2 regression results: the effect of accounts payable days on profit

Variable	Estimate	Standard Error	t-value	Pr(>|t|)
APD	1.0319e-04	5.5859e-05	1.8473	0.066633.
Size	4.5849e-02	2.2917e-02	2.0007	0.047198*
Growth	1.0880e-01	3.7232e-02	2.9223	0.004001**
Leverage	-4.4389e-01	7.1932e-02	-6.1709	5.814e-09***

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

Based on the results in table 9, it is seen that in the Basic Materials sector, a significant negative relationship exists between accounts receivable days and profitability at the 10% significance level. The negative relationship is in line with expectations where a more aggressive working capital policy

ISBN NUMBER: 978-0-620-92690-4

to collect debts quicker is expected to result in increased profits (Nazir & Afza, 2009). The significance of the relationship that exists in the basic materials sector that did not exist when the JSE as a whole was investigated may be due to the commodity and currency risk that the sector is exposed to (Tufano, 1996). Decreasing the time to collect accounts receivables would reduce the exposure to these risks. The significant relationship between accounts receivable days and profitability may be as a result of the control that entities can exert over their levels of accounts receivables by changing credit terms, credit limits, and performing credit checks (Mian & Smith, 1992). There is less of the external influence that inventory and accounts payable are subject to.

Table 10 indicates that there is a significant positive relationship between accounts payable days and profitability at the 10% significance level. This relationship is expected as trade payables provide the entity with an interest-free source of funding (Deloof, 2003) The relationship may be significant in this sector again due to the market risk that the basic materials sector is exposed to. By lengthening the amount of time taken to pay creditors, the entity would be able to wait until the market is favourable before making payment, resulting in increased profitability. The significant positive relationship could also be attributable to the size of these basic materials companies, who usually form part of huge Multinational Groups. The size of these companies enables them to exert power over their suppliers and may result in favourable credit terms. The positive relationship is in line with the findings of Deloof (2003).

Table 11: Consumer Services Model 4 regression results: the effect of the cash conversion cycle on profit

Variable	Estimate	Standard Error	t-value	Pr(>|t|)
(Intercept)	-8.5912e-03	1.3038e-01	-0.0659	0.947562
CCC	-1.3302e-05	6.7609e-06	-1.9674	0.051262.
Size	1.6532e-02	9.9522e-03	1.6612	0.099088.
Growth	4.6204e-02	2.0130e-02	2.2953	0.023319*
Leverage	-2.5083e-01	7.9232e-02	-3.1657	0.001927**

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

The results in table 11 above indicate that a significant negative relationship exists between the cash conversion cycle and profitability at the 10% confidence level for the Consumer Services Sector. This is consistent with previous results (Deloof, 2003; García-Teruel & Martínez-Solano, 2007; Lazaridis & Tryfonidis, 2006; Ngwenya, 2012). The fact that the cash conversion cycle had a significant negative relationship with profitability at the 10% significance level and no significant relationship existed between the individual working capital components and profitability may be due to the nature of the operations of the Consumer Services Industry. This sector generally has limited inventory on hand and work is billed as it is performed resulting in little ability to adjust the individual components of the cash conversion cycle.

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Table 12: Industrials Model 1 regression results: the effect of accounts receivable days on profit

Variable	Estimate	Standard Error	t-value	Pr(>|t|)
(Intercept)	1.8836e-01	6.3260e-02	2.9776	0.003149**
ARD	-1.5074e-04	4.9288e-05	-3.0583	0.002433**
Size	-2.4750e-03	4.5413e-03	-0.5450	0.586169
Growth	5.8128e-03	5.5391e-03	1.0494	0.294856
Leverage	-1.1626e-01	4.3195e-02	-2.6915	0.007524**

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

The results provided in Table 12 indicate that there is a significant negative relationship between accounts receivable days and profitability at a 1% level of significance for companies investigated in the Industrials Sector. This relationship is again consistent with prior research (Alipour, 2011; García-Teruel and Martínez-Solano, 2007; Lazaridis & Tryfonidis, 2006). A possible explanation for this negative relationship could be that goods that are of a higher quality require less time to be inspected and the customer is willing to pay for these goods after a shorter period (Deloof, 2003). If accounts receivables are too high, the entity will have too much cash tied up in accounts receivable and will not be able to invest this cash in other areas of the business (Lazaridis & Tryfonidis, 2006). These results were found to be true in other research that focused specifically on the industrial sector (Padachi, 2006). Included in the industrials sector are construction companies. These companies have a large portion of their money tied up in accounts receivable. A number of these companies have entered business rescue proceedings or have closed in recent years due to an inability to collect accounts receivables. Management of debtors is of particular importance in this sector (Windapo & Cattell, 2013).

Table 13: Technology Model 1 regression results: the effect of accounts receivable days on profit

Variable	Estimate	Standard Error	t-value	Pr(>|t|)
(Intercept)	0.36906669	0.11253735	3.2795	0.00227**
ARD	-0.00034813	0.00016902	-2.0597	0.04652*
Size	-0.00999006	0.00824214	-1.2121	0.23317
Growth	0.03932526	0.04043011	0.9727	0.33703
Leverage	-0.17335519	0.06856738	-2.5282	0.01586*

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

Table 14: Technology Model 3 regression results: the effect of inventory days on profit

Variable	Estimate	Standard Error	t-value	Pr(>|t|)
ID	0.00100516	0.00058327	1.7233	0.09886.
Size	-0.05694521	0.02246621	-2.5347	0.01888*
Growth	0.00118815	0.05218425	0.0228	0.98204
Leverage	-0.33750841	0.13053774	-2.5855	0.01688*

Significance codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1

ISBN NUMBER: 978-0-620-92690-4

When looking at the Technology Sector, Table 13 indicates that there is a significant negative relationship between accounts receivable days and profitability at the 5% level of significance. This is in line with previous research as well as the relationships that have been identified in other sectors. As previously stated, entities can adjust their accounts receivables days by using, credit terms, credit checks, and credit limits (Mian & Smith, 1992). In this way, management may be able to manage accounts receivables effectively to maximize profits.

A more interesting result that has been observed within the technology sector is that a significant positive relationship exists between the inventory days and the profitability at a 10% level of significance. This is unexpected as technology is usually associated with fast-moving inventory that is subject to obsolescence. Included within the technology sector are companies such as Alviva, Cognition, Datacentrix. These companies are primarily involved in ICT solutions. This involves providing communication and data-sharing technologies to clients. In providing these types of solutions to clients, there is usually a lot of client interaction, and data and technology solutions need to be tailored to the specific clients' business and strategy (Datacentrix, 2017). Tailored solutions mean that inventory days would increase. The longer inventory days could lead to increased profitability as by spending more time with the customer, the entity may be able to better design ITC solutions to meet the client's needs which could ensure future business.

CONCLUSION

The results indicate that within a South African context, there is not a significant relationship between working capital management and profitability when looking at the JSE in totality. The results are contradictory to much research that has been carried out in the area of working capital management and profitability, where it was found that working capital should be managed effectively and efficiently to ensure that a company's profits are maximized (Deloof, 2003; García-Teruel & Martínez-Solano, 2007: Nazir & Afza, 2009; Ngwenya, 2012). The lack of relationship between working capital management may be due to the difficulty that is associated with the effective management of working capital levels (Nazir & Afza, 2009).

When considering each sector individually it was found that working capital management and in particular accounts receivable management could significantly affect the company profitability, where three out of the seven sectors under review exhibited a significant negative relationship between accounts receivable days and profitability. The three sectors that had a significant relationship between accounts receivable management and profitability were: basic materials, industrials, and technology. The basic materials sector and the industrials sector are the two largest sectors on the JSE. Thus, of the 192 companies that were investigated, 119 companies, more than half the companies investigated, exhibited a significant negative relationship between accounts receivable days and profitability. The dominance of a significant relationship between accounts receivable days and profitability may be reflective of the relative ease with which accounts receivable days can be altered in comparison to the other components of net working capital, where the entity is unable to exercise extensive control. An entity would be able to alter the accounts receivable days quite easily through the adjustment of credit terms and credit-granting decisions (Mian & Smith, 1992). In answering the question, "does the relationship between working capital management and profitability differ depending on the company sector?" the results indicate that the relationship does seem to be affected by the industry sector. In sectors such as consumer goods, working capital

ISBN NUMBER: 978-0-620-92690-4

management seemed to have no significant effect on the profit of the company, while in the consumer services sector it was found that the cash conversion cycle significantly affected the company's profitability. The technology sector, unlike any of the other sectors under review, exhibited a significant positive relationship between inventory days and profitability. However, one should consider that there were only 9 companies in the technology sector, thus cementing the fact that management of accounts receivable days would have the strongest effect on profitability for most companies under review.

The degree to which the relationship between working capital management and profitability differed between sectors does not seem to be very large, the relationship observed between accounts receivable days and return on assets was common to many sectors under review.

This research has not delved into how factors specific to each company would affect the relationship between working capital management and profitability. As the sector classifications used within this study are very broad, an area for further research could be to inspect how within each sector the relationship between working capital management and profitability would be affected by company-specific factors.

ISBN NUMBER: 978-0-620-92690-4

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

NORTHERN GAUTENG REGION

Seeing the Wood for the Trees - Textual Analysis of the Integrated Reports of Forestry, Logging and Related Services Companies in South Africa

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ABSTRACT

Low readability and narrative tones can be used as impression management tools in corporate communications, especially in environmentally sensitive industries. We conducted computerised textual analysis on the integrated reports of all four companies listed in the Forestry, Logging, and Related Services (FLRS) industry of the JSE for the period 2014 to 2020. Results are compared with similar analyses of integrated reports from four well-known Retail companies. We find that FLRS integrated reports are significantly longer and more difficult to read than those from the Retail industry. For analysis of narrative tone, results showed that both industries favoured Commonality as the most favoured tone. However, the Activity and Optimism narrative tones reveal significantly different usage between the two industries. Activity scores are consistently higher for the FLRS industry while Optimism is higher for the Retail industry. We contribute to the field of impression management with results from the South African context. We confirm lower readability of integrated reports from companies operating in environmentally sensitive industries, as well as differences in narrative strategies between two industries, the FLRS and the Retail industry.

KEYWORDS: Diction; forestry and logging; impression management; narrative analysis; readability; retail

INTRODUCTION

"You can't force people to care about the natural environment, but if you encourage them to connect with it, they just might." — *Jennifer Nini*

Carbon and other emissions resulting from economic development have had a severe impact on the natural environment, leading to global warming and increased impact and frequencies of natural disasters (Nuskiya, Ekanayake, Beddewela, & Gerged, 2021). Hence, sustainability and sustainable development are issues of concern for society, especially in terms of pollution (Artene, Bunget, Dumitrescu, Domil, & Bogdan, 2020). Increased awareness of the human effect on the environment leads to pressure on companies to ensure they are socially and environmentally accountable (De Villiers & Maroun, 2018b). Reporting initiatives such as the Sustainability Accounting Standards Board (SASB), the International Integrated Reporting Council (IIRC), and the Global Reporting Initiative (GRI) propagate the importance of maintaining a balanced relationship between economic development and corporate profits on the one hand, and sustainability of resources for use by future generations on the other. In addition to the above, the Organization for Economic Co-operation and Development (OECD) also proposes programmes concerning Sustainable Development Goals regarding environmental, economic, and social aspects (Artene et al., 2020).

One of the main sources of information about a company is its corporate reports. Corporate reporting was traditionally a means to convey backward-looking information about a company's financial performance and position (Camilleri, 2019). Nowadays, however, stakeholders expect companies to provide information about their non-financial performance, for example, the impact of its operations on the environment (Böhling & Murguía, 2014; Camilleri, 2018, 2019; De Villiers & Maroun, 2018a; Nuskiya et al., 2021). Through standalone sustainability reports and/or integrated reports, shareholders *and* other stakeholders can consider risks and opportunities, based on information about environmental, social, and governance issues. Thus, non-financial reporting plays an essential role in shaping a company's image and users of corporate reports need to be aware that narrative disclosures can be used to emphasise positive news while downplaying the negative (Arena, Bozzolan, & Michelon, 2015; De Villiers & Maroun, 2018b; Diouf & Boiral, 2017).

The Forestry, Logging and Related Services (FLRS) industry in South Africa contributes significantly to economic growth (0.6% of GDP or R69bn annually) and employs many workers, making it a strategic economic sector (Viljoen, 2020) in terms of value to the economy and employment. The FLRS industry does not only have to deal with increasing demand for timber products (Viljoen, 2020), but they must also face growing scrutiny amidst increasing environmental consciousness. The FLRS industry faces various environmental pollution problems, including solid waste disposal, air emission of toxic and non-toxic particulates, veneer dryer emission, glue waste disposal, and the ever-present impact of transportation (Adhikari & Ozarska, 2018; Fuwape, 2003; Higgins, 2011). The noise pollution from the operation of machines can also be a serious health hazard to workers and nearby communities. Mechanisation has improved the process significantly but also interferes with ecosystems more than traditional methods (Higgins, 2011). However, with timber being a renewable resource, forests can play an important role in climate change mitigation through the decarbonisation that occurs during photosynthesis (Artene et al., 2020). Furthermore, the processing of plant by-products (biomass) is increasingly being used to generate electricity and as an alternative to petrol (Viljoen, 2020).

ISBN NUMBER: 978-0-620-92690-4

Non-financial reporting is thus especially important in the FLRS industry, as it is a high-impact industry in terms of wood processing, wood use, and waste management. Stakeholders want to know what FLRS companies do to ensure there is no loss of biodiversity, no unnecessary soil erosion, no disruptions in the hydrological cycle, and no activities that can result in desert encroachment (Fuwape, 2003). The Carbon Disclosure Project (CDP) (n.d.), one of the leading raters of environmental disclosures by the largest listed companies worldwide, publishes ratings in three categories, namely *Climate Change*, *Forests,* and *Water Security*, signifying the importance of the FLRS industry. Because of the inherent risks that FLRS poses to the environment, these companies have a responsibility to inform stakeholders as to how they are protecting and contributing to the environment as well as addressing health and safety concerns (De Villiers, Low, & Samkin, 2014; Ngwakwe & Mtsweni, 2016). This makes narrative non-financial reporting an essential part of corporate reporting for FLRS companies.

Guidelines such as the those by the GRI drives reporting on sustainability factors (De Villiers & Sharma, 2017), but it is not compulsory to follow all prescriptions from such standards (Ngwakwe & Mtsweni, 2016), which means that companies have the freedom to use narrative non-financial reporting selectively. The result is that language can be used to manipulate the impression a reader obtains from the company, which reduces the true informational value of such reports (Diouf & Boiral, 2017). Corporate reports such as the integrated report have also received criticism for a lack of quality and reliability (Cho, Michelon, & Patten, 2012; Diouf & Boiral, 2017; Emel, Makene, & Wangari, 2012), for being difficult to read (Smeuninx, De Clerck, & Aerts, 2020), and for being tools for legitimisation or impression management (Diouf & Boiral, 2017; Merkl-Davies & Brennan, 2011; Ngwakwe & Mtsweni, 2016; Stacchezzini, Melloni, & Lai, 2016). Specific narrative strategies, whether in terms of readability or tone, can be used in corporate reports of companies that are not performing well, to influence stakeholders with careful use of language that diverts attention away from the numbers (Diouf & Boiral, 2017; Hasan, 2018; Smeuninx et al., 2020). In addition to this, there continues to be a lack of proper environmental or sustainability reporting in emerging economies (Nuskiya et al., 2021).

Given the propensity of companies to manage impressions by word use in narrative sections of corporate reports, the objective of this research was to conduct an exploratory analysis of the readability and narrative strategies, or tones used in integrated reports of all four FLRS companies listed on the Johannesburg Stock Exchange (JSE). As described above, the FLRS industry is environmentally sensitive and might use a different type of narration from that of other industries that are less environmentally sensitive. The results from the four FLRS companies' analyses were then compared to reports from four retail companies to establish whether significant differences exist in the way these two industries report on their activities, with FLRS being environmentally sensitive and retail companies being less so. This study answered the call for further research regarding non-traditional disclosures and reports (Leuz & Wysocki, 2016). Furthermore, narrative tone use in JSE-listed companies' reports is an underexplored topic (Du Toit & Esterhuyse, 2021).

In the next section, a short literature review is presented. This is followed by the research method and the results of our analyses. The paper is concluded with recommendations from the results and suggestions for future studies.

ISBN NUMBER: 978-0-620-92690-4

LITERATURE REVIEW: IMPRESSION MANAGEMENT THROUGH READABILITY AND NARRATIVE TONE

The study is based on stakeholder theory. Although investors have an interest in the financial outcome of the activities of a company, employees, customers, suppliers, the government, and other interested parties are stakeholders of the company too (Freeman, 1984). Companies are thus accountable not only to shareholders, but to a wide range of stakeholders (Eccles, Ioannou, & Serafeim, 2014; Hassan, 2019). Narrative non-financial corporate reporting provides important information about an organisation's activities and their impact on the environment and wider society.

However, any corporate communications, including narrative reports, can be used by management for impression management purposes, and not necessarily to account truthfully. Impression management is the practice of presenting a company in a positive light, regardless of its real performance. It thus refers to the manipulation of public perceptions (Cho et al., 2012; Diouf & Boiral, 2017; Emel et al., 2012; Jones, Melis, Gaia, & Aresu, 2017; Stacchezzini et al., 2016). Examples of impression management strategies include hiding under-performance through poor readability and narrative manipulation (Diouf & Boiral, 2017; Hasan, 2018; Smeuninx et al., 2020) or the use of optimistic language to create the impression that the company is doing well (Fonseca, 2010).

Companies make use of corporate reporting to communicate what the company is doing and how it is performing at various levels. Through the presentation of corporate reports, companies can influence the perceptions of external stakeholders. In addition to financial results, companies also use corporate reports to show their efforts toward corporate social and environmental responsibility. The GRI Standards provide several principles for defining sustainability reporting quality, namely balance, comparability, accuracy, timeliness, clarity, and reliability (Global Reporting Initiative (GRI), 2016:7). However, after interviews with 33 fund managers and analysts in Canada to analyse the perceptions of stakeholders regarding sustainability report quality and the presence of bias, Diouf and Boiral (2017) report that sustainability reports were rarely thought to comply with the GRI's six principles for reporting quality. The interviewees reported that the sustainability reports suffered from impression management in that management were highlighting positive aspects but obfuscating negative outcomes (ibid.).

For corporate reports to be readable and to ensure readers are not unduly influenced, they should be written in plain language, be concise, and make use of a neutral tone (Smeuninx et al., 2020; Stone & Lodhia, 2019). Corporate communication should disclose pertinent information for decision-makers. It has been found that market participants appreciate reports that are short, focused, and readable (Caglio, Melloni, & Perego, 2020; Zhou, Simnett, & Green, 2017). Just as poor readability and a specific narrative tone can be used to manipulate impressions and hide poor financial results (Smeuninx et al., 2020), it can also be used to hide the truth around a company's social and environmental impact so as to enhance the positive effect of good news and reduce the negative effect of bad news (Jones et al., 2017; Stacchezzini et al., 2016).

Several studies have investigated the readability of narrative disclosure (Bonsall IV, Leone, Miller, & Rennekamp, 2017; Bonsall & Miller, 2017; Du Toit, 2017; Hasan, 2018; Loughran & McDonald, 2014, 2016; Smeuninx et al., 2020) and most found the narrative sections of corporate reports to be readable only by persons with a university education. Other studies investigated the textual tone of

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narrative disclosures and conclude that words that represent tones of *optimism* and *certainty* are very dominant in corporate reports (Arena et al., 2015; Cho, Roberts, & Patten, 2010; Hassan, 2019). A corporate narrative report is thus considered to be of lower quality if it is overly long and less readable (Bonsall IV et al., 2017; Caglio et al., 2020; Loughran & McDonald, 2016), as well as when it tends to be biased toward a specific narrative tone (Huang, Teoh, & Zhang, 2014). Both readability and tone can be used by companies to manipulate impressions or to obfuscate the truth (Hasan, 2018; Smeuninx et al., 2020).

The industry has been found to play a significant role in voluntary disclosure quality. A frequently used classification framework to test industry effects is to group companies according to their impact on the environment. Fernandez-Feijoo, Romero and Ruiz (2014) deem industries as environmentally sensitive if their activities have a high impact on the environment due to extractive activities and/or high pollution and emissions. They (ibid.:58) classify environmentally sensitive industries as "agriculture, automotive, aviation, chemical, construction, construction materials, energy, energy utilities, forest and paper products, logistics, metal products, mining, railroad, waste management, and water utilities." All other industries were classified in the control group. In a similar style, Rim, Kim and Dong (2019:1522) classify the following industries as environmentally sensitive: (i) basic materials and construction, (ii) oil and energy, and (iii) automotive, whilst the environmentally non-sensitive industries are as follows, (iv) technology and communications, (v) consumer goods or services and (vi) banking or financial services. Several studies report that companies in environmentally sensitive industries tend to provide more environmental and social information to readers of their reports versus companies in other industries due to stakeholder pressure and legitimising needs (Artene et al., 2020; Fernandez-Feijoo et al., 2014; Lock & Seele, 2015; Marwa, Salhi, & Jarboui, 2020; Nuskiya et al., 2021; Rim et al., 2019; Syed & Butt, 2017). None of these studies included African companies.

We conclude this section with our problem statement, which is that poor readability and the use of specific narrative tones can be used to influence the perceptions of readers of corporate reports. Additionally, self-serving narrative strategies by management are likely to be more prevalent in industries that have a larger negative impact on the environment. Our study also answers the call for further research regarding non-traditional disclosures and reports (Leuz & Wysocki, 2016) as well as addressing the paucity of research on narrative tone use in JSE-listed companies' reports (Du Toit & Esterhuyse, 2021).

We phrase our research questions as follows:

RQ1 – What are the readability and narrative strategies or tones of integrated reports of JSE-listed companies in the FLRS industry?

RQ2 – To what extent are the readability and narrative strategies or tones of integrated reports of JSE-listed FLRS companies different from that of companies in a less environmentally sensitive industry?

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RESEARCH METHOD

Computer-aided textual analysis

There is increasing interest in the textual analysis of corporate reports (Hasan, 2018). Textual analysis can be used to analyse the readability of reports (Bonsall IV et al., 2017; Du Toit, 2017; Smeuninx et al., 2020) as well as the narrative tone of a report (Arena et al., 2015; Hassan, 2019; Rim et al., 2019). Textual analysis through software applications is gaining popularity in accounting and finance research. The use of software is believed to be more reliable than manual analyses (Al-Najjar & Abed, 2014). Software applications have the benefit of inherent stability, clear coding rules for comparability, coder reliability, and the ability to process large volumes of text (Short, McKenny, & Reid, 2018).

We used Readability Studio 2019 to measure readability in terms of the *Flesch Reading Ease* measure, recommended for assessing the readability of technical reports meant for adult readers. The *Flesch Reading Ease* score is calculated as 206.835 - 0.846(number of syllables per 100 words) - 1.015(average sentence length in words). The lower the score, the more difficult it is to read the text, for example, a score between 0 and 30 is classified as very difficult to read, best understood by readers with university degrees. The study also investigated the use of text that is by nature more difficult to read, such as passive voice sentences and so-called wordy items. Wordy items refer to a phrase that is unnecessarily long and can be replaced with something shorter and simpler, for example, ‘a case in point’.

The narrative strategy or tones of corporate reports were analysed with Diction 7.1.3. Diction, developed by Hart (2000) and improved by Hart and Carroll (2013), measures the textual characteristics of the text to identify if a certain linguistic strategy was applied. The broader categories it identifies are *Certainty*, *Optimism*, *Activity*, *Realism*, and *Commonality* (Hart, 2000). A full table is available as an appendix in Laskin (2018). Diction scored individual texts for each strategy, based on frequencies of occurrence of words contained in subaltern dictionaries. The individual scores are measured against a pre-determined built-in standard (Hart, 2000; Hart & Carroll, 2013). For this study, we compare our text scores against the *Corporate Financial Reports* normative base, similar to a study by Craig and Amernic (2018).

Sample and document selection

To answer RQ1, we investigated the textual attributes of the integrated reports of all JSE-listed companies operating in the FLRS industry for the period 2014 to 2020. There were four companies, resulting in 28 integrated reports being analysed. To answer RQ2, the results of the FLRS companies were compared to that of four companies in the retail sector. Concerning the classification systems of Fernandez-Feijoo et al. (2014) and Rim et al. (2019) discussed earlier, the current study opted to compare disclosures of the *FLRS* industry (an environmentally sensitive industry) to those of the *consumer retail* industry (less environmentally sensitive). Restricting comparisons to two industries to highlight disclosure differences between environmentally sensitive industries and other industries were also employed by Artene et al. (2020) as well as Lock and Seele (2015). The Artene et al. (2020) study compared disclosures of *oil* companies (four Romanian; three Greek) with *banks* (three Romanian; four Greek). Their study (ibid.) measured compliance with the European Directive

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2014/95 for non-financial disclosure, by measuring the number of times that words relating to the environment appeared in the annual and sustainability reports of their sample companies. The Lock and Seele (2015) study compared disclosures of *chemical* companies (five Swiss; five German) with *bank and insurance* companies (five Swiss; five German). Their study (ibid.) measured the word count in sustainability reports across five categories, namely environmental, social, philanthropic, product, and other against expected targets based on industry risks. Both the Artene et al. (2020) and Lock and Seele (2015) studies thus measured the prevalence of 'topics', i.e., 'what' is disclosed, whilst our study measures narrative tone and readability, i.e., 'how' is the disclosures made.

The comparison of readability and narrative tone results between the two industries in the current study was conducted using a comparison of means statistics. Due to the small sample size and normality tests indicating that the data for most of the variables are not normally distributed, the non-parametric Mann-Whitney U test for comparison of mean ranks was employed.

The companies in alphabetic order are (JSE ticker in brackets):

FLRS	**Consumer retail**
Kap Industrial Holdings Ltd (KAP)	Pick n Pay Stores Ltd (PIK)
Mondi Ltd (MND)	Shoprite Holdings Ltd (SHP)
Sappi Ltd (SAP)	The Spar Group Ltd (SPP)
York Timber Holdings Ltd (YRK)	Woolworths Holdings Ltd (WHL)

RESULTS

As a first analysis, the length of the integrated reports was analysed over the period 2014 to 2020. Both industries' integrated reports were almost of the same length in 2014. However, from Figure 1 it can be seen that the length of the integrated reports of FLRS companies increased by almost 50% over time, whilst the Retail integrated reports decreased in length and then returned to initial levels. On average, the integrated reports of the FLRS industry are longer (mean = 59 222 words) than those of the Retail industry (mean = 39 171 words). The Mann-Whitney U test revealed that the difference in the total words of reports in the FLRS industry (median = 53 552) and the Retail industry (median = 38 030) is significant, U = 144.00, z = -4.064, p = .000, r = -0.54[1].

1 U = Mann-Whitney test score; z = z-score; p = significance; r = sum of ranks

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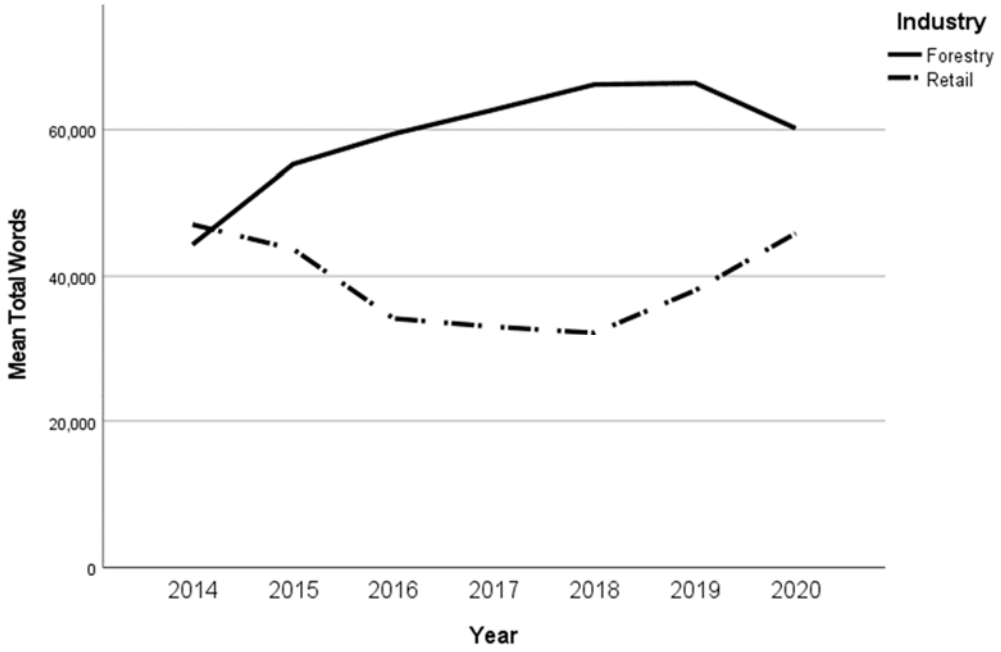
Figure 1. Average report length in terms of number of words, per industry



The rest of the readability results are presented in Table 1. The Flesch Reading Ease score of any text ranges between 1 and 100, with lower values being indicative of more difficult text. For the combined sample of 56 reports, the lowest score of 20 (FLRS) and the highest score of 39 (Retail) shows that the integrated reports for all the companies range from *Difficult* to *Very Difficult* in readability. Averages for the different industries show that, for the Flesch Reading Ease, the reports from the FLRS industry are more difficult to read (mean = 26.43) than reports from the Retail industry (mean = 32.36).

Table 1: Readability results

	Mean	Median	Standard Deviation	Min	Max
Panel A: FLRS (n = 28)					
Length (word count)	59 222	53 552	21 031	20 014	104 690
Flesch Reading Ease	26.43	27.00	3.32	20.00	33.00
Wordy Items	4 848	4 574	1 452	3 041	8 304
Passive Voice	732	742	217	370	1 045
Panel B: Retail (n = 28)					
Length (word count)	39 171	38 030	12 857	15 811	66 707
Flesch Reading Ease	32.36	32.00	3.61	25.00	39.00
Wordy Items	3 199	3 145	847	2 043	5 258
Passive Voice	447	395	197	236	983

Figure 2 reveals that the Flesch Reading Ease scores (for which lower scores indicate less readability) decreased over time, indicating that the reports in both industries became less readable over time. The use of wordy items increased over time, especially for the FLRS industry, contributing

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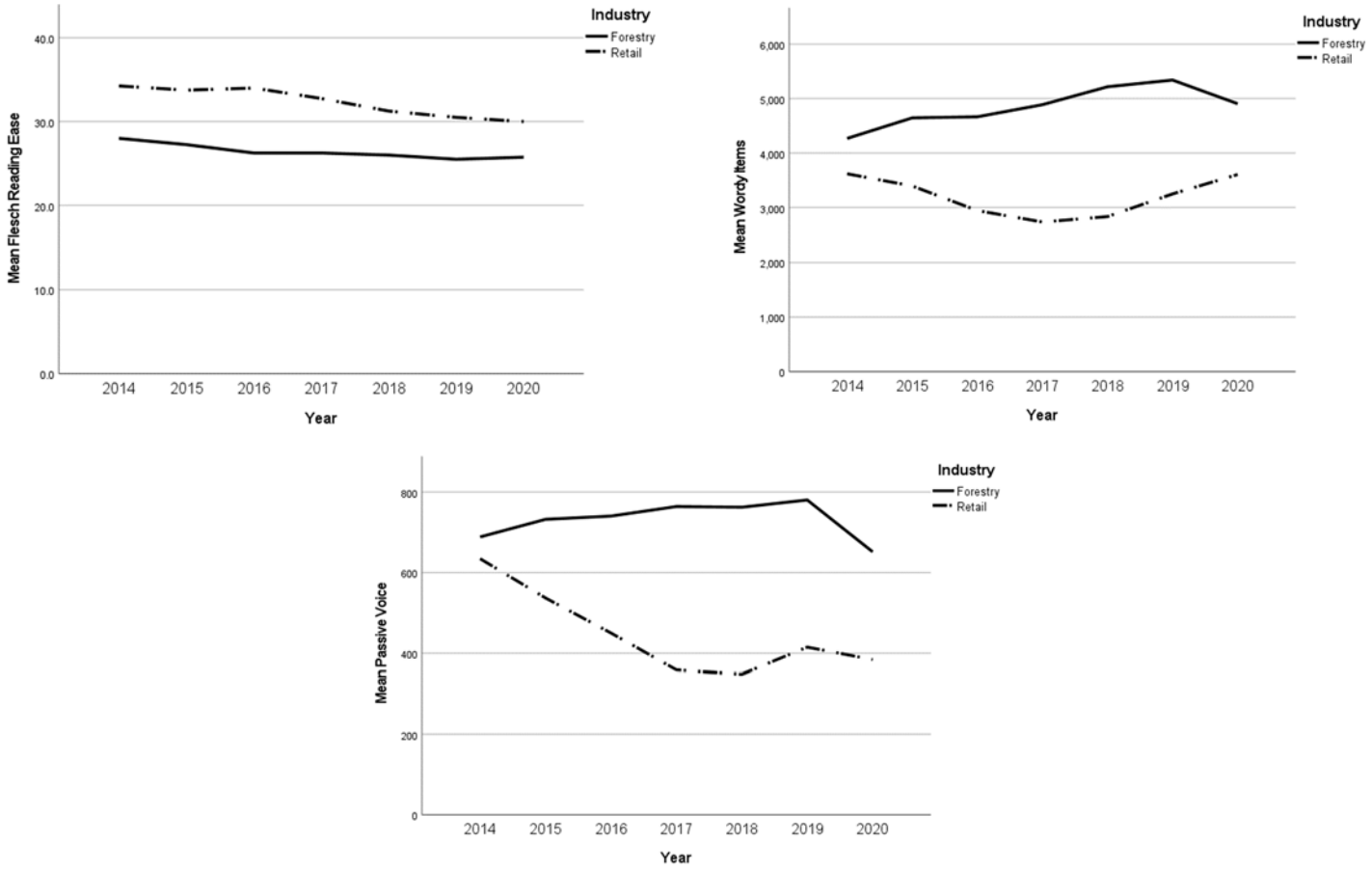
to lower readability. Only the use of passive voice sentences decreased over time, especially in the Retail industry.

Figure 2: Graphical depiction of readability trends over time



The Mann-Whitney U test revealed that the difference in the Flesch Reading Ease scores of the FLRS industry (median = 27.00) and the Retail industry (median = 32.00) is significant, U = 701.00, z = 5.082, p = .000, r = 0.68. For wordy items, the Mann-Whitney U Test results indicate another significant difference between the FLRS industry (median = 4 574) and the Retail industry (median = 3 145), U = 116.00, z = -4.523, p = .000, r = -0.60. For passive voice sentences items the Mann-Whitney U Test results also indicate a significant difference between the FLRS industry (median = 742.00) and the Retail industry (median = 395), U = 129.00, z = -4.310, p = .000, r = - 0.58.

The results of the narrative analysis of the integrated reports are shown in Table 2.

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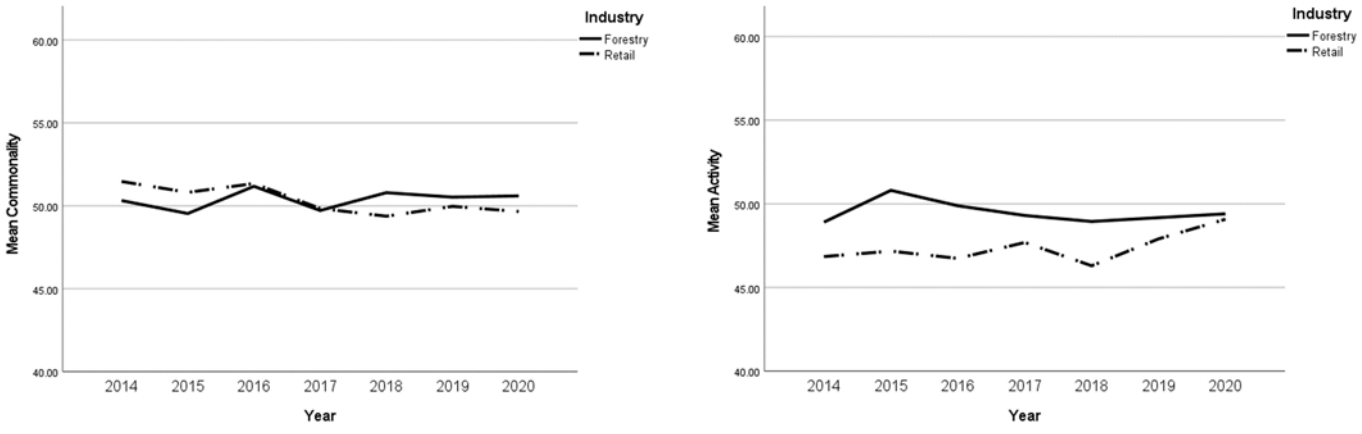
Table 2: Narrative analyses

	Rank	Mean	Median	Standard Deviation	Min	Max
Panel A: FLRS (n = 28)						
Commonality	1	50.38	50.45	1.26	47.40	52.84
Activity	2	49.49	49.16	2.19	46.20	55.56
Optimism	3	48.80	49.26	1.85	45.46	51.98
Certainty	4	48.24	48.24	1.82	45.68	52.35
Realism	5	48.16	48.12	1.68	44.56	51.47
Panel B: Retail (n = 28)						
Commonality	1	50.35	50.71	1.46	46.78	52.71
Optimism	2	50.20	49.94	0.87	48.80	52.09
Realism	3	48.19	47.72	2.87	43.59	52.28
Activity	4	47.39	47.41	1.66	44.26	50.61
Certainty	5	47.12	47.18	2.52	41.76	50.99

From the rankings in Table 2, it appears that companies in the two industries have different preferences for the five narrative tones defined by Diction. Furthermore, the FLRS industry has a lower dispersion between the five tones (high of 50.38 and low of 48.16) and tighter standard deviations with only *Activity* exceeding two points. The Retail industry has a wider dispersion between the five tones (high 50.35 and low of 47.12) and both *Certainty* and *Realism* have standard deviations greater than two. *Commonality* was the only tone that both industries preferred equally as it is ranked first by both industries. The narrative tone category of *Commonality* refers to language highlighting the values of a group. The difference in the use of the *Commonality* narrative tone was insignificant between the FLRS industry (median = 50.45) and the Retail industry (median = 50.71), U = 400.50, z = .139, p = .889, r = 0.02.

Figure 3: Trends of narrative tone over time



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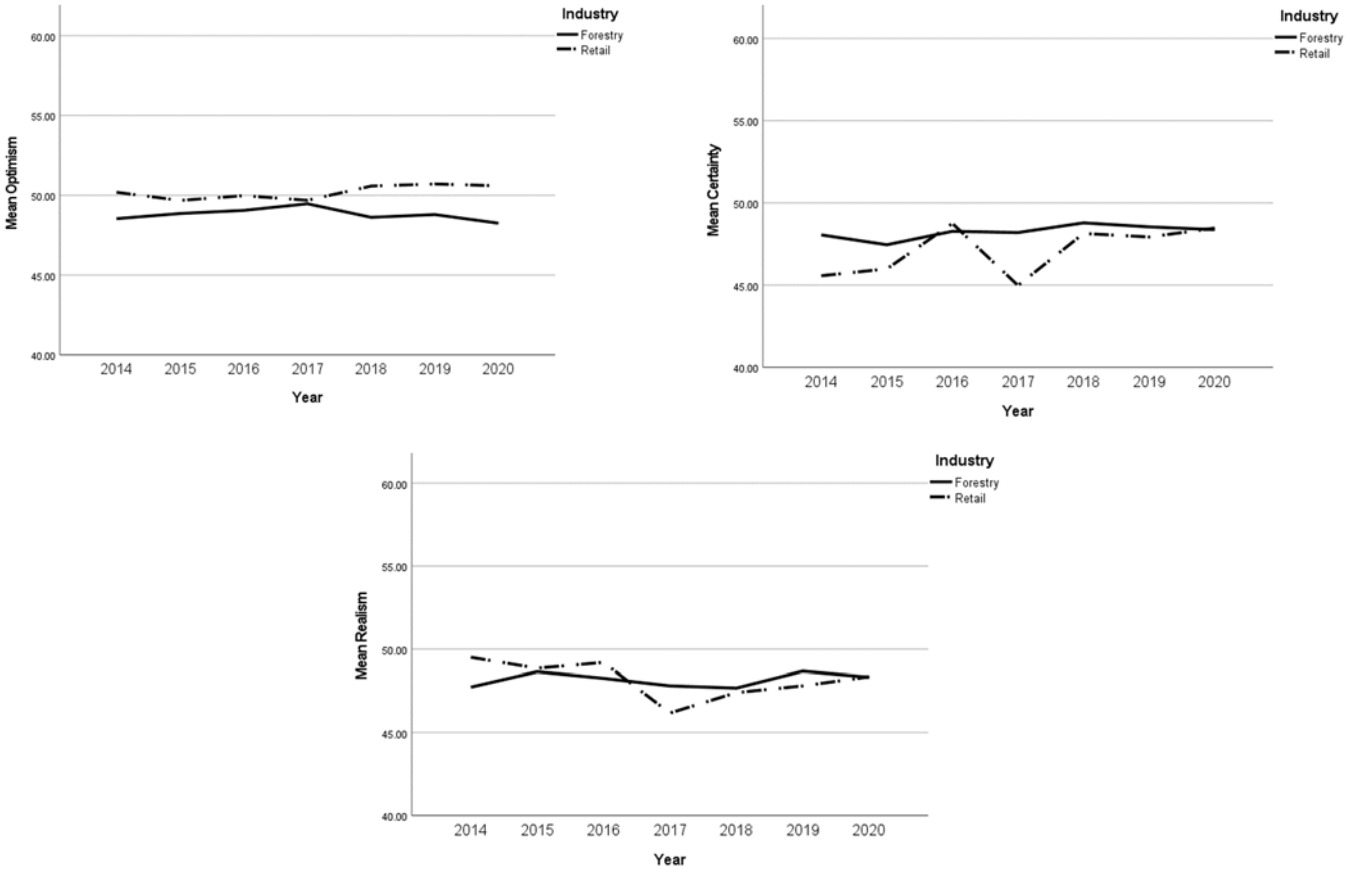

For the second-most popular narrative strategy, the Retail industry tended more towards the use of *Optimism* language (language that endorses a person, group, concept, or event or that highlights their positive attributes) while the FLRS industry uses more *Activity* words (language emphasising movement, change, the implementation of ideas, and the avoidance of passivity). *Optimism* was the third most prevalent tone for the FRLS industry. A Mann-Whitney U Test of the difference in the use of the *Optimism* narrative tone was significant between the FLRS industry (median = 49.26) and the Retail industry (median = 49.94), U = 581.00, z = 3.097, p = .002, r = 0.41 with the *Optimism* score being significantly higher for the Retail industry. A Mann-Whitney U test revealed a significant difference in the *Activity* narrative tone of the FLRS industry (median = 49.16) and the Retail industry (median = 47.41), U = 178.50, z = -3.499, p = .000, r = -.46 with the *Activity* score being significantly higher for the FLRS industry.

The least-used tone for the FLRS industry was *Realism*, whilst that for the Retail industry was *Certainty*. *Realism* uses words that describe tangible matters that affect everyday lives, whilst *Certainty* refers to inflexibility and completeness. The Mann-Whitney U Test difference in the use of the *Realism* narrative tone was insignificant between the FLRS industry (median = 48.12) and the Retail industry (median = 47.72), U = 388.00, z = -066, p = .948, r = -0.01. For the use of the *Certainty* narrative tone the difference was also not significantly different between the FLRS industry (median = 48.24) and the Retail industry (median = 47.18), U = 294.50, z = -1.598, p = .110, r = - .21.

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The trends over time for the use of specific narrative tones are depicted in Figure 3. For *Activity* and *Optimism,* the lines never cross and the use of these two tones are significantly different between the two industries.

DISCUSSION AND CONCLUSIONS

The purpose of our study was to find whether JSE-listed companies in the FLRS industry, given the environmentally sensitive nature of their operations, use specific narrative strategies in their integrated reports. The results from an analysis of the FLRS industry were compared to results from a similar analysis of the integrated reports of companies in the Retail industry, which have a lower impact on the environment and are thus expected to disclose information differently.

The findings show firstly that the integrated reports of companies in both industries tend to lack readability. However, the lack of readability is more pronounced in the FLRS industry. This finding is based on specific readability formulae, as well as other measures that affect readability, such as word count, the use of passive voice sentences, and 'wordy' items. Readability has declined over time and this decline is even more prominent in the FLRS industry than in the Retail industry. Low readability in other studies is a means to hide negative information, and this might be true for our sample of FLRS that engages in activities that harm the environment in terms of emissions and effluents generated during the processing of wood products.

The analysis of the narrative styles used in integrated reports shows that the reports in both industries tend to make use of words relating to *Commonality* most often. In the FLRS industry specifically, the use of *Commonality* and *Activity* words are most prominent. This may be a means to give the reader a certain impression of the company, namely that the company stands for certain principles (Commonality) and that the company is actively involved in change and the implementation of ideas (Activity). Non-parametric tests reveal that *Activity* and *Optimism* as narrative strategies differ significantly between the two industries, whilst *Commonality, Realism* and *Certainty* displayed no statistically significant differences. It seems that the intensity of use (or lack thereof) in these three tones could be generic to integrated reports. However, *Activity* and *Optimism* could be influenced by business models and operating and market conditions of specific industries. These two narrative strategies could also be used for impression management to create favourable opinions with the shareholders and other stakeholders. Management seems to be active and in charge (FLRS industry), or optimistic about their plans and the future (Retail industry).

The study contributes to the paucity of literature on narrative use in corporate reports and its potential use for impression management in the Sub-Saharan Africa context. We find South African companies in industries that have a larger environmental footprint, in this case, FLRS, have longer and less readable reports than companies in the Retail industry. We also find notable differences in how narrative tones are used. We argue that the combined findings can indicate the presence of impression management tactics in the FLRS industry.

The purpose of corporate reports is to communicate effectively in a way that readers can understand. If companies make use of specific narrative strategies or reduced readability to manage the impressions of stakeholders, it brings to question the reliability of the information for decision-making. The study has implications for various stakeholder groups as it suggests that reporting or disclosure

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is not used for the purpose it was intended for, namely, to inform, but rather to manage impressions through specific narrative choices. For policymakers, regulators, and authorities, the results from this study show that integrated reports are not necessarily accessible in terms of readability. The research is also a call upon companies to ensure the language used in their non-financial narrative reporting is written plainly and without bias so as not to unduly influence or manipulate stakeholders.

The most significant shortcoming of this study is the small sample size. However, even though the sample size is small, as an exploratory study it paves the way for more intensive future investigations into the narrative strategies used by companies, especially in their integrated reports. To expand on this study, one can include other industries and investigate the reports over a longer period. The specific narrative strategies of the companies can also be related to other company characteristics.

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

WESTERN CAPE REGION

An Exploration of the Relationship between Company Characteristics and the Quality of Integrated Reporting

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ABSTRACT

Integrated reporting has added a vital perspective in the field of corporate reporting which has allowed for greater shared understanding of the factors that feed into the value-creation process. The extent to which integrated reporting can achieve this aim has however been limited by its quality, as this affects how well information is communicated. The literature on integrated reporting quality is mature but there are limited studies which focus on the determinants of this quality, particularly company characteristics. This study addresses the gap by investigating the impact of five characteristics on integrated reporting quality – size, industry, profitability, financial leverage, and growth opportunities. A multiple linear regression model was used on the companies listed on the Johannesburg Stock Exchange and results show that companies in the financial sector are associated with greater integrated reporting quality. This is attributed to the heightened regulatory and stakeholder pressure placed on this industry.

KEYWORDS: Integrated reporting; quality of integrated reports; JSE Top 100; company size; industry; profitability; financial leverage; growth opportunities; IIRC; International <IR> Framework; King IV Report on Governance

INTRODUCTION

Integrated reporting (IR), the response to the need to go beyond mere financial disclosure, is the latest novelty in the field of corporate reporting (Vitolla, Raimo, Rubino, et al., 2020). IR came into fruition driven by a keen interest from both academics and stakeholders in the interactions between the determination, implementation, measurement and reporting of a company's strategic objectives (Parker, 2012).

The quality of IR is important to its users, because it determines its capacity to present the strategic elements that describe company performance and value creation (Pistoni et al., 2018). The implementation of IR is however still at its infancy compared to other corporate reporting tools, hence the quality is not yet at the standard that will enable it to achieve its broad objectives (De Villiers et al., 2017).

Following the implementation of IR, fundamental questions were raised about the impact of corporate characteristics on IR quality (IRQ) (Melloni, 2015). These factors could theoretically affect the ability of a company to fully adhere to the recommendations of the International Integrated Reporting Council (IIRC) as stipulated in the International <IR> Framework (the Framework) (IIRC, 2013), and thus limit the full potential of the reporting tool.

The studies on the determinants of IRQ however, are very limited, with most studies investigating the effects of IRQ (Vitolla, Raimo & Rubino, 2020). This underscores the importance of this paper in contributing to the literature of determinants of IRQ by looking at corporate characteristics.

This paper investigates whether company characteristics, namely size, industry, profitability, financial leverage, and growth opportunity are associated with IRQ. A multiple linear regression was employed, and results show that sector is a statistically significant predictor of IRQ.

This paper will examine the relevant literature, followed by an explanation of the methodology employed. This will be followed by an analysis and discussion of the results, and finally the conclusion.

LITERATURE REVIEW

IR is a novel tool in the field of corporate reporting, and has drawn attention from professional and academic fields with its ability to measure the capacity of companies to create value over time (Vitolla, Raimo, Rubino & 2020). A critical aspect of this ability however, is the quality of these integrated reports, as this determines the usefulness of these reports to its users (Pistoni, Songini & Bavagnoli, 2018).

Background

Studies relating to the quality assessment of IR are still at an early phase and remain sparse (Vitolla, Raimo, Rubino, et al., 2020). This is a consequence of the relative recency of its implementation and its gradual adoption across the world, which is yet to gain secure traction in the corporate reporting atmosphere.

ISBN NUMBER: 978-0-620-92690-4

The initial studies into the quality of integrated reports have found that IR is not well diffused among companies across the world as it mostly is a voluntary disclosure (De Villiers et al., 2017). They further found that when IR is adopted, the Framework is not fully implemented by companies to the extent that is required, thus resulting in an adverse impact on the quality of this reporting.

The overall findings from studies show that the quality of integrated reports is generally low. Companies widely apply the Framework, but they fail to substantiate the content with information about the fundamental aspects of the value-creation process, such as the business model, the use of capitals and risks facing the entity (Pistoni et al., 2018).

De Villiers (2017) identified three main approaches which have been used to measure the quality of integrated reporting. Firstly, databases such as Bloomberg collect information about the information which is contained in all reports which studies like Serafeim (2015) have used to assess how well these disclosures are made. Secondly, content analysis can be performed by evaluating the actual disclosures made in the report and using a scoring system to assess the quality as was done by Zhou (2017). Finally, a reference to an external source such as a competition or survey can be performed as such Barth et al. (2015) who used the results from the EY Excellence in Reporting Awards as a proxy for quality.

Company characteristics influencing integrated reporting quality

Studies into IR have identified multiple company characteristics which have an impact on its quality (Vitolla, Raimo, Rubino, et al., 2020). In this paper, size, industry, profitability, financial leverage, and growth opportunities were explored.

Size

Wild and Van Staden (2013) conducted a study of the integrated reports of companies on the IIRC Emerging Examples Database and found that larger companies produced integrated reports with a higher level of quality than smaller companies. This was attributed to the fact that these larger companies were more likely to achieve the Framework's *Content Elements* and they applied the six capitals model better. Sierra-García et al. (2015) later corroborated these findings by concluding that larger companies are also more likely to practise IR.

A reason for this positive relationship was proposed by Oliveira et al. (2010) who argued that larger companies are more likely to have stronger financial, organisational and human resources that are conducive to voluntary disclosures such as IR. Smaller companies with less of the resources required to measure, account for and report the additional financial and non-financial information required for IR would then be less able to produce reports of the same quality as those of larger companies.

Larger companies also differ from smaller companies in that they are more likely to have complex operating structures across various geographical markets which requires a more extensive use of capital markets (Lee & Yeo, 2016). This places a greater importance on the quantity and quality of information that is disclosed through the integrated report as it will have an impact on the company's interactions with its various stakeholders (García-Sánchez et al., 2013).

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On the contrary, a study by Hallgren and Johansson (2016) found that larger companies actually provide corporate reporting disclosures with a lower level of quality. They provided two possible reasons for this – firstly that larger companies employ perception management techniques by making it more difficult to read specific information on which they may not want particular attention. The second possible reason is that larger companies are more likely to have complex operations which makes them difficult to effectively communicate through an integrated report.

Other studies are indifferent on the issue. This was recently reaffirmed by Lai et al. (2016) who failed to find a significant relationship between size and the quality of integrated reporting.

In conclusion, the majority of studies observe a positive relationship between company size and the quality of their corporate disclosures due to greater financial resources, and a stronger expectation placed on them by stakeholders. The following null hypothesis can therefore be constructed:

***H_0**: There is no association between a company's size and IRQ.*

Industry

Multiple studies have concluded that a company's industry is a determinant of the quality of their disclosures. Wild and Van Staden (2013) focused on IR and concluded that a company's industry is a determinant of how well it will achieve compliance with the Framework's *Content Elements*.

The most prominent reason for the differences in disclosure quality is that there are differences in the reporting behaviour of, and market response to, companies in in certain sensitive industries (Bachoo et al., 2013). Some industries, such as the mining industry in South Africa, have regulations which stipulate the kind of information they should disclose, such as mine productivity and safety statistics (PricewaterhouseCoopers, 2017). This argument is, however, not fully supported by Federica et al. (2016) who investigated the early adopters of IR in the South African mining industry to find that there is no homogenous reporting behaviour among companies in the sector.

An explanation for certain industries disclosing more than others is that highly visible companies are more subjected to pressure from the media, NGOs, and regulators regarding social and environmental issues (Ali et al., 2017). The result of this is that these companies have to provide good quality disclosure on these issues in order to show their responses to these issues.

Contrary to these findings, a study of the annual reports of Saudi Arabian companies conducted by Alsaeed (2006) found an insignificant relationship between a company's industry and its level of disclosure. Da Silva Monteiro and Aibar-Guzmán (2010) affirmed these findings when they conducted their own study of 109 large companies in Portugal to also conclude that there is a lack of a significant relationship.

Lai et al. (2016) found a limited effect of a company's industry on the quality of its integrated report. They conducted the study across ten industries and they only observed a significant relationship between the industry and the quality of the integrated reports in three industries, namely 'basic materials', 'financials', and 'industrials', that were most likely to practise IR.

The studies above do not show a conclusive relationship between corporate reporting quality and industry. Several studies argue that certain industries have mechanisms which are conducive to

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good corporate reporting disclosure, such as legislative reporting requirements and stakeholder pressure. Contradicting studies did not observe a significant relationship between these factors. The following null hypothesis can thus be developed:

***H_0**: There is no association between a company's industry and IRQ.*

Profitability

Companies that are experiencing weak performance, such as low profitability, may choose a communication strategy that is characterised by deflecting the focus on the negative issues and highlighting other achievements and accomplishments in their reports (Lindblom, 1994). The implication of this is that companies with low profitability will direct attention to improving the quality of their integrated reports as a positive communication strategy. This theory was more recently confirmed by Campbell et al. (2014) who found an association between the level and quality of disclosure and a variety of risk factors in addition to low profitability such as high leverage.

Frias-Aceituno et al. (2014) investigated whether the decision to practise IR was affected by a company's profitability but did not find a significant relationship. This suggests that companies may not actually use IR with the intention of drawing attention to the positive aspects of their companies (Mahoney et al., 2013). The decision to adopt IR is associated with high levels of IR quality (Association of Chartered Certified Accountants, 2017) which makes a profitability a meaningful factor to consider give the lack of studies directly addressing it.

An opposing view was suggested by Hallgren and Johansson (2016) who conducted a study of European gas and oil companies. They came to the conclusion that profitable companies have a higher level of disclosure than non-profitable companies.

There is one study which found an insignificant relationship between profitability and the quality of disclosure. In a recent paper, Lim et al. (2017) investigated the relationship in companies listed on the Australian Stock Exchange and they did not find significance using return on equity and return on assets as a proxy for profitability.

Overall, the above studies point to IR quality increasing with decreasing profitability likely due to an attempt by companies to deflect focus from the negative financial performance. The following null hypothesis can thus be developed:

***H_0**: There is no association between a company's profitability and IRQ.*

Financial leverage

There are conflicting studies on the interaction between a company's leverage and the quality of IR. An early paper that is often referred to is a study done by Leftwich et al. (1981) who concluded that there is an increase in the demand for information from companies as debt levels increase due to more stringent monitoring requirements.

More recently it is found that lending institutions do require a wider variety and more comprehensive information from companies, which results in particular reporting strategies that will increase the quality of the information (Lai et al., 2016). Another potential reason for companies improving the quality of their disclosure is that they may try to show their future earnings potential to shareholders

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and debtholders as a way of convincing them to retain their capital in the business (Abeysekera, 2011).

Lee and Yeo (2016) conducted a study of the integrated reports of listed companies in South Africa and they found that better quality of disclosures arising from IR reduces agency costs and information asymmetry between management and providers of external financial capital. Shareholders and debtholders are better able to monitor the risk associated with their capital when adequate disclosure is provided about the company's activities which then enables them to hold management accountable.

There have been some contradicting studies to the findings discussed above. Barnea and Rubin (2010) conducted a study of 3000 of the largest companies in the United States and they found a negative relationship between leverage and level of corporate social investment (CSI) disclosure. This could be because information contained in CSI disclosures may not be directly relevant to a company's ability to generate enough cash flows to repay providers of capital. Although CSI disclosure is distinct from IR, Pistoni (2018) has shown that many of the factors influencing the level and quality of the disclosures in both documents are related as they are both voluntary disclosures made to respond to the information needs of stakeholders.

Mahoney et al. (2013) did not find evidence of the impact of leverage on the adoption of IR in US companies. Of the companies that do practise IR, Wild and Van Staden (2013) concluded that a company's leverage is not associated with how well it achieved the guiding principles provided for in the Framework. Campbell (2014) did however identify a positive relationship between IR quality and financial leverage.

Thus, there are few studies directly addressing the link between financial leverage and IR quality, but those that do show a positive relationship. This relationship is mostly attributable to more stringent financial and non-financial disclosure requirements by lenders when financial leverage is high. The following null hypothesis is this constructed:

***H_0**: There is no association between financial leverage and IRQ.*

Growth opportunities

Maniora (2017) conducted a study of both the integrated reports and sustainability reports of companies around the world. The findings showed that companies that practise IR had a higher market-to-book ratio, suggesting that they have greater growth opportunities.

A classic theory for this relationship by Smith and Watts (1992) suggests that a high market-to-book ratio indicates that a company is capable of generating large revenues in the future. This situation is, however, indicative of information asymmetry since the directors in a high-growth company have inside knowledge about the investment that will result in this growth, while other stakeholders do not (Smith & Watts, 1992). The information asymmetry between the directors and stakeholders would thus incentivise directors to produce reports with good levels of disclosure quality to meet the information needs of the users.

A situation characterised by information asymmetry is not advantageous for a company in a growth phase (Prado-Lorenzo & Garcia-Sanchez, 2010). Therefore the most likely result is that companies

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will disclose a greater volume of information in better quality reports in order to reduce this problem of information asymmetry (García-Sánchez et al., 2013). A high-growth company increasing the level and quality of its disclosures will result in it lowering its cost of external financing through the lower information costs incurred by potential providers of capital (Verrecchia, 2001) hence increasing its growth opportunities (Bushman & Smith, 2001)

Most studies show that a positive relationship exists between a company's growth opportunity and IRQ. The following null hypothesis can thus be developed:
***H_0**: There is no association between growth opportunities and IRQ.*

METHOD

This study will attempt to assess the relationship between company characteristics and the quality of IR. The methodology used to test the null hypotheses developed above will be discussed in this section.

Research population and sample

The population of the study is comprised of the companies that make up the Top 100 companies, ranked by market capitalisation, listed on the Johannesburg Stock Exchange (JSE) Limited, which account for 95% of the market capitalisation at that date. The quality of these companies' IRs will be obtained from the results of the Excellence in Integrated Reporting Awards, an annual competition for the best prepared IRs. Due to the availability of the latest Excellence in Integrated Reporting Awards report at the time of data collection, from which the dependent data was obtained, all the data measurements for the independent variables and the integrated reports studied relate to the latest year-ended on or before 31 December 2016 (EY, 2017).

Research design

This section will describe the research model employed to test the null hypotheses, as well as the dependent and independent variables that form part of the model. Moreover, processes taken to test the robustness and appropriateness of the model will be explained.

Research model

Given that the aim of the study is to determine the impact that the independent variables have on the dependent variable, a linear regression is an appropriate method to investigate the relationship (Poole & O'farrell, 1971). The model will regress five independent variables against one dependent variable, IRQ. A cross section analysis focusing on a single financial year will be used because, as stated by Pistoni et al. (2018), a large variation in the independent and dependent variables is not expected over time.

The multiple linear regression model is expressed below:

$$Y = \beta_0 + \beta_1 ASSETS + \beta_2 ROE + \beta_3 PERATIO + \beta_4 DERATIO + \beta_5 SECTOR + \beta_6 CTRLBOARDDIV + \varepsilon$$

Equation 1: Multiple Regression Equation

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Dependent variables

The dependent variable is a score that describes a measure of IRQ. The score is broken down into four categories of the Framework which need to be applied to integrated reports in order to achieve the requirements of the framework.

The measurement of IRQ was obtained from raw score data requested from the adjudicators of the EY Excellence in Reporting Awards. The data comprises the marking plan for all the 100 companies that were ranked as part of the 2017 competition. Companies are awarded a score for the various categories outlined below, and the total score out of 150 is used to rank the integrated reports included in the survey (EY, 2017).

Below are the four categories from which the total score for IRQ is derived:

I. *The Capitals*
II. *Value Creation*
III. *Guiding Principles*
IV. *Content Elements*

The first two categories, *The Capitals* and *Value Creation*, are collectively called the *Fundamental Concepts* of the Framework, which underpin and reinforce the requirements and guidance within the Framework (IIRC, 2013). *The Capitals* is a measure of how well an integrated report describes all the capitals that are relevant to its business model as well as all the transformations encountered throughout the value creation process (IIRC, 2013).

Value Creation is a measure of how well an integrated report depicts the story of how it creates value using the six capitals in the context of the company's external environment, its business model, mission and vision, risks and opportunities, strategy and resource allocation performance and outlook (IIRC, 2013). Companies are allocated a score out of 20 for addressing these two categories.

Guiding Principles is a measure of how well an integrated report encapsulates the guiding principles that underpin the preparation and presentation of an integrated report, informing the content of the report and how the information is presented (IIRC, 2013). The *Guiding Principles* measure is allocated a score out of 50 which comprises each of the following individual principles, each having been allocated a score out of 10 (EY, 2017):

i. *Strategic focus and future orientation*
ii. *Connectivity of information*
iii. *Stakeholder relationships*
iv. *Conciseness*
v. *Reliability and completeness Consistency and comparability*

Content Elements is a measure of how well an integrated report incorporates the content elements into the communication of how it creates value (IIRC, 2013). The *Content Elements* measure is allocated a score of 80 which comprises each of the following individual content elements, each having been allocated a score of 10 (EY, 2017):

i. *Organisational overview and external environment*
ii. *Governance*
iii. *Business model*
iv. *Risks and opportunities*

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v. *Strategy and resource allocation*
vi. *Performance*
vii. *Outlook*
viii. *Basis of preparation*

Independent variables

Five independent variables have been selected from the literature – assets, sector, return on assets, debt-equity ratio and . Board diversity was further included in the model as a control variable.

The *ASSETS* variable is a measure of how large a company's operations are. Wild and Van Staden (2013) used the natural logarithm of total assets as a proxy for size. The natural logarithm is used to normalise the data where there may have been skewness due to companies having varying sizes of total assets. The natural logarithm of total assets was therefore used as a measure for size for this study.

The *SECTOR* variable is an indicator for the sector or industry within which a company is categorised. Regulators, stock exchanges, and other bodies classify all companies into specific industry groups and these groups were used as indicators for sectors/industry by Wild and Van Staden (2013). For this study, the Industry Classification Benchmark (ICB) codes adopted by the JSE (Johannesburg Securities Exchange Limited, 2018) were used. The three sectors are stipulated below:

- SA Resources – JSE listed companies that belong to ICB Industries Oil & Gas and Basic Materials
- SA Financials – JSE listed companies that belong to ICB Industry Financials
- SA Industrials – All remaining companies, i.e.: JSE listed companies that do not belong to Financials or Resources

ROA (Return on assets) was used as the measure for profitability. This measure was also used by Frias-Aceituno et al. (2014) as proxy for profitability when they assessed the explanatory factors for IR and sustainability reporting quality. Return on assets will give us a wide view of profitability as it considers capital employed by both equity-holders and debt-holders (Christina Marito & Dewi Sjarif, 2020), both of whom are target users for IR.

DE Ratio (Debt-equity ratio) represents the variable that measures a company's financial leverage. Barnea and Rubin (2010) used the debt ratio as a measure of leverage, which represents the proportion of assets funded by liabilities. It does, however, not account for the risk associated with the equity invested in the company. For this reason, the debt-equity ratio was chosen as used by Abhayawansa and Guthrie (2016) because it shows how much debt is being used to finance assets relative to the value of the equity in the company.

The market-to-book ratio can be used to measure growth opportunities (Melloni et al., 2017). However, the market-to-book ratio may also distort the analysis where there are differences in the asset intensity depending on the business model of the various companies. The price-earnings ratio was therefore used as a measure of growth opportunities as it removes these biases and is represented by the *PE Ratio* variable. A relationship has been observed between price-earnings ratio and the growth prospects that a company faces (Fama & French, 2002).

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To increase the robustness of the model, a control variable has been added. A strong association has been identified between a company's governance characteristics and the quality of its integrated report. Board diversity has thus been included as a control variable as it has been shown to be a strong indicator of corporate governance strength (Vitolla, Raimo & Rubino, 2020). The diversity of a company's board is measured by the *BOARDDIV* variable. There are many different factors that can be used to measure diversity such as race, gender, age, citizenship, ethnicity and occupation. Gender proportion was chosen as the measure for the *BOARDDIV* variable as it one of the most debated and significant issues facing modern corporations among all the diversity factors (Rao & Tilt, 2016).

Regression assumptions

The statistical technique used to perform a multiple regression analysis is known as an Analysis of Variance (ANOVA). For the regression test procedures of ANOVA to be valid, the assumptions of linearity, multivariate normality, absence of multicollinearity and singularity, absence of correlation and homoscedasticity must be met (Myers, 1990). These assumptions were tested and were all met.

Data collection method

This section describes the procedures that were carried out to obtain the data for this study. The dependent and independent variables are discussed separately.

Dependent variables

The measurement of the dependent variable was obtained from raw score data requested from the adjudicators of the EY Excellence in Reporting Awards. The data comprises the marking plan for all the 100 companies that were ranked as part of the 2017 competition.

Independent variables

Table 1 presents the description of the data collection methods for the independent variables.

Table 1: Independent variables data collection method

Variable(s)	Data collection method
ASSETS **SECTOR** **ROE** **DE RATIO** **PE RATIO**	The Bloomberg Professional Service software was used to extract these variables in their raw formats. The list of the companies in the sample, as well as each of these variables, was inputted and the results were extracted as outputs.
CTRL - BOARDDIV	All the population integrated reports, annual reports and/or annual financial statements were inspected, and the number of directors who were disclosed as female was counted. Board diversity was then calculated as the proportion of female board members to the total number of board members.

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	For those integrated reports where the disclosure was not made, references to the individual directors using gender-specific terms such as “female”, “Ms”, “she” or “her” were used as a proxy for the determination of gender.

Data analysis and synthesis

The raw data was evaluated for robustness by analysing the reasonability of all values in the context of the variables being measured. Further, descriptive analyses were performed to get an overall perspective of the data using statistical tools such as box plot diagrams, scatter plot diagrams, correlation matrices and Kernel density plots. The data was found to be appropriate in describing the values of the variables being measured.

Validity and reliability

The data was tested for validity and reliability. This section will discuss the considerations made to determine whether or not the data used to describe the dependent and independent variables is valid and reliable.

Dependent variables

Each of the adjudicators are professors at the University of Cape Town’s College of Accounting with extensive experience in the field of financial reporting. They have all been part of the EY Excellence in Reporting Awards since they were introduced. The adjudication process is very robust, particularly in that each of the integrated reports are independently judged by each adjudicator. EY’s Professional Practice Group also provide oversight over the process to ensure its integrity (EY, 2017).

Independent variables

The financial information was obtained from the Bloomberg Professional Service. Bloomberg is one of the top financial services software in the world with a reputable standard since 1998. The information supplied by Bloomberg is obtained from the companies’ annual financial statements. This information can be assumed to be reliable as all the companies in the sample were audited by independent external auditors.

Limitations

The following are the inherent limitations of the multivariate regression analysis model which must be considered when analysing the results (Lim et al., 2007):

a. The outcome of the model cannot attribute the causality of the dependent variable from the independent variable. Due to the nature of the statistical modelling, only an associative relationship can be inferred from the results. Any investigations into the causal nature of the respondents would require a different test.
b. The choice of variables is not a matter of statistics but rather one of logic and research design. The success of the model depends on the variables chosen but these were selected arbitrarily and not by any statistical means, hence the model has no bearing over that aspect of the research design.

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c. There is a limit to how much the generalisation can be applied to the results of the ANOVA. The conclusions from the study can only be applied to the population from which the sample was extracted.

With regards to evaluating the results, a more conservative approach could be taken by dividing the significance level by the number of independent variables as there is joint significance (Stata Corp LLC, 2017). While this would add further robustness to the results, this study will make use of the regular significance level of 5%. A more conservative approach can be taken in a further study when the model has been refined by reducing the number of independent variables to/with the ones that are statistically significant (Hair et al., 2006).

RESULTS

This study examines the relationship between various company characteristics and the quality of IR. The results of the statistical analysis performed is presented here.

Descriptive analysis

The dataset consists of 10 independent variables, one of which is categorical, the remaining being continuous. The categorical variable is *Sector* whose output summary is shown below in Table 2:

Table 2: Output summary: Categorical variables

Sector	Freq.	Percent	Cum.
Resources	**23**	**23.00**	**100.00**
Financials	**35**	**35.00**	**35.00**
Industrials	**42**	**42.00**	**77.00**
Total	**100**	**100.00**	

The Sector variable has three categories, *Resources, Financials*, *and Industrials* with 35, 42 and 23 companies respectively. The remaining independent variables are continuous. Their output summaries are shown in Table 3 below:

Table 3: Output summary: Continuous variables

Variable	N	Mean	Sd	Min	P50	Max
ASSETS (Billions)	100	146.4065	463.1984	0.273	31.1895	3875.7150
ROE	100	.1897914	.4510245	-.347486	.133353	4.415161
DERATIO	100	2.190182	4.35966	.0002	.87965	32.85
PERATIO	90	22.82468	44.12759	.854	15.5498	401.5
BOARDDIV	100	.2086694	.1173893	0	.2000	.6363636

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All the variables have a frequency of 100 in line with the sample size. The exception is *PE Ratio*, which is the only variable where a blank response is a possible outcome, as discussed below.

The first variable is *ASSETS*, which was standardised due to the wide variability of assets across various companies. The standardised metric provides for more meaningful statistical analysis. Assets vary greatly ranging from a minimum of R274 million to a maximum of R3.88 trillion. The mean value of assets is R146 billion which is significantly higher than the median value of R31.5 billion showing that the distribution is skewed by a few companies with very high asset values. The variability in asset values is as a consequence of differences in the operation structures of companies in different industries. Companies in asset-intensive industries, such as mining and manufacturing, are more likely to have a higher asset base that service-based industries. This variability is addressed by standardising the metric to have a standard deviation of one and a mean of zero.

ROE, the variable representing return on equity, is the next variable. *ROE* has a mean of 0.1897 showing that companies in the JSE Top 100 made a return on their shareholders' equity of 18.97% on average. The standard deviation of 0.4510 means that 68% of the *ROE* lies 45.1% on either side of the mean. This is a relatively wide dispersion, further supported by the wide range from a minimum of -34.75% to a maximum of 441.5%. The wide range of values for *ROE* is indicative of the varying financing structures of companies listed on the JSE.

DE Ratio provides us with insight into the debt-financing structures of companies in the sample. The mean *DE Ratio* of 2.19 shows that the average company in the sample has financed its assets by debt 2.19 times relative to equity financing. Debt financing is therefore more prevalent than equity financing by a ratio of 2.19:1. The standard deviation is 4.35 thus showing a high level of variability in the levels of leverage that are employed by companies. The p50 (median) value is however, quite far off from the mean being much lower at 0.88. This means that the median company has a higher level of equity financing at a ratio of 0.88:1. This suggests that there are a few companies with large *DE Ratio* values pulling the mean up. The normal distribution plots will be inspected to investigate this further. There are extreme minimum and maximum values ranging from 0.0002 up to 32.85. These extremes are expected given the financing structures of different companies where they may be funded almost exclusively by debt (e.g. banks) or equity (e.g. service sector).

The *PE Ratio* variable is the only one with a frequency not equal to the sample size, 90. This is due to the nature of the interpretation of the Price-Earnings Ratio i.e. the market value of a company relative to the earnings returned. Companies which do not return any earnings (i.e. make a loss) therefore cannot have a valid *PE Ratio*. It is noteworthy that a *PE Ratio* of zero is different to a blank *PE Ratio*.

The proportion of females on the board, measured by the *Board Div* variable, ranges from 0% to 63.64%. This measure shows a moderate level of dispersion at a standard deviation of 11.74%. This is because while efforts are being made to increase board diversity, there are not any enforceable levels of female membership on boards. The mean is also very close to the standard deviation at 20.87% and 20% respectively suggesting that the data may be normally distributed in a neat fashion.

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Regression output

A multiple linear regression analysis was used to analyse the association between the dependent and the independent variables. The ANOVA output was used to determine if all the equations, taken together, are statistically significant. The Regression Summary output was then used to obtain the coefficients for all the significant variables.

ANOVA

The ANOVA output is presented in Table 4 below. The output was used to determine the suitability of the model by assessing the relationship between the dependent and independent variables.

Table 4: Analysis of variance

	Analysis of Variance; DV: Total_Score				
Effect	**Sums of**	**df**	**Mean**	**F**	**p-value**
Regress.	16699,7	7	2385,672	2,121145	0,048894
Residual	103473,3	92	1124,709		
Total	120173,0				

The ANOVA assesses whether the null hypothesis which states that the population means are equal can be rejected. The p value is statistically significant at the 5% level with a p value of 0.049, thus enabling us to comfortably reject the null hypothesis. We can conclude that the model is appropriate and assess regression output for the significance of individual variables.

Regression summary

Table 5: Regression summary

	Regression Summary for Dependent Variable: Total Score **R= ,37277863 R^2= ,13896390 Adjusted R^2= ,07345029** **F(7,92)=2,1211 p<,04889 Std.Error of estimate: 33,537**					
N=100	**b***	**Std.Err.**	**b**	**Std.Err.**	**t(92)**	**p-value**
Intercept			83,3409	9,33422	8,92853	0,000000
Std Asset	0,043948	0,099484	1,5235	3,44873	0,44176	0,659699
Financials	-0,277457	0,133810	-20,1654	9,72529	-2,07350	0,040921
Industrials	-0,221137	0,127382	-15,5319	8,94693	-1,73601	0,085910
ROE	-0,079094	0,100806	-6,1098	7,78706	-0,78461	0,434696
DE_Ratio	0,028132	0,106897	0,2248	0,85428	0,26317	0,793008
PE_Ratio	-0,028589	0,098274	-0,0010	0,00329	-0,29091	0,771776

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CTRL-BOARDDIV	0,290018	0,099995	86,0761	29,67814	2,90032	0,004662

As a measure of how much of the variance in the dependent variable was accounted for by the model, this multiple regression has R^2 and adjusted R^2 values of 0.14 and 0.07, respectively. Only the R^2 value will be considered given that this is a multiple linear regression, and we need to assess the variance of only those variables which are significant.

The R^2 value shows that 7% of the variance in the IRQ score can be explained by this model. Given that this model is analysing one aspect of the determinants of IRQ, i.e., operational structure, this value is appropriate.
The intercept has a value of 83.34 as the base score which would then be increased or decreased by the other variables based on how they interact with IRQ. This intercept is statistically significant at the 1% level with a p value below 0.001%.

All the variables, with the exception of SECTOR, were found to be not statistically significant. These range from ROE with a p value of 0.43 to PE Ratio with 0.78 thus allowing the null hypothesis to be rejected at both the 5% and 10% level.

For the SECTOR variables, the RESOURCES variable was used as a benchmark. This allows us to interpret the results for FINANCIALS and INDUSTRIALS by stating them in relation to RESOURCES benchmark.

Of these, FINANCIALS was statistically significant with a p value of 0.04. This allows us to reject the null hypothesis of a nil coefficient at the 5% significance level. The coefficient is -20.17 which means relative to the RESOURCES sector, FINANCIALS is predicted to have an IR quality which is 20.17 lower.

INDUSTRIALS also interacts in a similar fashion although with a lower coefficient of -15.53. The model thus predicts organisations in the INDUSTRIALS sector to have an IR quality which is -15.53 lower than a counterpart in the RESOURCES sector. With a p value of 0.086, this variable is statistically significant at the 10% level.

DISCUSSION

Of the five variables investigated, only industry was statistically significant. This section will thus discuss the results relating to industry and analyse them in the context of the studied literature.

Companies in the financial sector were found to produce integrated reports with higher quality than their counterparts in the resources and industrials sectors. This is in line with the findings by Wild and Van Staden (2013) who also observed a positive relationship between IRQ and companies in the financial services sector.

Since the 2007 global financial crisis, greater attention has been paid to the corporate information provided by companies in the financial services sector (Torchia & Calabrò, 2016). This is because

ISBN NUMBER: 978-0-620-92690-4

this sector is dominated by banks, investment institutions and insurance companies which were at the epicentre of the economic fallout.

This pressure for accountability in the information reported by companies from analysts, investors, and regulators is likely to have contributed to the level of importance that companies in the financial sector place on disseminating information of adequate quality. Lueg et al. (2016) reached the same conclusion from a study on Danish companies where they found that external pressure was a key factor in the decision to adopt IR and to communicate more effectively to stakeholders.

Moreover, Vitolla, Raimo, Rubino, et al. (2020) posits that, in addition to the economic impact of companies operating the financial sector, more attention is being paid to its social impacts and accountability thereof. It is therefore arguable that these companies value IR as a means to clearly communicate all areas of stakeholder interest in relation to their operations.

The value places by companies in the financial sector on IR would be an effective mechanism and a great incentive to improve IRQ as corporate disclosure has been found to be an effective tool at reducing information asymmetry among stakeholders (Javaid Lone et al., 2016). Studies have shown that the implementation of IR has yielded increased transparency with stakeholders (Sun, 2012) and a greater level of trust in the company (Eccles & Serafeim, 2014).

The other variables which were not statistically significant are size, profitability, financial leverage, and growth opportunities. This shows that the internal organisational factors affecting the organisation play a less significant role to IR quality when compared to external factors such as stakeholder pressure.

CONCLUSION

A lot of studies into IR have concluded that is a valuable contribution to the field of corporate reporting by explaining value creation in a way that reduces information asymmetry between organisations and its stakeholders. This study contributed to the gap in the literature relating to factors associated with IRQ by regressing five company characteristics to IRQ.

The findings show that the company characteristic industry, in specific the financial sector, was a statistically significant variable with companies in the financial sector being associated with higher IRQ than their counterparts. Literature has shown that regulatory and stakeholder pressure can contribute to IRQ which explains this paper's findings as companies in the financial sector have been subject to increased scrutiny following the 2007 financial crisis.

This phenomenon shows that market power is also at play in the field of corporate reporting with companies responding to the information demand from the users of IR by supplying it through integrated reports of sufficient quality. This response enables companies to narrow the information asymmetry relative to stakeholders and users of IR thus fostering trust and more fruitful relationships.

This paper thus recommends that investors and other users of IR continue to communicate their information needs to companies as active participation in the reporting process is shown to be

ISBN NUMBER: 978-0-620-92690-4

effective. Secondly, regulators and the IIRC are encouraged to work closely regarding common information needs to synergise the reporting of areas of mutual interest.

Further studies can perform the study on more company characteristics not explored in this paper or using different measures than those used in this study. Another key study is to measure the impact of stakeholder pressure on IRQ as that is a key explanation of the finding in this study.

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

WESTERN CAPE REGION

Digital Transformation Disclosures within Integrated Reports Pre-Covid-19

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ABSTRACT

The digital era has led to the eruption of emerging technologies that pose threats to traditional business models. The effects of the digital transformation shift have caused companies to adapt how they operate, particularly as a result of COVID-19. The effects go beyond mere changes to business processes but have re-imagined products, services, and business models. Considering this, companies will need to assimilate knowledge on how to maximise the benefits that the digital age has to offer by adapting their value propositions and strategic objectives. The re-shaping of organisational business models will allow them to remain competitive in this era. The reporting of companies to stakeholders should encompass the technological innovation of a company as well as well-established plans to maintain business resilience. The objective of this study is to analyse the nature of the disclosures on digital transformation within the integrated reports of the JSE Top 40 listed companies as of 31 December 2018. This provides a reference point for the digital transformation activities companies engaged in pre-COVID-19. This will make use of the content analysis method of research. The study found that most companies are aware of possible digital disruption and have a wide range of disclosures on their digital initiatives. The study also examined the nature of disclosures at a sectoral level and found that there are varying degrees of penetration within sectors. The findings show that the majority of the JSE top 40 companies are well-positioned to reap the maximum benefits of the uprising digital age, by prioritising their digital transformation initiatives and consequently, have reduced the threat of digital disruption on their companies.

INTRODUCTION

Over time companies have adapted their processes to suit the rapidly changing needs of consumers. In the fourth wave of the industrial revolution, one of the biggest contributors to change has been the shift to emerging technologies. The past two decades have experienced one of history's most rapid rates of technology adoption (Maritz & Camarate, 2018), which can be referred to as digital transformation. This transformation was occurring pre-COVID-19, and has been accelerated as a result of the global COVID-19 pandemic. Digital transformation refers to the use of technology to radically improve the performance of enterprises (Westerman et al., 2011). It can also refer to the digital changes that digital technology causes or influences in all streams of human life (Stolterman & Croon, 2004).

The integration of digital technologies, for example, big data, computing networks, artificial intelligence and machine learning, into traditional business models is challenging the structure of companies and how companies interact with each other and with consumers at large. The increase in global infrastructure is causing higher rates of competition, inducing industries to exploit all means of potential innovation (Carlos Goncalves dos & Meleo, 2018). The integration and hyper-connectivity of digital technologies along with the ubiquitous penetration of digital technologies brings about insurmountable potential and exciting opportunities, transforming companies in all sectors (Westerman et al., 2011). Beattie (2000) states that business is becoming more flexible and consumer-driven as opposed to the previous produce-driven perception of business. The emerging technologies are developing a consumer that demands a complete and seamless customer experience (EY, 2019). This can be justified by the rise of ‘born digital’ pioneers (Amazon, Google, Facebook) which have grown to become dominant players in their respective industries, threatening their competitors that have maintained traditional value propositions (Sebastian, Ross & Beath, 2017).

The need for companies in South Africa and all over the world to accelerate their digital initiatives and support a seamless transition is of paramount importance (Westerman et al., 2011). Increasing the reporting thereon will lead to companies up keeping their competitive stance in global markets.

A key objective of the International <IR> Framework (the Framework) (International Integrated Reporting Council (IIRC), 2013) is for organisations to report on the their value creation in the short, medium and long-term, with the reporting on digital technologies becoming more relevant and useful. Although the Framework does not regulate reporting composition, there are guiding principles which underpin the preparation and presentation of reports. Some examples of content elements which may lend appropriately to potential digital disclosures include the reporting of risks and opportunities, business models, outlook and strategy and resource allocation. These content elements are guided by the principles of reports having a strategic focus and future orientation and portraying the connectivity of information (IIRC, 2013). Sound reporting has the attribute of exhibiting a holistic and integrated representation of a company's performance. This fully encompassing view aims to provide investors with a complete image of the company, with the intention of this translating to well-informed decision-making by investors (IIRC, 2011). Due to the recent growth in relevance of digitalised initiatives, further room for research is acknowledged.

ISBN NUMBER: 978-0-620-92690-4

This study aims to provide an analysis of the nature of disclosures on digital transformation within South African integrated reports pre-COVID-19, using a sample of the top 40 Johannesburg Stock Exchange (JSE) listed entities. This will be done by completing a content analysis of the JSE top 40's integrated reports to assess the nature of their disclosures on digital transformation, if any, within three broad categories: technological deployment, key performance indicators (KPIs), and emphasis from leadership. A cross-sector analysis will also be performed in total, as well as a determination of the risk disclosures per industry. This provides a reference point for analysing the changes in digital transformation disclosures as a result of COVID-19, as well as a framework for analysing these disclosures in the future.

LITERATURE REVIEW

This section provides a literature review of the relevant elements of digital transformation and the importance of reporting disclosures. The discussion below highlights key aspects relating to the three categories of analysis on the nature of disclosures.

Rise of the digital economy and digital transformation

Digital technologies are found to be challenging traditional business models and transforming the status quo by facilitating tasks that have a high reliance on connectivity, information usage, prediction, and collaboration. As this can affect many processes in a company, this could have many outcomes for the macroeconomy, for example, the increased efficiency of business operations (Ducharme et al., 2018). The emergence of this phenomenon is a result of a multitude of developments since the mid-1980s, and the concept of digitalisation has matured and established its place in the current global economy (United Nations Conference on Trade And Development, 2017). It has infiltrated into the global economy to an extent that digitalisation and advances in technology are seen to now potentially be, per Comin and Mestieri (2013), at the core of fuelling economic growth over the long term. The potential for digital transformation to lead to increased economic growth shows the positive sentiments for change that can be extracted from digitalisation. This extends to information technology (IT), strategy, business models, products and services, internal and external processes, organisation and company culture (Parviainen et al., 2017).

This digital shift has many potential benefits to companies, some of which include cost reductions, more efficient organisational processes, and increased customer relations. On a broader scale digitalisation has led to reduced unemployment, higher quality of life and greater access to public services (Parviainen et al., 2017). According to the Organisation for Economic Co-operation and Development (OECD) (2014) technology can reduce unemployment by improving worker communication and improving productivity within the global value chain. This could assist the growth of countries, with countries at the most developed stage of digitalisation said to experience 20% more economic benefits than those at the initial stage (Pattheeuws & Vollmer, 2012). Thus, it has become imperative for companies to engage in digital innovation to disrupt their business models before becoming obsolete in a competitive market (EY, 2011).

The digital economy is a difficult concept to define, because of the rapidly changing nature and susceptibility to obsolescence which threatens the relevance of the activities to be included. Barefoot et al. (2018) define the digital economy to include the digital-enabling infrastructure needed for a

ISBN NUMBER: 978-0-620-92690-4

computer network to exist and operate, the digital transactions that take place using that system ('e-commerce'), and finally the content that digital economy users create and access or digital media.

According to the Global Connectivity Index (GCI) (2018) the global digital economy has been growing two-and-a-half times faster than global gross domestic product (GDP) over the past 15 years. South Africa is ranked 48th of 70 nations that were tracked by the GCI, which is an index that tracks investment in information and communications technology (ICT), infrastructure and the relationship between digital maturity and economic growth. This ranking places South Africa in the 'adoption' stage of intelligent connectivity. Meaning that South Africa, as a developing country, is able to grow their ICT development to revitalise and grow the existing industry. This is essential as 'whole new business models, products, processes, and services are emerging every day, accelerating growth towards a digital economy worth upwards of $23 trillion by 2025' which ultimately leads to a 'new economic growth cycle' (GCI, 2018:2). This positioning in the adoption stage placed South African companies in an ideal position to be adapting to the digital transformation demands placed on them by COVID-19.

Industry digital transformation

According to Bughin et al. (2017), digital transformation is in its early stages of remodelling industries, and this has proven to hold true even with companies that are already experiencing a high level of economic growth. The study shows that despite companies experiencing relatively deep levels of penetration of emerging technologies in areas like media, retail, and high tech – industries were still less than 40% digitalised pre-COVID-19 which means that companies were not exploring digitalisation within their companies to its fullest potential (Bughin et al., 2017). Although the focus of this study is the pre-COVID period, this picture has changed dramatically with the COVID-19 pandemic. The main beneficiaries that GCI (2018) has identified would be the global manufacturing industry followed by ICT, professional services, financial services, and government. Industries have already begun feeling the pressure to change and adapt, seeing the introduction of innovative business within recent years (Downes & Nunes, 2013).

One of the industries that have felt the impact of the fourth industrial revolution, or digital revolution is the banking sector. Traditional banking business models are being challenged as new devices, technologies and financial technologies offer more efficient solutions to consumers and companies (Japparova & Rupeika-apoga, 2017). The highly concentrated South African banking sector experienced no different realities from the global spectrum (Simatele, 2015). It has been many years since the sector has experienced healthy competition of this magnitude from new entrants who seem to have been delivering on all variables of the newly informed customer experience. The entrants of fully digital banks have ignited the flame for the integration of unprecedented levels of technological and digital transformation within the traditional value-proposition of South Africa's biggest banks (Maritz &d Camarate, 2018). The integration of digitalisation within the banking sphere does guarantee the advancement of banks as they look at new avenues to induce innovation (Japparova & Rupeika-apoga, 2017). This not only seen in the banking sector but has infiltrated into other sectors too.

Efforts worth noting in one of the promising sectors is the continuing efforts to enforce digitalisation growth within the health care sector, which is primarily due to the extensive research done in this sector over the past years (Reis et al., 2018). The research surrounds the means of making

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healthcare systems safer, more affordable and more accessible by using advanced research to overcome the challenges that exist in this crucial sector of economies globally (Agarwal & Gao, 2010).

The study done by the GCI (2018) has found the retail industry to be one of the industries least affected by intelligent connectivity. This contrasts with KPMG (2018b) which has found digital disruption to have been impactful within retail, with continued growth in the foreseeable future. The study shows that customer expectations have demanded retailers to become catalysts for change by integrating the intelligent automation (robotics, machine learning, and cognitive solutions) to their business models. Technologies that have emerged as a result of the digital age provide retailers with the opportunity to increase the speed, scale and operational efficiency of the business, as well as provide the ability to anticipate customer needs. These technologies serve companies by both complementing and augmenting human tasks (KPMG, 2018a). Retailers have successfully managed to employ these technologies in the adoption of their business models, to date. However, it is seen that although the technologies are in place within companies in the retail sector, consideration must be given to the associated enhancing, maintaining and learning from the wealth of underlying data accumulated. There is still room for improvement in using advanced data analytics to draw more insightful conclusions as well as benefit from the employed digital technology on an organisation-wide level (KPMG, 2018b). Considering the prevalence of digitalisation within industries, it is becoming increasingly important to report on, and may be relevant to include within reporting frameworks.

Integrated reporting

The focus of integrated reporting is to report on the value creation of companies in the short, medium and long term, by adopting integrated thinking (IIRC, 2013). This over-arching principle is guided by the Framework which outlines a set of guiding principles and content elements. Included in the Framework is a strong emphasis on future orientation and strategic future focus that companies need to adopt and report on. Although the Framework does not specify the composition of reports, it offers guidance which aims to direct the focus of the reports (IIRC, 2013).

The required reporting extends further than financial information to include reporting on all resources used as inputs to an organisation's business activities (Cheng et al., 2014). Non-financial disclosures material to future strategic growth for companies must not be overlooked as it allows stakeholders to gauge the company’s progress as well as whether the company can uphold competitiveness and sustainability as technology advances (De Villiers, 2014).

An extension of integrated reporting, as mentioned by Cheng et al (2014), is that the aim is to include a more forward-looking approach instead of a reflection of predominantly past transactional events. This ultimately leads to the evaluation and subsequent reporting of the key opportunities and risks at hand which is valuable for stakeholders who want assurance as to whether the company can survive in the future (Cheng et al., 2014).

The content of integrated reports must, therefore, include the most essential elements affecting the organisation's value-creation process, which will assist investors with decision-making. The inclusion of these disclosures as well as the discussion of the inter-relatedness of all capitals should be retrospective and prospective. This supports the improvements of estimates made by investors of

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the intrinsic value of the organisation (EY, 2014). However, when considering the essential elements to be included in reports and with the need to maintain conciseness, the materiality of information must be evaluated. Although, companies must take cognisance of the fact that the materiality of digital inclusion will differ between companies, due to the differing nature of activities, this transformation can have a high impact on all kinds of business models and organisational strategies, and thus, will be a relevant significant factor that governing bodies should prioritise (Matt et al., 2015).

In measuring the progress of value creation drivers, EY (2014) states that qualitative policy statements are important whereas quantitative KPIs are found to be essential for investors to assess financial materiality. This is the case as KPIs often provide a link within systems that have not yet been articulated to date (EY, 2014).

Risks and opportunities within business

Considering the potential impact of digitalisation, the neglect of digitalisation could lead to many risks for companies which include the loss of market share in highly competitive markets (Ftizgerald et al., 2013). However, companies that are at the frontier of integrated digital solutions adoption will begin to see this as a competitive differentiator and ultimately, be rewarded with higher profitability pay-outs than the companies that have not embraced the digital revolution (Bughin et al., 2017). These digitally maturing companies have successfully integrated various digital technologies into their companies whilst companies in the early stages of digital maturity have focused on implementing only individual technologies (Kane et al., 2015).

To adopt a proactive approach to digitalisation companies that have a complete and well-communicated strategy have shown to be most effective. This is coupled with an imperative complementary component which must pertain to investing in organisational capabilities to execute this strategy to deem the process fruitful (Kane et al., 2015).

Companies can also be incentivised to be investing in these capabilities as companies that embrace digital transformation with a planned and communicated strategy, tend to see higher levels of overall profitability (Morvan et al., 2016). This can benefit the organisation pervasively as Utterback et al. (2018) found that when companies make provisions for innovation within their organisation, this tends to have a spill over effect where growth in one unit of business stimulates growth in other units.

With rapid changes being seen, there are many risks associated with non-adaptation. According to Degryse (2016) employees prefer to work for an organisation with digital progression. The risk of employee retention is intensified by the prediction of EY (2017) which anticipates the future workforces to be engaged in jobs that do not exist today.

Digital convenience also comes with the risk of the depletion of meaningful engagement, where physical interactions are replaced with digital interactions. This comes with the opportunity for companies to innovate to the extent where the aspects of each channel that customers value most are combined to create a seamless and meaningful organisational cross-channel for all their stakeholders (EY, 2011). This would mean altering the consumer journey once more, to facilitate the integration of the consumer experience across both physical and virtual platforms which can be done by implementing models that provide targeted, just-in-time information relating to the product or service (Bommel et al., 2016).

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It is noted that the ubiquitous nature of digital transformation has its effects on all streams of trade on a global level. With changes of this magnitude, there are major risks associated with the lack of innovation of companies, contrastingly, there are also many opportunities that exist herein (Ftizgerald et al., 2013). Companies have the choice to either be complacent about disruption or adapt their business models to ensure continuity of business. The latter of which tends to have benefits far greater than that of just increased profitability as the spill-over leads to growth in other areas of the organisation (Utterback et al., 2018). It has become clear that corporations that do not innovative have little chance of survival in the future (Ftizgerald et al., 2013). This informs the increasing growth in importance of digital transformation within companies as well as its materiality within integrated reporting. This inclusion of digital transformation within integrated reports is to complement the aim of reporting on the value creation of companies in the short, medium and long term (ICPAS & IIRC, 2013). Reporting on integrated thinking within the company assures stakeholders on the organisation's ability to maintain competitivity in the future (Cheng et al., 2014). Considering the existing literature on digital transformation or the utilisation of digitalisation within companies as well as the management of digital transformation is scarce and deals with narrow aspects of digitalisation (Parviainen et al., 2017), this presents an opportunity for further research into this particular area of study.

METHODOLOGY

The objective of this study is to analyse the integrated reports of the top 40 JSE listed companies to understand the nature and extent of disclosures relating to digital transformation. A content analysis methodology is used for the purposes of meeting this objective. This section will outline the method used to perform the study as well as a discussion of the sample chosen for the study.

Sample

The top 40 companies on the JSE ranked by market capitalisation at 31 December 2018 was used as the sample for the study. The reason for choosing the companies in this sample is that the study aims to analyse whether South African companies are keeping up with digital and technological innovation, resulting in a growth of their digital initiatives. The scope of the study was limited to the top 40 companies on the JSE as these companies consistently comprise 80% of the total market capitalisation of the JSE (SA Shares, 2019). By virtue of these companies being the largest corporations in South Africa, they provide a suitable proxy as to how South Africa may be keeping up with digital transformation.

There are a few companies listed on the JSE that have their primary listings on various other exchanges, these dual-listed companies will be included in the study due to their high local operational impact. The 2018 integrated reports have been used because investment and advancement in technology are cumulative, with a forward-looking impact – thus current reporting would encompass the research data relevantly and progressively. The 2018 annual reports of dual-listed companies were used as a substitute for integrated reports, if necessary.

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Data collection and analysis

To determine the nature of reporting on digital transformation, this study employed a content analysis method to evaluate the disclosures within the companies' reports using a disclosure checklist. The disclosure checklist was developed based on a McKinsey & Company publication, authored by De la Boutetiere, Montagner and Reich (2018), and Parviainen et al. (2017), on navigating through the digital space within companies. The checklist was constructed as questions which were grouped into three categories. The questions include a broad range of digital transformation aspects and form the foundation for the analysis of the nature of disclosures of each company. A detailed explanation of what each question entails, as well as the related sub questions are shown in Table 1.

Table 1: Digital transformation disclosure checklist

Categories and sub questions	Explanations and examples
Category 1: Are companies implementing numerous streams of technological deployment within the organisation?	Potential structural changes, if any, made or to be made within the operational context. This category sought to identify the technologies, tools as well as other initiatives the company has in place. The tools and technologies referred to included advancements such as traditional web technologies, cloud-based services, mobile internet technologies, big data and big data architecture, internet of things (IoT), design thinking, artificial intelligence tools, robotics, advanced neural machine-learning techniques, augmented reality and additive manufacturing (de la Boutetiere, Montagner & Reich, 2018).
- Implemented digital tools to facilitate the ongoing analysis of complex information?	Extraction of company data from databases and the associated analysis herein.
- Adapted business processes to incorporate digitally enhanced systems?	Point-of-sale systems, IT systems, organisational systems.
- Implemented digital self-service technology within companies?	Self-service technologies for customers, suppliers and other partners; this further includes e-commerce platforms and digital applications.
- Implemented digital tools to make information more accessible?	Ease of access to previously manual dependent tasks or information viability to customers/suppliers and other partners.

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- Modified traditional operating practices to include new digital technologies?	Integration of new technologies to the company's business model and the way it transacts with all partners/customers.
Category 2: Are there KPIs in place to evaluate digital initiative impact?	Targets are put in place to ensure maximum productivity, no wastage of resources, tracking of benefits, etc. When an organization identifies the specific goals and lays down a realistic and thorough plan to achieve this – the likelihood of a target being met increases. This usually takes the form of a 'digital roadmap,' however, the manner in which a company plans to communicate this plan is discretionary (Parviainen et al., 2017).
- Indicators to measure progress?	The measures considered here could be qualitative or quantitative.
- Mention of targets concerning digital transformation?	The targets could be qualitative or quantitative and could include any goals that the company desires to reach.
- Are the targets linked to KPIs?	Specific KPIs linked to digital transformation.
- Clear communication of the implementation of digital initiatives as well as how the digitalisation would change the overall business strategy or enable the organisation to reach its goals?	Clearly communicated in the report.
- Explanation of how the digitalisation will meet the customer's needs?	Identifying customers' needs and explaining how the needs will be met.
Category 3: Is it emphasised by leadership within the operational context?	When senior management makes digital planning and innovation a priority, the culture becomes instilled within the corporation and trickles down to employees(KPMG, 2018b).
- Is the senior management (CEO, CFO and Chairman) aware of and stressing the need for reporting on digital transformational initiatives?	Reviews that the CEO, Chairman, and CFO included in reports. This includes whether management is making special mention of digital disruption. Initiatives or any disclosure of this nature.

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- Is management committed to fostering a sense of urgency in making changes to traditional business models?	This question is further embedded in the study of Ftizgerald et al. (2013) which calls for management to lead the process of change by ensuring they are managing and coordinating across the company.
- Is management strategising collaboration/development of new initiatives within the company?	This question is further embedded by the imperative nature of companies having solid strategies and plans in place to reach a close fit for their IT strategies and their organisational needs (Matt et al., 2015).
- Mentioned as a key risk facing the company?	Pertinent risks are required to be communicated to stakeholders via their reporting frameworks (IIRC, 2013).
- Is there specific mention of governing board committees handling the oversight?	This could be either a specific IT/digital risk committee or could be dealt with by the company's risk committee or audit committee (if the audit committee is assigned the role of the risk committee).

Each report was analysed against the disclosure checklist. If evidence was found of disclosures relating to one of the items on the disclosure checklist the company was allocated a code of 1 for that item. If no evidence was found, a code of 0 was allocated. Each company was then given a score out of 15 based on the 15 sub-questions dealt with above and the analysis, as well as comparisons, were drawn from this.

Once the data was collected it was interpreted, compared, and used to create meaningful conclusions about the progress being made by South African companies in the digital adoption age. This provided an analysis of the nature of disclosures of digital transformation of these companies. A cross-sector analysis was also performed to evaluate and compare the progress within the various sectors of companies on the JSE. This creates valuable insight into the state of each sector.

Limitations of the study

The limitations of this study included the scope of the sample which included the reports of JSE top 40 companies by market capitalisation, as of 31 December 2018. Although these companies encompass 80% of all shares on the JSE (SA Shares, 2019), they do not represent all companies listed on the JSE. Furthermore, the results from the reports of the top 40 companies may not be representative of the smaller entities listed on the exchange. The study has provided an analysis of only 2018 integrated reports and the use of only one year creates a limitation.

Another limitation was the use of content analysis in performing the study which poses specific limitations, which are centred around not capturing a complete picture (Unerman, 2000). However, the method is widely recognised in literature to develop inferences about populations in its entirety (Ackers, 2009; Barac & Moloi, 2010).

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An inherent limitation in research on disclosures is that the researcher is limited by the disclosures presented, as considered material and relevant by the report preparers. This results in digital transformation efforts that may be present in a company not being disclosed, and therefore excluded from the study.

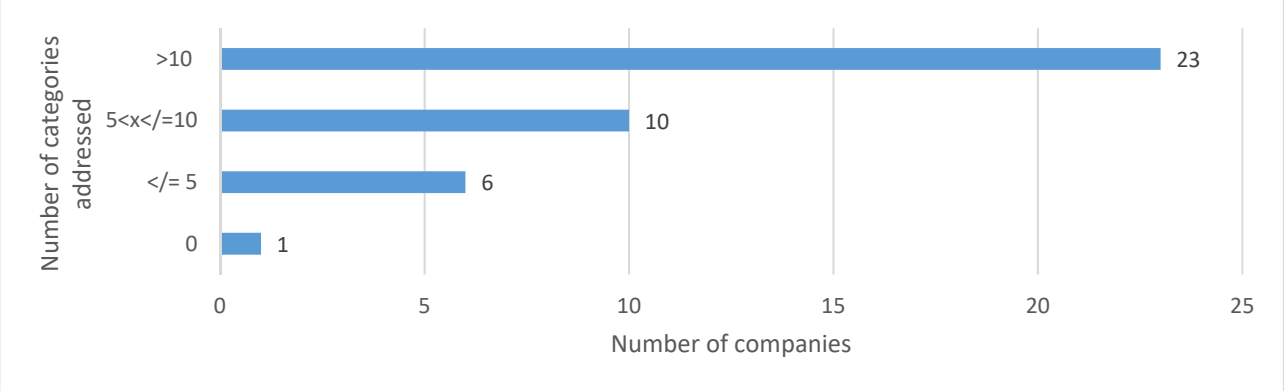
The study involved a single robust framework that drew from previous studies to assess the nature of reporting. This particular framework, although being specifically defined and applied in this study, was subjective in nature where criteria satisfaction was left to the judgment of the researchers.

DISCUSSION OF RESULTS

The data was collected by recording the results from the coding method discussed above and was used to infer whether companies are reporting on their digital transformation efforts and the nature of the reporting categorised into the three broad categories for this study. A cross-sector analysis was also done to compare the progress among companies of varying sectors. The findings of which will be discussed in this section.

An analysis of each company using the three categories discussed above was completed. Within each of the three broad categories, there were five sub-questions which were used as the criteria for scoring. As there were 15 sub-questions, the scoring was out of a total of 15. Figure 1 below shows the scoring increments of all companies involved in the study.

Figure 1: Scoring increments of the top 40 companies



The study found that 57.5% of companies (23 out of 40) had scores above 10 out of 15. This means that the nature of information on digital transformation included in integrated reports of the majority of companies appears to encompass all factors of the three categories laid out in this study, which shows the organisation's ability to provide value to stakeholders within their business operations and strategic outlook. Furthermore, 25% of companies (10 out of 40) had scores between 5 and 10, indicating that these companies may need to further report on their initiatives going forward but this is highly dependent on the sector the company falls within. It was found that 17.5% (7 out of 40) of companies have scores below 5 which assumes that priority is not given to pragmatic digital disclosures. If the companies under these categories are complacent towards the digital paradigm shift this may threaten their business continuity, however, the fact that these companies have some elements of disclosure may show organisational awareness of digital advancements and perhaps

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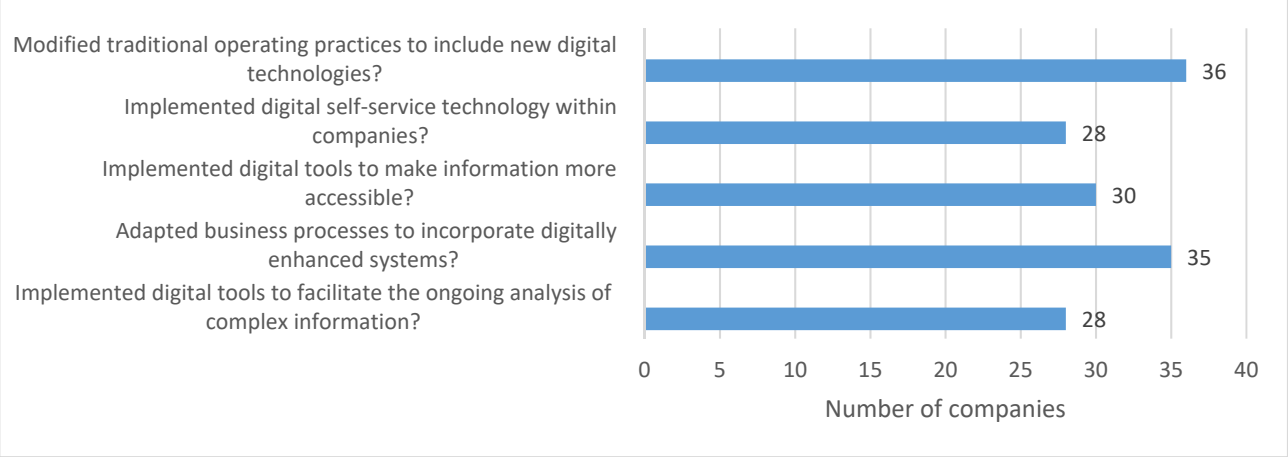
will be built upon in subsequent years. It is noted that Reinet Investments (an investment company) had no disclosures relating to their digital transformation.

Analysis of reporting of the streams of technological deployment within companies

An analysis of the various streams of technological deployment within the companies was conducted. The results are presented in Figure 2.

Figure 2: Frequency of reporting of the numerous streams of technological deployment within companies



The most frequent form of disclosure was that of modified traditional operating practices to include digital technologies, with 90% (36 out of 40) reporting this information in their reports. It was found that 87.5% (35 out of 40) of companies had reported on the incorporation of digitally enhanced systems into their business process with the use of digital point-of-sale systems, IT systems, etc. Companies have been employing technology well into their companies, with 75% (30 out of 40) of companies using technology to make information more accessible. This was found to be in the form of systems that were formerly manual dependant, for example, digital databases with pertinent customer information. It was also found that 70% (28 out of 40) have digital self-service available to their consumers, which took the form of platforms such as e-commerce, applications, and websites. There were 70% (28 out of 40) of companies that had implemented digital tools to facilitate the ongoing analysis of complex information, this was reported to be useful in collecting and interpreting customer information to analyse customer likes and dislikes as well as trends. The directors of companies are reporting well on their technological deployment within their companies and are integrating the customer experience between physical and virtual platforms well. This ties in with the literature which says customers now place increased value on their overall customer experience service, which has led to the modification of traditional business models to cater for this (Bommel et al., 2016).

Analysis of the KPIs in place to evaluate the digital initiative impact

The use of KPIs to monitor and report on digital initiatives was examined. The results are shown in Figure 3.

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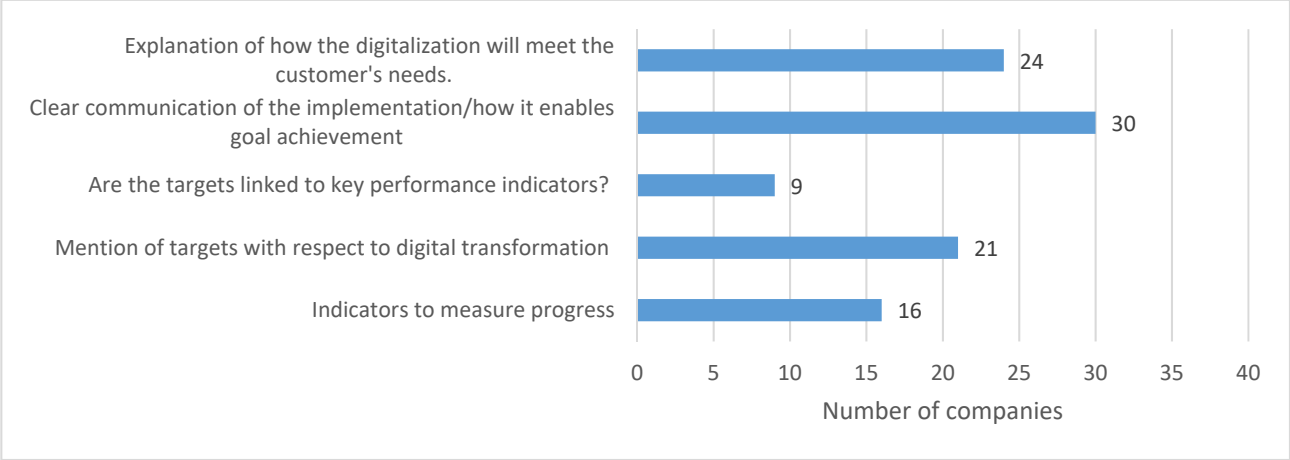
Figure 3: Frequency of KPIs to evaluate the digital impact



When examining the specific sub-questions it is found that the area of weakness concerning this specific category was that only 52.5% (21 out of 40) of companies mentioned targets concerning initiatives. It was also found that when targets were mentioned only 40% of companies had measures in place, be it qualitative or quantitative, to track progress. This causes uncertainty as to whether targets are being achieved in line with the pre-determined goals of companies, reaching deadlines promptly. Another finding was that only 22.5% (9 out of 40) of companies were linking their targets to KPIs. This shows that companies are not linking the value benefits from digital initiatives to the key value drivers of each company. The 9 companies that linked their measures of technological progress to their KPIs were scattered among many sectors (retail, real estate, industrial, communications, technology, and financial services), showing that the relevance of this element is not sector-specific and should be reported among all sectors. Potential KPIs that may be used could surround the general themes of product/service development (as an innovation metric) and customer satisfaction (as a customer relations metric) (EY, 2014; IIRC, 2011).

Companies tended to communicate clearly on the implementation of their initiatives as well as how the digitalisation would cause changes to the overall business strategy or how it will enable them to reach their goals. From the study, it was found that 75% (30 out of 40) companies went further than just a brief mention of their initiatives but explained further the value this brings to the organisation. However, this was not found to be the same for companies when reporting on how the company will use digital means to add value for the customer, where only 60% (24 out of 40) companies were reporting. This factor was evaluated based on direct explanations of how the initiatives will benefit the consumer of the goods or services. In many cases, the integrated and annual reports are said to be one of the primary touchpoints of a company with their stakeholders, where the company communicates its value creation for stakeholders (IIRC, 2013). This suggests that the reporting of digital transformation disclosures should be more widely adopted, as most companies in this study are explaining their value creation through digital transformation to stakeholders.

Analysis of the emphasis by leadership within the operational context

The tone from the top relating digital initiatives was examined in terms of the disclosure checklist. Figure 4 presents the results.

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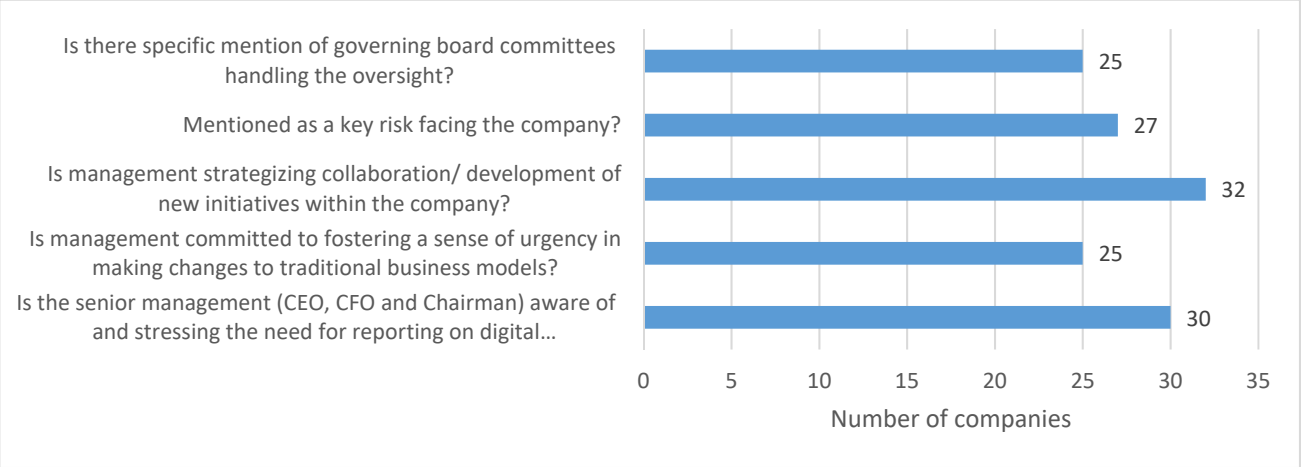
Figure 4: Frequency of reporting of the emphasis by leadership within the operational context



The scoring within this category was high, with leadership within companies emphasising the need to stay relevant within the digital age through transformation. This was determined by the mention of this in their reviews to stakeholders. This is in line with the IIRC (2011) which supports the inclusion of analytical commentary on the companies' abilities to meet strategic objectives.

Only 25 companies showed an overall sense of urgency, which is an interesting finding as although the company may have initiatives in place, there was no evidence of prioritisation through its reporting. There were 80% of companies (32 out of 40) reporting on their strategic collaborations or developments of new initiatives within the company. This took the form of technological/digital projects, the investigation into artificial intelligence, robotics and machine learning in most cases. In some cases, companies have reached the stage of progression where they have robots performing tedious, time-consuming tasks for humans. Two advancements that represent peak digital integration are Bidvest's audit robot *'Alice'* which is Bidvest's 'artificially intelligent IT internal audit robot' (Bidvest, 2018) which performs the tasks of the Group's IT audit team. As well as Nedbank's launch of its digital-only branch where the skills of the robot *'Pepper'* is used to carry out certain tasks. Nedbank continues to develop its software robots and chatbots through artificial intelligence and robo-advisors (Nedbank, 2018).

Sector Analysis

An analysis of the findings on a sectoral level follows, which discusses the scores and performance of each sector's disclosure on the nature of digital transformation. The average score per sector is shown in Figure 6.

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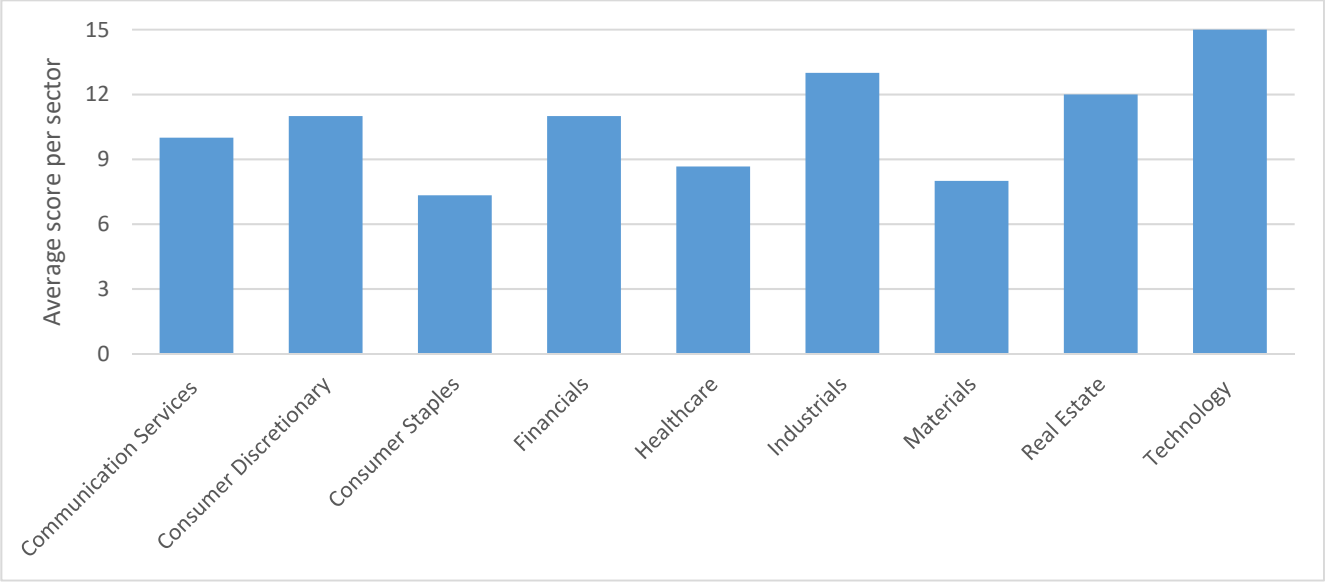
Figure 6: Average score per sector



The highest performing sector was the technology sector which comprised solely of Naspers, whose report met all the criteria relating to the nature of disclosures, followed closely by the industrials sector which made up solely of the Bidvest Group. Naspers, being a group that comprises mostly of digital-enabled companies, it is not surprising that the company is at the forefront of their technological/digital innovation. The findings with respect to Naspers scoring the full 15, support the literature from the GCI predicting that the ICT industry will have the highest levels of transformation by 2025 (GCI, 2018). However, one of the other notable sectors was the real estate sector which was a surprising finding as the nature of business does not demand instant digital evolution when compared to that of the other sectors in the study.

From the study, it is found that the consumer discretionary, financials and communication services sectors performed moderately too. It is expected that these sectors are advancing at a rapid pace to keep up with digital trends especially within the financial services sector and the consumer discretionary sector which comprises mostly clothing retailers. With the rise in e-commerce platforms and its increasing popularity among consumers – retailers would have needed to transition to online e-commerce platforms and thus have reflected this in their reporting. All of the 5 companies within this sector have employed digital self-service in their companies, having a strong online presence. KPMG (2018a) has also shown the growth in online e-commerce platforms within the retailing sector as well as how the augmented consumer experience is becoming increasingly relevant.

Along with this, the companies included in the financial services sector of this study comprise South Africa's top banks. There is a great deal of competition in the current banking market where technological innovation will drive efficiency (Simatele, 2015). It is interesting to find that some of South Africa's major banks (PWC, 2019) have high scores. Through the research, it was found that the large banks highlighted have already executed projects that have been widely accepted by consumers. Using digitally enabled means, these banks have evolved their traditional operating business models to include money applications, online banking, digital service within branches and many other initiatives that have been highly acclaimed by consumers. This finding is supported by

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literature by Simatele (2015) and Maritz (2018) which suggest that South African banks are showing unparalleled levels of digital transformation, already reaping the benefits of increased efficiencies within their business models. These digital initiatives serve to maintain a competitive advantage even with the rise of fully digital banks, such as Tyme Bank, that are entering the market. Furthermore, the big banks also tended to have noteworthy reports in terms of the subject matter, disclosing many initiatives and showing how value is created for all stakeholders. The only outliers in the financial sector were found to be Reinet Investments (having no reporting disclosures), Remgro and RMB Holdings. The latter two companies appear to have initiatives in place, however, there is a lack of information reporting how these initiatives create value. These companies also have poor disclosures relating to their KPIs. The limited disclosures on what appears to be existing initiatives have led to their poor scoring.

The sectors that scored the lowest averages were the healthcare, materials, and consumer staples sectors. Especially within the materials and consumer staples sectors where companies met the definition of digital transformation primarily through having digitally-enabled systems or some sort of digital media presence. However, there were minimal disclosures herein which ultimately led to the poor scoring of these companies. These companies mostly acquired scoring based on their digital point-of-sale systems as well as other systems related to inventory management/procurement. Outside of the category of ‘technological deployment,' there seemed to be little to no disclosure. These companies mostly included manufacturers, mining companies as well as food retailers – industries that are not expected to be threatened as intensely as the others (namely financial service providers and clothing retailers) and so, have the liberty to have limited reporting on these matters. However, at the rapid rate that technology is advancing, these sectors may need to still be reporting on newer systems and digital adoption to stay relevant in the coming years.

Discussion on risk disclosures

Included as part of the Framework’s content elements is the requirement for companies to include disclosures on the key risks and opportunities which affect the organisation’s ability to create value - as well as to include explanations on how the company is dealing with these risks (IIRC, 2013). Thus, it was determined to assess which companies included digital disruption as a threat to their business. Some sectors are more prone to digital disruption and thus, we would expect to see this risk being reported on, with mitigating policies in place. It was found that 27 companies (67.5%) mention digital disruption/rapidly changing technology as one of their key business risks. This is concerning as the risk of digital disruption is pervasive and we expect more companies to be including this as part of their risk assessment disclosure. For this factor, it is worthy to note which sectors are reporting this risk, especially given the Framework's necessity for inclusion as well as the extensive literature which supports a company’s communication of risks to stakeholders.

In addition, the risk disclosures were examined by sector. Figure 5 presents the sector analysis.

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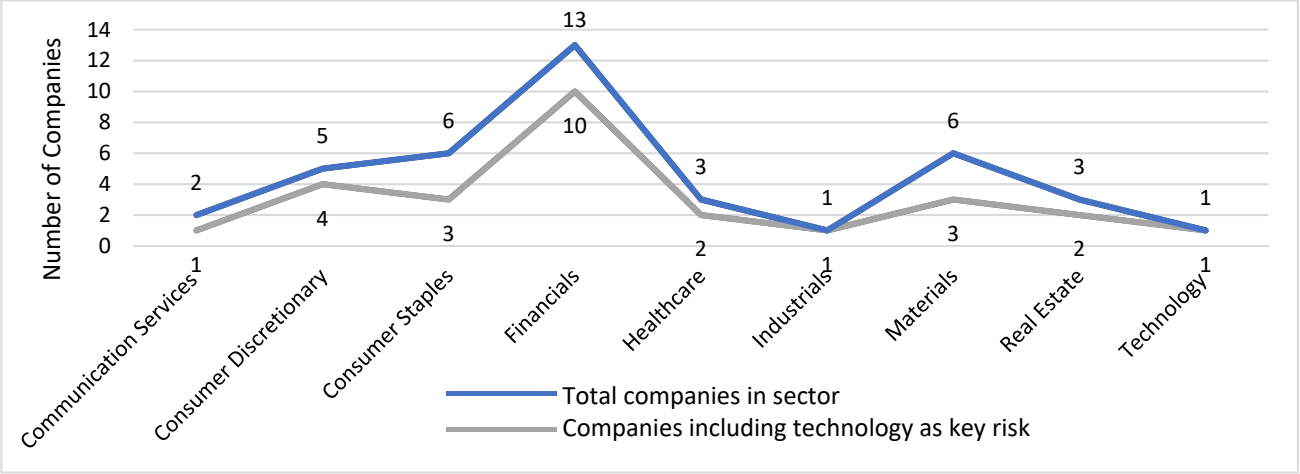
Figure 5: Frequency of companies disclosing as a key risk per total companies in the sector



It is seen that consumer discretionary, consumer services, health care, and real estate sector companies seem to be disclosing this with the most frequency (technology and industrials comprise of one company each, both reporting on risks). With companies in the financial sector comprising 13 companies of the top 40 – there is expected to be a greater range of results. However, being a sector that also bears the threat of digital disruption as well as possible obsolescence it is encouraging to see that 10 of the 13 financial sector companies are reporting on this and seem to have strong mitigating factors at work through mention in their reports.

CONCLUSION

This study was designed to shed light on the nature of digital transformation disclosures among the top 40 JSE listed companies. The results found that 39 of the 40 companies had disclosures relating to all or a mixture of digitally enabling infrastructure, key performance indicators (KPIs) or senior management prioritisation. This indicated that these South African companies are aware of the digital paradigm shift and see it as a value driver in achieving their unique value propositions. Furthermore, the mere fact that companies are choosing to report on this shows that they are on track with the objectives of reporting to their stakeholders.

Within analysing the nature of disclosures, the study looked at three broadly defined categories. The categories had 15 sub-questions in total, which led to a score of 15 if all criteria within each sub-questions were met. It was found that 57.5% of companies were reporting widely (with a score above 10) on digital transformation, showing a well-encompassed spread of disclosures. The results showed that 77.5% of companies are implementing numerous streams of technological deployment within the organisation, 50% have KPIs to evaluate the performance of their digital initiative impacts and 70% of leadership within companies are emphasising this within the operational context. A deeper analysis was done to determine where companies were falling short within the KPIs for the evaluation section, and it was found that the poor reporting related to companies having insufficient disclosures concerning targets and also not relating their targets to various KPIs.

At a sectoral level, the degree of penetration of digital transformation was found to vary. The results relating to the banking and retail sector were supported by the literature. Industries reporting well on

ISBN NUMBER: 978-0-620-92690-4

the nature of their digital transformation initiatives were the technology, industrial, real estate, consumer staples, and consumer discretionary sectors. Furthermore, sectors that are more prone to digital disruption presented higher levels of disclosures related to digital transformation as a key risk.

In its entirety, the companies making up the top 40 seem to be on par with the digital transformation shift, with most companies acknowledging the importance of digital transformation and reporting thereon. Continued growth is on the horizon, as discussed by the company in their reports, due to the increasing importance of digital transformation. It is therefore expected that an increase in activity and disclosures of digital transformation is to be expected in the future.

Future research is required to compare the digital transformation disclosures in this study to periods during and after the COVID-19 pandemic. Due to the relatively small sample size in this study, further research can also involve analysis of a larger sample size which may present deeper insight into the subject matter and allow for a better understanding of performance at the sector level, as well as comparing the disclosures of South African companies to companies operating in more technologically advances countries. As time advances, digital transformation initiatives will improve among companies due to the nature of societal and digital progression. In saying this, this study was limited to reports at 31 December 2018, and future studies can extend to include a range of years. This may provide insight on the progression of companies with their initiatives and also track which companies have transitioned at later stages within the digital era. The use of alternative frameworks is also encouraged that can provide an alternate viewpoint, introducing other factors that serve to be relevant in future years. These frameworks can offer different perspectives on the reporting of disclosures. However, digital transformation is a key driver of long-term value creation for companies in South Africa.

ISBN NUMBER: 978-0-620-92690-4

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ISBN NUMBER: 978-0-620-92690-4

2021 Southern African Accounting Association

Regional Conference Proceedings

ISBN NUMBER: 978-0-620-92690-4

WESTERN CAPE REGION

The Assessment, Application and Resulting Insights of an Emerging Framework to Evaluate Integrated Thinking Levels among JSE Listed Entities

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ABSTRACT

Integrated thinking involves a holistic, multi-capital approach to decision-making and operations to promote value creation and sustainability. The IIRC has defined integrated thinking and promoted its value extensively. However, there is a lack of information, both in practice and in academic literature, dealing with how to implement and evaluate integrated thinking. A model developed by Trialogue is used to evaluate integrated thinking levels based on underlying principles/indicators. This framework is applied to a sample of 97 JSE listed entities' integrated reports, and, using a qualitative content analysis approach, is used to score the integrated thinking levels. Results reveal that entities in South Africa are scoring well on integrated thinking principles, primarily geared through the strong governance and reporting structures in place. Remuneration and performance management has, however, been identified as a weakness.

Using a principal component analysis, results reveal that three factors contribute to a high portion of the variance in integrated thinking. These factors are [1] managing of and reporting on value creation; [2] stakeholder awareness and corporate accountability; and [3] governance. This has revealed that entities are in different stages of integrated thinking application being a developing stage, an emerging integrated thinking logic or a strong integrated thinking logic.

An integrated thinking framework can be used as a practical tool by stakeholders to gauge and benchmark the level of integrated thinking taking place in an entity. An entity can use this framework as a guiding tool on the steps needed to execute on integrated thinking principles.

KEYWORDS: IIRC; integrated reporting; integrated thinking; multi-capital; report quality, sustainability

INTRODUCTION

Integrated reporting (IR)[1] is underpinned by the concept of integrated thinking (IIRC, 2021).

Integrated thinking is defined as (IIRC, 2021:3):

> "the active consideration by an organization of the relationships between its various operating and functional units and the capitals that the organization uses or affects."

Given the importance of business sustainability in the current economic context, the use of integrated thinking is an important driver of long-term sustainability (Rossi & Luque-Vilchez, 2020) and enhanced stakeholder communication (Malafronte & Pereira, 2020). Consequently, this study is concerned with assessing and applying a framework which can be utilised to evaluate integrated thinking levels and promote integrated thinking within organisations[2].

This paper investigates integrated thinking based on information included in integrated reports. Using a normatively developed integrated thinking framework, instances of best and worst practice of integrated thinking disclosures are highlighted. A robust framework can be used by organisations as a guideline to implement integrating thinking. This is also a practical means for external stakeholders to evaluate integrated thinking using publicly available information. The research question (RQ) developed is:

> **RQ1: What are the levels of integrated thinking (according to the normative framework) among South African listed companies based on the information being included in their integrated reports?**

The extent and quality of IR disclosures have been examined in detail (Beck, Dumay & Frost, 2015; De Villiers, Pei-Chi & Maroun, 2017; Malola & Maroun, 2019; Zhou, Simnett & Green, 2017). There is, however, limited practical guidance on how to implement and subsequently evaluate the level of integrated thinking (IRC, 2018; Malafronte & Pereira, 2020; Rossi & Luque-Vilchez, 2020; Tweedie & Martinov-Bennie, 2015). The research adds to the limited body of integrated thinking research (Rossi & Luque-Vilchez, 2020; Tweedie & Martinov-Bennie, 2015), drawing on qualitative and quantitative assessments of an emerging framework applied to integrated reports in a South African context.

This paper will only deal with the application of the integrated thinking framework in the context of South African integrated reports and will not be assessed in different jurisdictions. Findings should be generalised with caution.

The study will not aim to redefine integrated thinking, but rather, to establish principles to more effectively execute and evaluate integrated thinking.

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1 The International Integrated Reporting Council (IIRC) formed a global coalition to develop a framework for Integrated Reporting based on the six capitals, value creation and sustainability (IIRC, 2021).
2 The terms "organisation", "business", "company" and "entity" are used interchangeably for stylistic purposes.

ISBN NUMBER: 978-0-620-92690-4

The remainder of this paper is organised as follows. The next section (Section 2) provides an assessment of prior literature on integrated thinking. This will form the foundation upon which a framework can be developed. Section 3 assesses a framework (rooted in prior literature) for evaluating integrated thinking. Section 4 deals with the methodology for implementing the framework in the context of the research question. Section 5 presents the results and discussion of the study. The final section (Section 6) provides the relevant conclusions.

LITERATURE REVIEW

In 2013, the IIRC developed a framework for IR which aimed to be a cornerstone in the development of a holistic manner of reporting communication that appeals to the various needs of a broad group of stakeholders (IIRC, 2021). The IR framework introduces the concept of integrated thinking.

Key features of integrated thinking include:

- Responding to stakeholders' legitimate needs and interests,
- Responding to the risks and opportunities in the external environment,
- Noting the outcomes and trade-offs of an interconnected and interdependent set of activities and capitals and
- A multi-timeframe analysis of activities, performance and outcomes.

adapted from IIRC, 2021

The IR Framework focuses mainly on the definition, the value of implementing integrated thinking and the connectivity of information concept (IIRC, 2021). There is limited information within the IR Framework explaining how an entity should both implement and potentially evaluate their integrated thinking in a practical context (Dumay & Dai, 2017; Tweedie & Martinov-Bennie, 2015). Preliminary findings suggest that high-quality integrated reporting cannot be achieved without integrated thinking (De Villiers, Hsiao & Maroun, 2020b).

The IR Framework was revised in January 2021, slightly amending the definition of integrated thinking. It clarified that integrated thinking considers, not only the creation (see IIRC, 2013 definition), but also the preservation and erosion of value (IIRC, 2021). Despite the importance of integrated thinking emphasised (IIRC, 2021), no further implementation guidance was provided[3].

An emerging body of academic research deals with the benefits of integrated thinking. Table 1 summarises the benefits of integrated thinking highlighted by the prior research.

3 There are case studies (see IIRC, 2021b) which attempt to show integrated thinking in practice, however, the outcomes do not address how integrated thinking can be evaluated by an entity, implemented across a wide range of organisations nor the specific steps to achieve integrated decision-making capabilities (IIRC, 2021b).

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Table 1: Key benefits of integrated thinking

Benefits	Literature
Enhancing information systems: Improved internal decision-making and external reporting.	Stubbs and Higgins (2014); IIRC (2013)
Holistic business overview: Augmenting management's understanding of the business based on a holistic assessment of the capitals and value creation - improving risk/opportunity identification, strategic decisions & business alignment. This includes more transparent and integrated business reporting models, which result in positive organisational change.	Barth, Cahen, Chen & Venter (2017); Velte & Stawinoga (2017); IIRC (2013)
Improving internal and external communication channels: Breaking down silos, promoting inter-firm communication and stakeholder engagement.	Rinaldi (2020); Dumay & Dai (2017)
Balanced business assessment and legitimacy: Increasing awareness and accountability of an organisation's economic, environmental and social impact over a multi-horizon timeframe.	Ghio & McGuigan (2020); Rinaldi (2020); IRC (2018); Beck et al. (2015)
Linked to higher quality integrated reporting.	IIRC (2021); Barth et al. (2017)

Integrated thinking does not require a complete overhaul of the business model and strategy (McNally, Cerbone & Maroun, 2017; Stubbs & Higgins, 2014). Nevertheless, there are barriers to implementing integrated thinking which are summarised in Table 2.

Table 2: Key challenges/barriers to integrated thinking

Challenges/barriers	Literature
Financial capital focus: Marginalisation of stakeholders in favour of a shareholder-centric management approach, hindering the management of, and reporting on, other capitals.	IRC (2018); Dumay et al. (2016); Oliver, Vesty & Brooks (2016)
Prescriptive approach to integrated thinking: Check-box application of principles for reporting which stifles innovation.	Atkins & Maroun (2015)
Communication deficiencies in the organisation: Report length is excessive, greenwashing and poor disclosures of impacts.	Atkins & Maroun (2015); Stubbs & Higgins (2014)
Limited cultural impact: The existing organisational structure and culture hinders integrated thinking.	Dumay & Dai (2017); Stubbs & Higgins (2014)
Difficulties understanding the connectivity among different capitals and their relevance for the business model.	Dumay, Guthrie & La Torre (2019); Dumay & Dai (2017)
Data collection issues and failing to recognise the fact that outputs, even if planned, can have negative outcomes.	IIRC (2021); Oliver et al. (2016)
Evaluation and assurance[4] of integrated thinking levels.	De Villiers et al. (2017); Tweedie & Martinov-Bennie (2015)

4 The IIRC does not require assurance on the integrated report nor over integrated thinking levels. This can lead to questions over the credibility of underlying information, unless specific assurance is obtained on the reports (Tweedie & Martinov-Bennie, 2015).

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Integrated thinking is gaining prominence in research; however, the practical application and development lacks the necessary framework for implementation by organisations (Malafronte & Pereira, 2020; Rossi & Luque-Vilchez, 2020). In a South African context, integrated thinking can be seen to be a weak accountability mechanism due to:

- A lack of disclosure of specific integrated thinking practices,
- Measurement principles which have not been well established and
- Assurance of integrated reports and underlying integrated thinking levels not being a mandatory requirement.

developed from Tweedie & Martinov-Bennie, 2015

Integrated thinking has abstract elements that need to be quantified by way of a measurement or evaluation framework. This will allow external stakeholders to assess a concrete process rooted in accountability for economic and sustainability issues (Tweedie & Martinov-Bennie, 2015). Integrated thinking disclosures need to be associated with the underlying corporate governance, operational and strategic processes (Arul, De Villiers & Dimes, 2020) and linked to a principle or indicator which can be demonstrated. In the strained economic, social, political and environmental climate in South Africa, operationalising integrated thinking can enhance an organisation's operations (Barth et al., 2017; De Villiers et al., 2020b; Wits, 2020).

To truly understand the implementation of integrated thinking, research needs to move away from the outcome and focus on internal practices and practical application of this ideology (Dumay et al., 2019). This stresses the need for a guideline to integrated thinking application. The next section will analyse a framework for evaluating integrated thinking based on underlying principles and associate indicators which have a theoretical underpinning in the prior literature.

ASSESSING A FRAMEWORK FOR EVALUATING INTEGRATED THINKING

To evaluate integrated thinking, a model developed by Trialogue[5] is used. Trialogue has developed one of the first integrated thinking frameworks. It is built on five principles and associate indicators to assist organisations in bolstering and applying integrated thinking. Refer to Table 3 for the proposed framework.

5 Trialogue is a corporate responsibility consultancy firm conducting research into business sustainability and practical consultancy services in the corporate and social investment field (see https://trialogue.co.za/). The authors would like to thank Nick Rockey of Trialogue for the contributions made to the integrated thinking model used for the purposes of evaluating the integrated thinking levels in this paper.

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Table 3: Trialogue's integrated thinking framework

Principle	Indicator
Principle 1: Integrated awareness and understanding The organisation demonstrates clear awareness and understanding of the connectivity and interdependence of matters material to its ability to create value over time.	1.1. Awareness and understanding of external factors impacting the organisation's operating context
	1.2. Awareness and response to the legitimate needs and interest of stakeholders
	1.3. Awareness and understanding of risks and opportunities
	1.4. Awareness and understanding of material themes
	1.5 Articulation of business rationale for sustainability and integrated thinking as a driver of long-term value creation
Principle 2: Integrated leadership commitment and capability Leadership provides the mandate for integrated thinking and makes a deliberate and coordinated effort to connect and integrate matters material to organisational sustainability.	2.1. Leadership ambition and commitment to an integrated approach to sustainability
	2.2 Diversity of leadership experience
	2.3. Strategic positioning of sustainability
	2.4. Values and ethics
	2.5. Conscious and relevant adoption of codes and standards
Principle 3: Integrated structures Organisational structures and systems are conducive to integrated decision making and reporting	3.1 Integrated governance
	3.2 Integrated accountability for sustainability
	3.3. Integrated business model
	3.4 Integrated and devolved stakeholder engagement processes
	3.5 Integrated systems, technologies and processes
Principle 4: Integrated organisational performance management Performance management of targets and KPIs is balanced and integrated to express the holistic and comprehensive performance of the organisation over the short, medium and long term.	4.1. Non-financial metrics
	4.2. Targets and contextualised performance metrics
	4.3. Response to performance
	4.4. Integrated assurance
Principle 5: Integrated External Communication Communication to external stakeholders offer an accurate, holistic, balanced and integrated view of the organisation's performance and ability to create value over the short-, medium- and long term.	5.1 Integrated marketing and communication
	5.2 Integrated external reporting

Each of the principles in Trialogue's model is discussed in more detail below.

Principle 1 (P1)

An entity can execute P1 by actively assessing the value creation process as espoused by the IIRC (2021). The internal and external factors impacting the business (Alrazi, De Villiers & Van Staden, 2015) need to be understood to develop an appropriate response to the risks and opportunities (Velte & Stawinoga, 2017). Understanding how different stakeholders fit into this response (Barth et al., 2017) illustrates an integrated awareness and an augmenting of management's understanding of the entity and consideration of the impact on multiple stakeholders (IRC, 2018).

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Principle 2 (P2)

P2 speaks to the leadership of the entity and management of the entity taking responsibility for the direction of the company (IOD, 2016). The tone at the top of the entity (IOD, 2016) needs to drive the integrated thinking ethos throughout the different levels in the business (see IRC, 2018). P2 indicators assist in assessing the organisation's board structure, the commitment to sustainability and integration, the adoption of codes and the values of the entity. The approach and disclosure of sustainability objectives can be leveraged as a strategic legitimacy tool (Beck et al., 2015).

Principle 3 (P3)

An organisation needs to have appropriate structures in place to support integrated decision-making and reporting (P3). These structures need to be supported by good corporate governance principles (see IOD, 2016), high levels of accountability (Rinaldi, 2020; Tweedie & Martinov-Bennie, 2015), continuous stakeholder engagement (Rinaldi, 2020) and implementing robust systems, technologies and processes (Stubbs & Higgins, 2014). The framework should be proactive in terms of stakeholder engagement, monitoring management systems and driving the strategy of the business (Alrazi et al., 2015).

Principle 4 (P4)

P4 focuses on performance measurement. The implementation of Key Performance Indicators (KPIs) and related disclosures can paint a better picture on achieving certain milestones (Dumay & Dai, 2017; Oliver et al., 2016), depicting levels of internalised integrated thinking. The indicators of P4 focus on non-financial metrics, contextualising performance holistically in terms of economic, social and environmental impacts and the response to this performance. This should address both positive and negative outcomes (IIRC, 2021). This provides a monitoring and improvement assessment that speaks to an ethos of integrated thinking (Malafronte & Pereira, 2020).

Principle 5 (P5)

P5 looks at the external communication channels. IR is well developed in South Africa, having been a listing requirement since 2010, where King III's adoption by the JSE[6] resulted in it becoming the first stock exchange requiring the preparation of an integrated report or an explanation of why this was not prepared (Maroun, Coldwell & Segal, 2014). Listed entities, in particular, have been preparing and improving integrated reports over a period of more than 10 years, however, there needs to be a mindful application and internalisation of the report (Malafronte & Pereira, 2020; McNally et al., 2017). P5 assesses any additional reports and other communication channels. An integrated report should be an overall summary of all aspects and the related interconnections.

With the above points in mind, the primary research question considered by the remainder of this paper is:

6 Johannesburg Stock Exchange

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RQ1: What are the levels of integrated thinking (according to the normative framework) among South African listed companies based on the information being included in their integrated reports?

METHODOLOGY

The current study is grounded in an interpretive approach to collecting and analysing data (Baker & Bettner, 1997; Maroun, 2012). A mixed methods approach is adopted to address RQ1. This will include content analysis followed by a principal component analysis to evaluate what companies disclose in their integrated reports and to gauge the level of integrated thinking.

Sample

The study is based on the Top 100 JSE-listed companies by market capitalisation[7] (as at 31/12/2018) which had also prepared integrated reports at the time of data collection. Five entities were excluded because they formed an entity in the same group of companies (for which the report was already assessed) or reports were not available. Two entities[8] that fell outside of the Top 100 (and were used in the pilot study discussed below) were included judgementally to assess the levels of integrated thinking disclosure of smaller entities. This left a final sample of 97 entities.

South African companies are selected because the country has a well-developed reporting environment (IOD, 2016; Maroun, Coldwell & Segal, 2014). In addition, integrated reporting by South African listed companies is *de facto* mandatory (IOD, 2016). As a result, self-selection bias associated with voluntary reporting is reduced (Barth et al., 2017; Zhou et al., 2017)

The period of review covers the 2017, 2018 and 2019 financial years. There were few reporting or regulatory developments that took place in this period that would specifically impact the nature of integrated thinking disclosures[9]. This ensures a control measure for the scores developed through the framework.

Data collection and analysis

The research examines the primary integrated reports issued to stakeholders. Separate sustainability reports, ESG checklists, interim results, investor presentations and companies' webpages are not included in the analysis. This is because an integrated report should encapsulate underlying ESG, financial and other metrics (Zhou et al., 2017)

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7 Using large entities controls for the possibility that a lack of resources or technical expertise or a lack of experience in applying the IR Framework may impact the report quality (IIRC, 2021; Malola & Maroun, 2019). Small and Medium Sized Enterprises (SMEs) may not have the need nor the ability to appropriately disclose integrated thinking practices, which makes the measurement framework difficult to apply. As such, the SME sector is beyond the scope of this research.

8 These include Allied Electronic Corporation Limited and EOH Holdings Limited.

9 King IV was adopted during the period under review (IOD, 2016), however, the impact of this would be to strengthen regulations and governance practices.

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Qualitative content analysis is used to collect data for addressing RQ1 (Cho, Laine, Roberts & Rodrigue, 2015; Maroun, 2018). Content analysis is used due to its suitability for dealing with material which is not consistently formatted, while highlighting trends and investigating both text and graphic disclosures (Krippendorff, 2013). Content analysis is a popular tool for coding and scoring different types of disclosures in accordance with a normative framework (Guthrie, Petty, Yongvanich & Ricceri, 2004).

Each report for each entity and financial year under review was read several times to gain a sense of its content and structure (Solomon & Maroun, 2012). The reports were re-examined to identify disclosures dealing with the principles/indictors outlined in Table 3. This resulted in different types of disclosures being aggregated according to the principles/indicators. Examples included: details on governance structures, ESG performance indicators, explanations of strategies/business models and the materiality determination process. Qualitative and quantitative disclosures were evaluated. Pictures, graphs and tables were examined to the extent that these formed part of a section in the integrated reports rather than in their own right.

The final outcome is a list of examples of integrated thinking disclosures of high and poor quality categorised by integrated thinking themes. This was used to develop a summary of best and worst practice indicators noted across the sample and included in the results section.

Next, the frequency of disclosures per principle per company was recorded. The total number of disclosures per principle was also noted. To support the qualitative analysis, scores were awarded to each disclosure (aggregated by indicator) using a five-point scale by the researcher. The generic rating scale to be applied:

- Level 1: No relevant disclosure or evidence of response relating to sub-principle
- Level 2: Boilerplate / superficial description of response to sub-principle without any substantiation of relevance and or application to value creation
- Level 3: Basic explanation of response to sub-principle, including limited or incomplete outline of relevance, application to value creation and integration to related sub-principles
- Level 4: Good explanation of response to sub-principle, including an informative but not comprehensive outline of relevance, application to value creation and integration to related sub-principles
- Level 5: Comprehensive explanation of response to sub-principle, including a comprehensive outline of relevance, application to value creation and integration to related sub-principles.

The scores per indicator are used to calculate a mean, minimum and maximum score per integrated reporting principle as per Table 3. To address possible biases and enhance exploratory power, the scores are then grouped using an exploratory principal component analysis with Varimax rotation[10]. To balance ease of interpretation with exploratory power, only components with an eigenvalue greater than 1 are retained and the rotated component matrix only reports elements with a loading greater than 0.4.

10 This is a technique used to aggregate a large number of variables. This is done by extracting the maximum variance common to the variables and reduce them to a single factor or score. The Rotation converged in 6 iterations.

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Validity and reliability of data

To ensure validity and reliability of the data, the following steps were taken:

- The proposed framework and scoring composition has been developed by an independent consulting firm (Trialogue) which has several years' experience with assisting companies with their integrated reports and supporting management systems. In addition, each of the framework's elements has been grounded in the relevant prior research and the IIRC (2021) framework to ensure accuracy and completeness.
- Scores used to determine the level of integrated thinking were assigned by the researcher and evaluated by two research assistants working independently. For each principle and the relating sub-principles/indicators, a set of questions was developed that would explicitly exhibit that principle. This dichotomous questionnaire is utilised to eliminate subjectivity. Material differences were flagged for the attention of the lead researcher who determined the final score[11].
- Disclosures are analysed using paragraphs as the unit of account to avoid overlooking context and misinterpreting content. Disclosures are analysed per indicator and then grouped by principle.
- The coding process was initially piloted with eleven listed companies[12] by the researcher. These companies were analysed by three research groups. To avoid inter-coder reliability problems, the lead researcher then coded all the data to confirm the research group results. Differences were examined and resolved via consultation. The researchers used the same standardised questionnaire to rate the entities, reducing subjectivity. Finally, Trialogue reviewed the results to confirm that the scoring process and outcomes were aligned with their intended methodology.
- The researcher acknowledges that the approach followed to gauge integrated thinking and score each report would be inherently subjective. The quality scores reported in the EY Awards (EY, 2020) are used to calibrate the integrated thinking scores (Barth et al., 2017; Malola & Maroun, 2019). The EY Awards assess integrated reports on a scale from lowest to highest quality [“Progress to be made” [1], “Average” [2], “Good” [3], “Excellent” [4], “The Top 10” [5] and “Honours” for the highest quality of reporting] (EY, 2020).
- The Kaiser-Meyer-Olkin measure is used to test for adequate sample sizes when running the principal component analysis. Bartlett’s test of sphericity, is used to evaluate the null hypothesis that the variables included in the analysis are uncorrelated. This methodology is consistent with recent integrated thinking research (Malafronte & Pereira, 2020).

RESULTS AND DISCUSSION

An analysis of integrated thinking disclosures

By way of analysing the integrated reports, best and worst practice examples have been illustrated in disclosing an entity’s practical application of integrated thinking. The examples are assessed

11 Statistical measures for inter-coder reliability were not generated as all differences were examined and resolved by the lead researcher through consultation.
12 The eleven companies were selected through consultation with Trialogue.

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against the three integrated thinking factors (see the subsequent sections for further information) to provide a disclosure summary checklist for an entity to assess. This has been summarised below.

Table 4: Disclosure summary of best and worst practice integrated thinking disclosures

Factor	Best Practice	Worst Practice
Managing of and reporting on value creation	• Multi-capital assessment with trade-offs • Strategy is linked holistically • Hyperlinks used for connectivity and reference to additional reports • Summary of ESG impacts from other, detailed reports • Link financial data to non-financial data/capitals • Company specific case studies • Likelihood, magnitude and time-frames for risks disclosed • Detailed materiality determination process • Detailed KPIs based on financial/non-financial metrics • Technology integration	• High level risk assessments • Generic, boilerplate disclosures • Limited capital disclosures and lack of connectivity of information across the report • Long disclosures • Lack of application of the IIRC Framework • Poor format of report lacking insight and analysis
Stakeholder awareness and corporate accountability	• Detail of engagement channels, key concerns/expectations • Link the stakeholders to capitals and value creations • Company specific case studies • Detailed stakeholder matrix analysis • Accountable for targets and reporting on positive and negative outcomes	• Generic, boilerplate disclosures • Greenwashing by including detailed ESG metrics without explicitly assessing the impact of these metrics, setting targets and explaining outcomes and impact on stakeholders • Limited stakeholder engagement with focus on providers of financial capital
Governance	• Transparent disclosures • Detailed disclosure on board activities, outcomes and direction • ESG impact	• Generic, boilerplate disclosures • Limited application of other codes

The next section analyses the results and trends from applying the integrated thinking framework to the sample of integrated reports. This includes assessing the scores across the principles of the framework and the trends noted in a South African context.

Integrated thinking scores

Figure 1 shows the average scores of the principles per Table 3 across the study group over the three-year period. Notable observations are the high score across all the principles with a high level of consistency across the periods. There has been neither a material deterioration nor an improvement in the scores.

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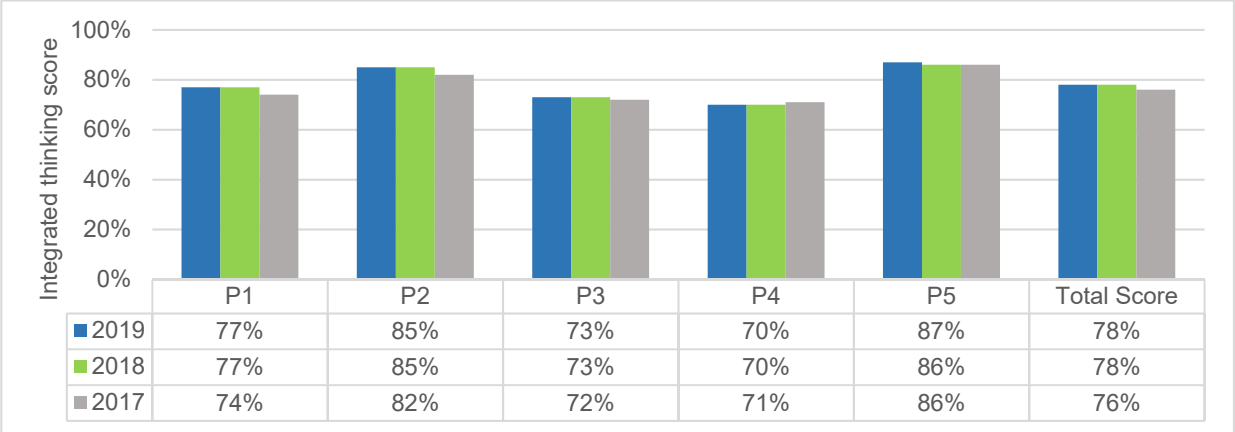
Although there would be an expectation of an improvement over a three-year period, there are other factors to consider. The economic environment in South Africa is deteriorating because of fiscal pressure, political uncertainty, weakened exchange rates, load shedding and a credit downgrade (De Villiers, Cerbone & Van Zijl, 2020a). Companies may focus on financial capital and short-term solutions rather than integrated report disclosure.

Figure 1: Average integrated thinking scores per principle across the 97 entities scored



	P1	P2	P3	P4	P5	Total Score
2019	77%	85%	73%	70%	87%	78%
2018	77%	85%	73%	70%	86%	78%
2017	74%	82%	72%	71%	86%	76%

Table 5 below shows the average, minimum and maximum scores per principles for the sample. This shows that P4 (70%) is the weakest principle and P5 (86%) is the highest scoring principle. The maximum scores indicate that there are entities who achieve a perfect application of the indicators in the respective principles. In contrast, some entities score very low, particularly across P1-P4. This illustrates that there is currently a large gap in the execution of integrated thinking among South Africa's largest organisations. Some organisations require an improvement in the execution of integrated thinking.

Table 5: Summary of key metrics per principle of the entire population across three periods

Principle	Average Score	Maximum Score	Minimum Score
P1	76%	100%	40%
P2	84%	100%	12%
P3	73%	95%	25%
P4	70%	90%	30%
P5	86%	100%	70%

Despite a lack of material improvement in integrated thinking scores and report quality, it must be noted that the scores are still high in terms of integrated thinking (all principles scored at least 70% on average in the study group). Assessing the principles with 'below average' scores provides further insights. Refer to Table 6.

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Table 6: Percentage of entities in the study group scoring below 70% per principle over a three-year period [13]

Principle	Percentage of entities in 2019 scoring below 70%	Percentage of entities in 2018 scoring below 70%	Percentage of entities in 2017 scoring below 70%
P1	24%	19%	33%
P2	5%	9%	11%
P3	22%	29%	33%
P4	36%	36%	33%
P5	1%	0%	1%

P4 (Average 2019 = 70%; Figure 1) is identified as the weakest scoring principle across the study group over the three-year period. This is supported by Table 6 above with more than one third of the study group scoring below 70% on average on this principle in 2019. This is a significantly larger portion of entities having a lower score as opposed to the other principles. P4 speaks to remuneration policies and KPI indicators being aligned across the capitals, blending financial and non-financial indicators. KPIs should interlink with multiple capitals and create sustainable outcomes (Dumay & Dai, 2017; Oliver et al., 2016). The current emphasis is on financial metrics. This is important in line with the current COVID-19 pandemic which will necessitate companies to reassess their business models, amend their remuneration policies and realign KPI's (De Villiers et al., 2020a) by implementing integrated thinking principles (Wits, 2020).

P3 is the second weakest principle. With a 73% score in 2019 and 2018 and 72% in 2017 (Figure 1), the principle indicators do score well, but require evident improvements with 22% of entities scoring below 70% in 2019 per Table 6. Disclosures dealing with ESG metrics are not consistently integrated with the explanation of how value is being generated over the short-, medium, and long-term. The disclosures are detailed but they are usually qualitative and lack quantified measures of performance or a review of actual outcomes versus planned objectives (Malola & Maroun, 2019). Exactly how governing bodies and executives ensure a multi-capital approach to business management is not consistently explained in the integrated reports.

For P1, ESG issues may be identified as strategic considerations or business risks but how the respective business models and internal controls are operated or changed could not be determined. Similarly, the sampled companies did not consistently explain how material issues are identified. Materiality is being framed primarily in monetary terms. This has impacted the P1 score across entities.

P2 has scored well with an 85% average in 2019 (Figure 1) and only 5% of the entities in the study group scoring below 70% in 2019 (Table 6). This speaks to the leadership structures in entities with board diversity, leadership commitment and adoption of governance and ethics standards being cornerstones to this principle (IOD, 2016).

13 The percentage per column will not cast to 100% as this table looks at entities scoring below 70% across principles and not equal to and above 70%. Entities may score below 70% in some, but not all, principles.

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P5 is the top scoring principle among entities with an 87% average in 2019 (Figure 1) and only 1% of entities scoring less than 70% (Table 6). This principle speaks to integrated external communications. Although not a statutory requirement, most listed companies have been preparing integrated reports from 2009/2010 (Atkins & Maroun, 2015) and integrated reporting by South African listed companies is *de facto* mandatory (IOD, 2016).

What is encouraging to note is that despite the fact that the integrated thinking scores have not had a significant upward movement over the three-year period (Figure 1), Table 6 illustrates a notable improvement in the stratification of entities scoring below 70% from 2017 to 2019 across four of the five principles with only P4 exhibiting a weakness.

The next section presents the principal component analysis.

The development of integrated thinking factors

The integrated thinking indicators were grouped using an exploratory principal component analysis[14]. The principal component analysis reveals three dominant factors accounting for the variance in integrated thinking scores. The factor application and scores by the sample is assessed to determine common trends that are exhibited in a South African context.

The factors include:

- managing of and reporting on value creation [Factor 1],
- stakeholder awareness and corporate accountability [Factor 2] and
- governance [Factor 3]

The principal component analysis and subsequent indicators loading on each factor are presented in Table 7. The factors were labelled by the researcher based on the integrated thinking indicators loading on each factor and the prior research (De Villiers et al., 2020b; De Villiers & Maroun, 2018; Maroun, 2019; Van Zijl, Wostmann & Maroun, 2017). For validity and reliability, the labelling was discussed with two independent researchers and was also tabled at a meeting with Trialogue's integrated reporting specialists. The aim was not to reach a consensus on the definition of integrated thinking, but to ensure that the chosen labels resonate with broader audiences and control for researcher bias.

These factors consist of the key components of integrated thinking per the framework and also form the pillars of good corporate governance and report quality (IOD, 2016).

14 The Kaiser-Meyer-Olkin measure of sampling adequacy suggests that the sample size is adequate (KMO = 0.936) and, based on the result of Bartlett's test of sphericity, the null hypothesis that the variables included in the analysis are uncorrelated is rejected ($X2[1\ 90] = 2369.929$, $p < 0.01$).

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Table 7: Principles loading on each of the factors

Managing of and reporting on value creation	Stakeholder awareness and corporate accountability	Plot size: Governance
1.1. Awareness and understanding of external factors impacting the organisation's operating context	1.2. Awareness and response to the legitimate needs and interest of stakeholders	3.1 Integrated governance
1.2. Awareness and response to the legitimate needs and interest of stakeholders	1.5 Articulation of business rationale for sustainability and integrated thinking as a driver of long-term value creation	3.2 Integrated accountability for sustainability
1.3. Awareness and understanding of risks and opportunities	2.2 Diversity of leadership experience	4.2. Targets and contextualised performance metrics
1.4. Awareness and understanding of material themes	2.3. Strategic positioning of sustainability	4.3. Response to performance
1.5 Articulation of business rationale for sustainability and integrated thinking as a driver of long term value creation	2.4. Values and ethics	4.4. Integrated assurance
2.1. Leadership ambition and commitment to an integrated approach to sustainability	3.4 Integrated and devolved stakeholder engagement processes	
2.2 Diversity of leadership experience	4.2. Targets and contextualised performance metrics	
2.3. Strategic positioning of sustainability	4.3. Response to performance	
2.5. Conscious and relevant adoption of codes and standards	5.1 Integrated marketing and communication	
3.3. Integrated business model		
3.4 Integrated and devolved stakeholder engagement processes		
4.1. Non-financial metrics		

Factor 1 comprises of an integrated awareness and understanding which includes an understanding of the external environment, stakeholder needs and risks/opportunities. This understanding needs to be framed in an integrated business model and stakeholder engagement process. This factor also comprises the key themes of integrated leadership commitment and capability with a focus on non-financial metrics. These principles speak to how an entity manages and reports on value creation.

Factor 2 includes certain elements of Factor 1 with more focus on stakeholder needs, stakeholder engagement and integrated marketing and communication. There is also the principles of integrated leadership commitment and capability with an inclusion of performance metrics and responses to the performance. These principles can be summarised into stakeholder awareness and corporate accountability.

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Finally, factor 3 deals primarily with integrated governance and accountability for sustainability. This is framed against responses to performance and integrated assurance of underlying information. This factor speaks to governance principles within an entity.

Integrated thinking scores per entity were generated by applying the integrated thinking framework to the sample. The scores per principle were grouped to the factors. Factor 1 accounted for the majority of the variance between the entity scores, followed by Factor 2. Factor 3 performance was relatively consistent across the sample. This is likely due to King-IV providing extensive guidance on ethical and effective leadership notwithstanding its principle-based approach (IOD, 2016). By keeping Factor 3 constant, this allows the relationship between Factor 1 and Factor 2 to be examined.

The factors are plotted in a matrix per Figure 2 below. The horizontal heading ("x-axis") deals with managing and reporting on value creation while the vertical heading ("y-axis") represents stakeholder awareness and corporate accountability. The companies under review can be classified into three groups with different approaches to the application of integrated thinking. The top right quadrant includes companies with relatively high scores on all three dimensions. These companies deal with different capitals to the greatest extent of the organisations under review as part of their strategy, risk assessment and business models. Stakeholder identification and engagement processes are sophisticated and used to inform the information included in reports, supported by a well-developed materiality determination process.

The second group of companies have moderately high scores for managing and reporting on value creation (x-axis). They have relatively low scores for stakeholder awareness and corporate accountability (y-axis). Their integrated thinking process is not as sophisticated as the first group of companies with the relevant control systems and stakeholder engagement processes still being developed. An integrated approach to business management is starting to emerge. An awareness of multi-faceted value creation is evident, supported by underlying systems, processes and governance structures to varying extents.

The third group have the lowest scores on the x- and y-axis. This does not mean that integrated thinking is absent, but that integrated thinking is in an early/developmental stage. The companies deal with different economic, environmental and social issues in their integrated reports but there are fewer indicators of these being managed as part of a multi-capital strategy. Performance and value creation is gauged mainly in financial terms, with governance systems focused on economic dimensions.

The principles of the integrated thinking framework can provide the roadmap to better apply and then execute the logic and ultimately report on this. Figure 2 presents a matrix to assess the four groups of integrated thinking application based on their scores on the first two factors:

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Figure 2: Application of integrated thinking

		Managing and reporting on value creation	
		Low	High
Stakeholder awareness and corporate accountability	High	Integrated thinking logic emerging (27% of companies in 2019)[15]	Strong integrated thinking logic in place (43% of companies in 2019)
	Low	Integrated thinking in an early/developmental stage (10% of companies in 2019)	Integrated thinking logic emerging (20% of companies in 2019)

Calibration of results

The integrated thinking scores were contrasted with the quality measures reported in the EY Excellence in Integrated Reporting Awards for 2020 (EY, 2020).

Figure 3: Average integrated thinking scores amalgamated over the three-year study period compared to the corresponding EY report quality (IRQ) levels

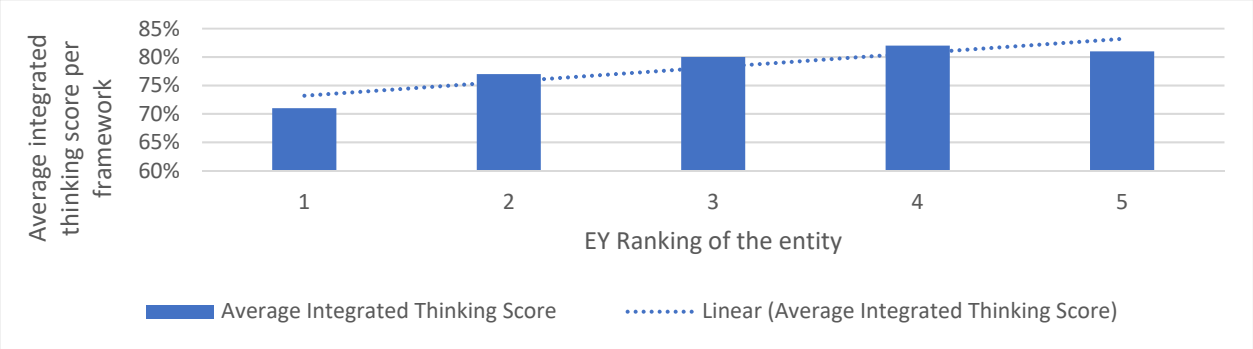

Figure 3 illustrates an improvement from an EY ranking of "needs improvement" [1] through to "good" and "excellent" reports [3 and 4] on average across all 97 companies in the amalgamated three periods under review. The three periods have been amalgamated to assess an overall comparison

15 The percentage of companies in each category has been recorded for the 2019 dataset to illustrate the distribution of the integrated thinking groups in the most recent set of integrated reports analysed (97 entities). The figure indicates that 43% of entities in 2019 exhibit a strong integrated thinking logic across all factors. Next, 47% of entities exhibit a strong logic for at least one factor, highlighting an emerging integrated thinking logic. Only 10% of entities are in an early/developing stage of integrated thinking application. This reiterates that South African listed entities in the sample are scoring well on integrated thinking principles.

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over the study period. It is, however, noted that the integrated thinking score does not differ materially between report quality that is good, excellent or a Top 10 entity [3-5]. There may be a plateau in how much integrated thinking execution can come across through disclosures alone. The control measure of IRQ scores does support the model being used in this paper.

CONCLUSION

This paper assesses a model developed by Trialogue and uses it to evaluate integrated thinking levels among JSE listed entities. The paper finds that the model is rooted in prior literature and concurs with the findings of other researchers in the field of integrated thinking. The five principles of the model are [1] integrated awareness and understanding; [2] integrated leadership commitment and capability; [3] integrated structures; [4] integrated organisational performance management and [5] integrated external communication. A disclosure checklist is developed which can assist in improving integrated thinking execution.

The integrated thinking framework provides an emerging and initial base on which to evaluate a company's integrated thinking performance. This paper found that the application and disclosure of integrated thinking principles was strong among the listed entities which owes to the well-developed reporting environment in South Africa. There is, however, progress to be made when focusing on performance measurement and remuneration geared through a holistic incorporation of both financial and non-financial capitals and disclosing this in an understandable manner.

Three factors account for a significant portion of the variance in integrated thinking levels. The factors include managing of and reporting on value creation [Factor 1]; stakeholder awareness and corporate accountability [Factor 2] and governance [Factor 3].

The execution of integrated thinking principles primarily enhances the management of and reporting on value creation as well as the stakeholder awareness and accountability. By means of adopting a multi-capital approach with a view to long-term value creation (Factor 1), while considering multiple stakeholders' needs and remaining accountable to stakeholders (Factor 2), an organisation can improve its integrated thinking execution. This will be evidenced in terms of enhancing information systems, understanding the business holistically, improving communication and a balanced business assessment.

In the current space of the COVID-19 pandemic, the implementation of integrated thinking and the resulting benefits will be important for companies to negotiate the challenging environment. The interconnection of capitals and long-term value creation, whilst engaging stakeholders and adapting to risks and capitalising on opportunities, will ensure the long term sustainability of the company. The COVID-19 pandemic iterates the importance of an integrated approach to developing strategies, managing risks and reporting to stakeholders. A multifaceted approach to doing business is essential for generating value and ensuring business continuity (IIRC, 2021).

In this context, Trialogue's model provides an easy-to-apply tool which can be used by organisations and their stakeholders to define and evaluate integrated thinking. It does not provide a scientific 'measure' of the level of integrated thinking but can be used to compare organisations, identify limitations and inform improvements to business processes.

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This paper deals with the application of the integrated thinking framework in the context of South African integrated reports and did not assess the application in different jurisdictions nor through different mediums. An integrated report may not illustrate the full extent to which integrated thinking takes place at an organisation (IRC, 2018). There can be a disconnect between what is disclosed and how an underlying integrated thinking philosophy is applied (Oliver et al., 2016). As a result, weaknesses in the application of integrated thinking do not mean that integrated thinking is absent. The organisations under review may follow a comprehensive approach for developing strategies, mitigating risks and maximising value for stakeholders but are not including the details in their integrated reports. It will take time to develop appropriate integrated thinking frameworks and report these effectively to stakeholders. In addition, the possibility that integrated reports are used to manage impressions cannot be precluded (Atkins & Maroun, 2015). These are inherent limitations of this study which will need to be addressed by future studies.

Future research agendas may include:

- Assess the application of the framework to a larger sample size, across multiple jurisdictions, industries and firm sizes.
- Expand the study by interviewing organisations to understand the practical application of integrated thinking and stakeholder's understanding of integrated thinking.
- Utilise statistical methods to determine interrelationships and drivers of integrated thinking.
- Establishing internal and external assurance practices over integrated thinking disclosures.

The benefits of integrated thinking lend itself to a need for companies to utilise this within the operations, reporting and communication. Future research will help practically clarify this concept and allow organisations and stakeholders to evaluate integrated thinking levels. This will improve the levels of integrated thinking in the South African business landscape with the hope of improving stakeholder communication, the management of capitals and value creation as well as the governance structures.

ISBN NUMBER: 978-0-620-92690-4

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