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Essays on the Performance of South African Real Estate Investment Trusts (REITs)

Oluwaseun Damilola Ajayi

BSc. (Hons) Estate Management, OAU; MSc. Estate Management, OAU

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FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

THE SCHOOL OF CONSTRUCTION ECONOMICS AND MANAGEMENT

UNIVERSITY OF THE WITWATERSRAND

SEPTEMBER 2022

DECLARATION OF ORIGINALITY

I declare that this document is entirely my work and that no part of it has been previously submitted in support of an application for another degree or qualification at this or any other institution of learning.

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Signature: ……..

Date:……26th September 2022……...

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Everything has its own time, and there is a specific time for every activity under heaven: This Thesis began at a point in time and has now ended and it is right and good to acknowledge all who contributed in one or the other to its success. First, I would like to thank my supervisor, Professor Omokolade Akinsomi, a great teacher and researcher. His invaluable comments and critiques have been inspiring and led to the success of this research. All successes and achievements during this period would not have been possible without his unrivalled guidance.

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DEDICATION

To my lovely wife, Dr. Oluseyi Mojisola Ajayi, whose support and encouragement has brought me this far; to my daughters Oluwalonimi and Oluwabori; to my son Farayioluwa, whose birth coincided with my final submission; to my dad (Professor Cyril Ayodele Ajayi) and mum (Mrs. Olufunke Abiodun Ajayi Esq) who have supported me in my studies for these many years; to my beloved sister (Similoluwa) and, brothers (Oluwatosin and Oloruntobi).

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LIST OF ABBREVIATIONS

BEE – Black Economic Empowerment

ROA – Return on Assets

ROE – Return on Equity

FFO – Funds from Operations

REITs – Real Estate Investment Trusts

JSE – Johannesburg Stock Exchange

FTSE – Financial Times Stock Exchange

EPRA – European Public Real Estate Association

NAREIT – National Association of Real Estate Investment Trusts

MBVR – Market to Book Value Ratio

DACC – Discretionary Accruals

TACC – Total Accruals

SUMMARY

A lot of attention has been paid recently to the performance of REITs (real estate investment trusts). REITs' performance in emerging economies (especially South Africa) has been the subject of several studies, although the results have been mixed. The study conducts three separate empirical studies that cover the following aspects of REITs performance: (a) the degree of secondary equity offerings (SEOs) underpricing of Black Economic Empowerment (BEE) REITs versus non-BEE REITs; (b) earnings management among internally and externally managed REITs; and (c) the female inclusion and level of education on boards of REITs and financial performance. This thesis consists of three independent essays.

First essay investigates the degree of Secondary equity offerings (SEOs) underpricing of Black Economic Empowerment (BEE) Real estate investment trusts (REITs) versus non-BEE REITs. In the paper (essay), 152 SEOs issued by 21 REIT firms (based on availability of data) from January 1, 2010 to December 31, 2020 were retrieved from the Stock Exchange News Service (SENs) of the Johannesburg Stock Exchange (JSE). Using OLS regression in analysing our data, evidence indicates that higher BEE compliance is positively related to SEO underpricing; in other words, SEOs of BEE compliant REITs are more underpriced compared to non-compliant BEE REITs. Evidence also suggests that the BEE policy needs to be recalibrated owing to its politicization as this will enhance compliance from REITs; yet, the study confirms that government ultimately benefits from SEOs of compliant firms which aids the implementation of both economic and political objectives. Compliant REITs continue to leave more money on the table; hence, the high rate of underpricing is not in their best interests. Government must therefore assist compliant firms with incentives. With these, compliant firms will need not have concerns about the extent of underpricing with Government’s intervention. This is a pioneer attempt at providing insights for subsequent studies of this nature.

Second essay provides an empirical examination of earnings management among internally and externally managed REITs. The empirical accounting literature claims that internal management of a firm does not constrain earnings management, while others argue in favour of internal management for firms. Using a sample of listed South African REITs for the 2013 - 2021 time

period, the study examines the relationship between management structures and earnings management. The study finds no aggressive practice in internally managed REITs during the study period. The focus on real activity-based earnings management suggests new avenues for research on management structures of firms. The results offer some insights for policy makers interested in promoting and strengthening legislation to ensure strong corporate governance in their respective nations.

Third essay provides an empirical examination on female inclusion and level of education on boards of REITs and financial performance. This essay investigated the relationship among female inclusion, level of education on financial performance in a South African REIT board context. The study applies an ordinary least squares (OLS) approach to a unique panel dataset of 35 South African REITs over the period 2013–2021. The study also finds evidence of an insignificant relationship between gender diversity and REITs financial performance; meanwhile, the study found a significant relationship between female directors' level of education and REITs performance; by implication, the results show that a REIT's likelihood of having a woman on the board of directors does not necessarily increase financial performance (measured by ROA) while also revealing that having females with a higher education degree (Doctoral and Masters degree) improves performance of REITs. It also provides evidence for REITs managers as the study recommends current and future REITs to employ more women with degrees in higher education.

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CHAPTER ONE

INTRODUCTION

1.1 REITs Evolution and Performance Measurement

As a means of distributing corporate stockholders' funds to the property and real estate sector of any economy, REITs are investment vehicles (Corgel, et al., 1995). For institutional investors, this does not exclude other alternative investment vehicles; Worzala (1994) noted that institutional investors were interested in 100% wholly owned equity investment, domestic-based, open-end real estate fund; foreign-based, open-end commingled real estate fund, foreign-based, closed-end real estate fund, domestic-based, and closed-end real estate investment fund. Worzala et al (2000) years later documented evidence on alternative investment vehicles being considered by institutional investors; these include Marketable Securities, Long Term Treasury Bonds, Blue Chip Stocks, Small Cap Stocks, and Diversified Mutual Fund among others. An investment trust, according to Wong (2004), is a company that pools money from investors, acquires and manages income-producing real estate, distributes the profits created by its own properties to shareholders, and returns the profits to investors. REITs are a new investment vehicle that is free from tax bills on the income it provides or distributes to shareholders (90%). Tax-exempt REITs are expected to invest 75% of their funds in real estate holdings to take advantage of the tax break (Onyema, 2017). Real estate investment trusts (REITs) have grown tremendously over the past decade, with a market value exceeding $1.7 trillion in 2016 vs $734 billion in 2010 (Ernest and Young, 2016). Since 2016 till date (2022), global REITs market capitalization totals $1.740 trillion (Bonato, et al., 2022). There has been an over 150 percent increase in the US REITs market and a more than doubling in the share value of non-US REITs since 2012. Currently, Australia and Japan are the two fastest-growing REIT markets in the world, with France and the United Kingdom in second and third place, respectively. At a value of roughly $29 billion, Onyema (2017) estimates that the real estate investment trust business in Africa is concentrated mostly within 4 countries (Kenya, South Africa, Ghana, and Nigeria).

More than 50 REITs have been listed in Africa as of this writing, with South Africa accounting for 44 of them and Nigeria having three (3) listed REITs. REITs are experiencing a considerable increase in interest and engagement from a larger number of investors. Given the continent-wide shortage of housing, real estate exchanges are ideally positioned for a long-term growth sector (Wong, 2004). In REITs study, previous studies such as Yusof & Bin Mohd Nawawi (2012), and Alias & SoiTho (2011) employed standard performance assessments centered on Portfolio theory. It has been widely accepted in the United States that REITs had comparable risk - adjusted performance to ordinary stocks prior to the early 1990s. According to Smith & Schuman (1976), REIT returns were equivalent to that of alternative investments of common stocks for the period 1963-1974. From January 1976 to June 1993, Mueller et al. (1994) calculated the mean monthly return and standard deviation of equity REITs (stocks), as well as small-value stocks, in the United States. The return and risk structure of REITs looked to be comparable to that of small-value stocks and shares. There was an average monthly return of 1.46 percent for REITs, 1.31 percent for shares and 0.0444 for small-value shares, respectively, for the three asset classes. Furthermore, Han & Liang (1995) similarly found that REIT returns and risk behaved much more like those of stock than those of direct property. Research investigations on the relationship between REITs and stocks have yielded mixed outcomes throughout time. In the early 1990s, there were a number of institutional developments in the REIT industry. Since 1997, the structure of REIT portfolios has resembled those of the secondary market, according to Mueller & Mueller (2003). The Revenue Reconciliation Act of 1993 as well as the REIT Modernization Act of 1999 both introduced tax modifications that increased the appeal of REITs to institutions (Cannon & Vogt 1995).

1.1.1. South African Listed REITs, PUTs, PLS and REOCs: Evolution and Performance Story

The REIT structure was introduced in South Africa, one of the first nations to implement it. In May 2013, the Johannesburg Stock Exchange (JSE) introduced SA REITs, which are subject to the JSE's listing requirements, which stipulate that a REIT have to own real estate of at least R300 million; retain a debt to gross asset value ratio below 60%; have at least 75% of its revenues stemming from real estate rental or indirect real estate ownership; disburse at least 75% of taxable earnings; and also have a risk monitoring mechanism (SA REIT Association, 2016).

Before the current regime, there have been two types of listed-property investment vehicles in South Africa: PLS and PUTs, which were overseen by distinct regulatory bodies and had different taxation regulations. REITs have been introduced to fill this gap. For overseas investors, a lack of international recognition for PUTs and PLSs meant that passive foreign property investment was less appealing than if it had been done through a listed-property company (KPMG, 2013). The tax status of these vehicles further contributed to foreign investment uncertainty (KPMG, 2013). The South African listed-property market has to rectify the tax discrepancies between PUTs and PLSs in order to attract more overseas investors. As for Wagner et al (2022), apart from REITs, there are real estate operating companies (REOs) in South Africa. A real estate operating company (REOC) owns and manages real estate properties in multiple sectors. They let shareholders to purchase and sell firm stock on a public exchange market. They function similarly to REITs, but have wider freedom in the types of properties in which they can invest. REOCs are really not subject to the same operational conditions that REITs must achieve in order to maintain their registration. REOCs, for example, are not required to distribute net profits to shareholders. They can also reinvest net profits from business operations in new acquisitions or remodeling old buildings for resale.

Another benefit REOCs have over REITs is the ability to undertake projects and capital upgrades on their own site. They can buy existing homes, remodel the features, or restore the fixtures and fittings, and then resell them for a greater price than they spent for them. They can also fund new developments and sell the units as residences, offices, or warehouses. The REOC keeps management of common spaces such as parking lots, power, water, conference rooms, corridor cleaning, and so on, and levies a monthly fee to firms or residents. REOCs, on the other hand, must pay ordinary corporation taxes that REITs are exempt from. The primary advantage of a REIT structure over a Real Estate Operating Company (REOC) is that it is exempt from corporation income taxes. The specifics of the legislation that regulate REIT designation vary by country, but all need real estate to account for the bulk of assets and/or revenue. REITs are also mandated to pay out the majority of their profits to shareholders in the form of dividends. South Africa, because

of its significant number of REIT conversions in 2013 has 11 REOCs converted to REITs since 2013.

1.2. Problem Statement

South Africa's international liquidity and current account deficit can only be alleviated if foreign trade and investment inflows are increased. This further emphasizes the necessity for foreign capital to expand the economy. For South Africa, the bulk of its foreign investment inflows come through foreign direct investment (FDI) and portfolio flows, with the latter accounting for around 50 percent of the total economic inflows (De Beer, 2015). From 36 percent to 16 percent, foreign direct investment (FDI) has decreased its contribution to the economy since the crisis, highlighting how important portfolio inflows have become (De Beer, 2015). The listed property business in South Africa is one of the major JSE industries in terms of market share, with four REITs included in the Top 40 index of the Johannesburg Stock Exchange (Mokopanele, 2017). With an index weighting of 9.55 percent, South African REITs represent the second highest market capitalization in the FTSE EPRA/NAREIT Emerging Index (FTSE Russell, 2017). SA REITs play a vital role in attracting international investment in this manner. A primary goal of establishing REITs is to make the South African REIT market more appealing to international investors, therefore bringing fresh money into the listed-property industry and enhancing liquidity therein. South African REITs had a 15-fold rise in net foreign investment in the second year following their inception, according to JSE data. However, even though net investment value decreased by more than seven times in the third year, it is clear that foreign investment levels have been raised since May 2013.

South African REITs have already seen a surge in international REIT investments, which supports one of the key reasons for adopting a REIT structure, according to first evidence (Ntuli & Akinsomi, 2017). Investors from outside South Africa aren't as clear on their reasons for investing in SA REITs as well as the impact their investments have on the market's liquidity. It is critical for SA REITs, REIT investors, and regulators to understand the motives of international investors to participate in SA REITs. REITs should anticipate to see a rise in liquidity if international investors are becoming more involved in the listed-property industry. This lowers their financing costs and makes them more appealing to local investors. As a result, greater development and investment activity in commercial property markets and wealth creation in South Africa should be expected

as a result of increased funding for SA REITs. Understanding why foreign investors choose to invest in or exit from SA REITs is critical to the understanding of REIT market movements in South Africa, the stock market, and the economy as a whole.

South African REIT investors have solvency and return implications as a result of these changes. In light of the characteristics of emerging markets, such as market fluctuations and dynamics that differ from those in developed markets, it is essential to understand the underlying motives of international investors to buy stock in SA REITs (Akinsomi et al., 2017b). Within the three essays, the commonality of concerns is inherent within the inconsistencies in relevant extant literature with respect to the performance of REITs. In essay one, some studies argued that there is a positive relationship between policy and underpricing (Su et al., 2002; Prasad et al., 2006; Gounopoulos et al., 2020); on the other hand, others argued that there is no such relationship (Yang et al., 2020; González et al., 2019; Too & Yusoff, 2015), even when controlling for literature-backed variables. Specifically, there were also inconsistencies on the relationships between financial ratios and SEO underpricing; by implication, some studies documented a positive relationship (*LEVERAGE* [positive relationship: Ooi, Ong & Li (2010); Harrison, Panasian & Seiler (2011); Cline, Fu, Springer & Tang (2014); Deng & Ong (2018) and Zhu, Ong & Yeo (2010)], [negative relationship: Hardin III & Wu (2010); Alcock, et al (2014); Letdin, et al (2019) and Chikolwa (2009)]; *DIVIDEND YIELD* [positive relationship: Christie (1990); Chen, et al (1990) and Asquith & Mullins Jr (1986).], [negative relationship: Ong, et al (2011) and Elliott, et al (2009) and Elton & Gruber (1970)]; *SEO SIZE* [positive relationship: Ghosh, et al (2000); Ghosh, et al (2000b) and Ooi et al (2011)], negative relationship: Howe & Shilling (1988) and Mikkelson & Partch (1985)] among others. This inconsistent nature has an adverse effect on making forecasts with respect to the relationship among some variables and performance dynamics of REITs. The policy in question is the Black Economic Empowerment (BEE); *Black Economic Empowerment (BEE)***.** The Broad-Based Black Economic Empowerment Act of 2003 (as amended) governs the activities and operations of firms listed on the Johannesburg Stock Exchange (JSE). While listed firms are encouraged to follow these criteria, it is optional. There are five (5) generic codes of good practice[1] with which listed firms are expected to voluntarily comply with. The BBBEE status measures a

[1] *Socio-Economic Development – 5 (*Maximum Number of Weighting Points Available); *Skills Development – 20 (*Maximum Number of Weighting Points Available); *New Enterprise and Supplier Development – 40 (*Maximum Number of Weighting Points Available); *Management Control – 15 (*Maximum Number of Weighting Points Available); *Ownership – 25 (*Maximum Number of Weighting Points Available)

listed firm's score based on the five (5) generic elements (codes of good practice). The score points are measured in line with sub-requirements subsumed under each of the specific (five) elements. This is done annually by an agent that has been verified by government; the agent is also empowered to issue a BBBEE certificate which confirms the listed firms' status. The ranking and procurement acknowledgment (by government) a firm receives is determined based on the levels of BEE compliance[2]. If a REIT's points are less than 30, such is regarded as non-compliant, and no procurement acknowledgment is accorded.

As earlier said, the second essay is inherent with inconsistencies found in literature; for instance, Howe & Shilling (1990) reported that, on average, externally managed REITs had negative abnormal returns from 1973 to 1987; however, Hsieh & Sirmans (1991) and Cannon & Vogt (1995) found that, on average, internally managed REITs had positive abnormal returns from 1987 to 1992. Also, Capozza & Seguin (2000) established that compared to internally managed REITs, externally managed REITs issue loans with lower projected interest rates. Apart from this, while the REIT sector has been perceived as more transparent than other businesses because of its rigorous regulatory requirements, physical assets, and highly predictable income flow (Schrand, et al, 2021; Olanrele, et al, 2015; Newell & Osmadi, 2009; Morri & Beretta, 2008; Joseph, et al, 2006), existing literature (Zhu et al, 2010; Deng & Ong, 2014; Seguin, 2016) noted that while the perceived transparency within the REITs sector ought to ameliorate potential engagement in earnings management; yet, there are also wide reports of investor concerns with respect to low dividend yields; these aforementioned studies equally reported that managers tend to attempt to manipulate the financial sheets in favour of external sources of financing. Chiang (2015) had reported that dividend yields of REITs in emerging (especially African) markets appear not to have performed comparatively with their counterparts in developed markets.

With the third essay, there are also significant inconsistencies among REITs with and without female directors being documented. Gender diversity has been found to be associated with improved firm performance in several studies; some others include Carter et al. (2003), Martin-

[2] Level 8 - 30 to 39.99 - 10% Compliance; Level 7 - 40 to 44.99 - 50% Compliance; Level 6 - 45 to 54.99 - 60% Compliance; Level 5 - 55 to 64.99 - 80% Compliance; Level 4 - 65 to 74.99 points - 100% Compliance; Level 3 - 75 to 84.99 points - 110% Compliance; Level 2 - 85 to 99.99 points - 125% Compliance; Level 1 - 100 points and above - 135% Compliance

Ugedo & Minguez-Vera (2014), Ngyuen et al (2015). Female representation on corporate boards of directors is associated with more effective corporate governance, according to Terjesen et al (2009). As previously observed by Adams & Ferreira (2009), gender diversity can provide greater monitoring and operate as an extra governance tool that would help firms characterized by inadequate governance practices (Gul et al., 2011; Nguyen et al. (2015),. Women's empowerment, according to Perryman et al. (2016) lowers the risk level of a company. A favorable association was shown by Nielsen & Huse (2010) between the proportion of female directors on boards of directors and board strategic control. Conversely, female inclusion on boards have been also shown to reduce shareholder value in firms with effective governance, according to Adams & Ferreira (2009), who found that applying gender quotas may result to over-monitoring in those companies. In same vein, Wellalage & Locke (2013) argued that gender diversity results in a decrease in company performance as well as an increase in the cost of doing business. In Shrader et al (1997) and Farrell & Hersch (2005), evidence indicates that here is no significant relationship between female inclusion on the boards and company performance; other studies who provided evidence in this light were conducted by Carter et al. (2010), Dale-Olsen et al (2013), and Rose (2007).

1.3. The Scope of the Study

Accordingly, the focus of this thesis is restricted to the (a) relationship between the BEE policy and underpricing of South African REITs SEOs; (b) the relationship between REITs management structures and earnings management; and (c) the relationship between female inclusion on REITs boards and financial performance using return on assets as proxy. This study is specifically restricted to listed Real Estate Investment Trusts (REITs) on the Johannesburg Stock Exchange (JSE) in South Africa.

1.4. Research Objectives

In this thesis, the primary research question is: What is the performance and pricing of SEOs of South African REITs? The first essay focuses on the policy-SEO underpricing relationship and the second and third essays examine the management structure-earnings management and gender diversity-firm performance relationship respectively. The first essay examines the policy-SEO

underpricing relationship. As in previous literature, the study adopts the Black Economic Empowerment (BEE) policy as the sample policy due the evidence on concerns developed around it (Tangri & Southall, 2008; Juggernath et al., 2013; Shava, 2016). According to the researchers, the implementation of BEE has resulted in the formation of new classes of individuals as a result of fraud and corruption, difficulties obtaining a status certificate, and political meddling. According to a number of studies, BEE has to be properly implemented and aligned with other economic policies, such as the National Development Plan, in order to facilitate economic potential for the black South Africans.

In terms of BEE related shares, there are also inconsistencies with respect to firm returns; for instance, Ward & Muller (2010) provided evidence on positive relationship; conversely, Jackson et al (2005) provided evidence on negative relationship. Therefore, the study examines whether SEOs of BEE REITs are less underpriced than SEOs of non-BEE REITs. The research question for the first essay is *"Are SEOs of BEE REITs less underpriced than SEOs of non-BEE REITs?* The second essay explores the relationship between the two REITs management structures and earnings management during the SEO stage. The study focuses on internally and externally managed South African REITs. The study examines discretionary accruals as the measure/proxy for earnings management while estimating the presence and degree of earnings management using Modified Jones Model. As SEO firms have been discovered to engage in genuine earnings management in post-SEO firm performance (Kothari, et al, 2016; Deng and Ong, 2014; Yang, et al, 2013); this means that in the aftermath of SEOs, the long-term trend of poor post-SEO firm performance will be more profound than post-SEO firm manipulation (Cohen & Zarowin, 2010; Rangan, 1998). Earnings management efforts over accrual-based manipulation are favored among REIT managers because of a major reason; a reason being that REIT managers are also limited by the dual performance measurement by net income and money from operations prior to enhancing their compensation by actions like merger and acquisition (Zainudin, et al, 2019; Deng and Ong, 2018). Because REITs with low operating cash flow are less likely to seek external funding, their motivation to control net operating income is greater than for other companies. In terms of REIT exposure to SEO timing, the study has just begun to focus on SEO timings in connection to the

degree of earnings management. In light of South Africa's recent financial scandals [3] Holtzblatt, et al, 2020; Jooste, 2011), this study contributes to investigating possible instances of earnings manipulation among REITs on the Johannesburg Stock Exchange. The research question for the second essay is *"Do internally managed REITs manage earnings more than externally managed REITs during SEOs?"* The third essay explores the financial value of including females on the boards of South African REITs. The majority of empirical research on gender diversity and company performance have employed three measures of diversity, namely, the proportion of female directors, the gender dummy, and the Blau-Index, as measures of diversity.

Empirical data on the relationship between female inclusion and corporate success has been ambiguous in both developed and developing markets. Gender diversity has been found to be associated with improved firm performance in several studies (Carter et al., 2003; Ngyuen et al., 2015; Martin-Ugedo & Minguez-Vera, 2014). Female representation on corporate boards of directors is associated with more effective corporate governance, according to Terjesen et al (2009). When it comes to governance, gender diversity may be an additional tool to aid companies with weak administrative standards (Gul et al., 2011; Nguyen et al., 2011) (Adams & Ferreira, 2009). (2015). As per Perryman et al. (2016), women's empowerment decreases a company's risk level. Nielsen & Huse (2010) found a positive correlation between female director representation on corporate boards and boardroom competitive edge. According to Adams & Ferreira (2009), who discovered that adopting gender quotas may result in over-monitoring in those organizations, female involvement on boards has been demonstrated to lower shareholder value in firms with strong governance. Similarly, Wellalage & Locke (2013) suggested that gender diversity reduces firm performance and raises the cost of conducting business.Evidence from Shrader et al. (1997) and Farrell & Hersch (2005) indicates that there is no significant relationship between female inclusion on boards and company performance; other studies that provided evidence in this light were conducted by Carter et al. (2010), Dale-Olsen et al (2013), and Rose et al (2013). In light of this, the study proposes a relevant research subject for the third essay:, *"Does female inclusion and their level of education on the boards of REITs increase firm performance?"*

[3] fraudulent financial reporting; Corporate malfeasance; Audit Scandals

1.5 Research Contributions

An examination of the influence of BEE on SEO underpricing is the focus of the first essay in this thesis. Like prior studies, the study adopted financial ratios in determining the degree to which SEOs of BEE REITs were being underpriced between 2010 and 2020. The first essay of this thesis is the first complete empirical investigation of the influence of the BEE policy on SEO underpricing in the context of REITs, to my knowledge.

As a follow-up to the first article, the second essay examines how South African REITs' two management structures interact with their earnings management practices. Despite the nature of findings from literature, the study established an interesting narrative wherein earnings management practices are found to be more in externally managed REITs. To the best of my knowledge, the second essay of this thesis is the first study to examine the two management structures of REITs in South Africa within the context of earnings management.

The third essay contributes to the literature on the impact of female inclusion on boards of South African REITs, their level of education and firm performance. In South Africa, the participation of women on the boards of REITs was shown to have negative effect, but the education level of female directors was revealed to have a significant impact on the firm's financial performance. The third essay of this thesis is the first to evaluate the financial impact of female participation and their level of education on firm boards in the South African REITs setting, to my knowledge.

1.6. Organization of the Thesis

This thesis is organized as follows. Chapter Two presents the first essay, titled *Are SEOs of BEE REITs less underpriced than SEOs of non-BEE REITs?* This chapter explores a unique value of policy relationships, that is, the impact of BEE on underpricing of SEOs of REITs. Earnings management in internally and externally managed REITs at the time of SEOs is examined in Chapter Three, in the essay entitled: *Do internally managed REITs manage earnings more than externally managed REITs around SEOs?* Chapter Four presents the third essay, entitled *Does Female Board Representation and Level of Education enhance REITs performance?* This essay examines the role of women on the boards of REITs, their educational attainment, and how these influence the company's financial performance. However, the research found that the possession of higher degrees of education by female directors in South African REITs had a significant

impact on the level of performance; however, this was not the case for men directors. The last chapter of the thesis summarizes the entirety of all findings, points out the study's shortcomings, and recommends future research.

CHAPTER TWO

SECONDARY EQUITY OFFERINGS (SEOS) OF BLACK ECONOMIC EMPOWERMENT (BEE) REITS ARE HIGHLY UNDERPRICED THAN SEOS OF NON-BEE REITS

2.1. Introduction

Secondary equity offerings (SEOs) are equities issued by firms already listed on a stock exchange. Lorenz (2019) documented that SEOs play a crucial role in the sustainable and profitable growth of listed firms over the long run. Gokkaya et al. (2015) and Har & Visvanathan (2018) also noted that SEOs are major events where listed firms raise funds perhaps due to their restrictions on debt ratio. This makes the SEOs one of the front burner topics in REITs literature (Gunay & Ursel, 2015). Since REITs are increasingly using SEOs to raise capital, it is important to determine if these offerings are efficiently priced. On underpricing, Chen et al (2017) argued that countries with higher economic freedom have significantly less serious SEO underpricing problems. Ho et al (2020) recently listed South Africa as one of the countries with a high index of economic freedom; as such, it will be interesting to empirically analyze the degree of underpricing in a market of this nature. The study noted that there exists a dearth in literature; this will be a pioneer study into the relationship between the BEE and underpricing of SEOs of REITs in emerging markets using South Africa as an example.

2.1.1 Top Global REITs: Market Capitalization

Real estate investment trusts (REITs) have risen dramatically over the last decade, with a market value over $1.7 trillion in 2016 compared to $734 billion in 2010. (Ernest and Young, 2016). Global REIT market capitalization totals $1.740 trillion from 2016 to the present (2022) (Bonato, et al., 2022). Since 2012, the market for US REITs has grown by more than 150 percent, while the share value of non-US REITs has more than doubled. Australia and Japan are now the world's two fastest-growing REIT markets, with France and the United Kingdom coming in second and third, respectively. At a value of roughly $29 billion, Onyema (2017) estimates that the real estate investment trust business in Africa is concentrated mostly within 4 countries (Kenya, South Africa, Ghana, and Nigeria). Top global REITs are illustrated in Table 2.1.1 below.

More than 50 REITs have been listed in Africa as of this writing, with South Africa accounting for 44 of them and Nigeria having three (3) listed REITs. REITs are experiencing a considerable increase in interest and engagement from a larger number of investors. Given the continent-wide shortage of housing, real estate exchanges are ideally positioned for a long-term growth sector (Wong, 2004). In REITs study, previous studies such as Yusof & Bin Mohd Nawawi (2012) and Alias & SoiTho (2011) employed standard performance assessments centered on Portfolio theory. It has been widely accepted in the United States that REITs had comparable risk - adjusted performance to ordinary stocks prior to the early 1990s. According to Smith & Schuman (1976), REIT returns were equivalent to that of alternative investments of common stocks for the period 1963-1974. From January 1976 to June 1993, Mueller et al. (1994) calculated the mean monthly return and standard deviation of equity REITs (stocks), as well as small-value stocks, in the United States. The return and risk structure of REITs looked to be comparable to that of small-value stocks and shares. There was an average monthly return of 1.46 percent for REITs, 1.31 percent for shares and 0.0444 for small-value shares, respectively, for the three asset classes. Furthermore, Han & Liang (1995) similarly found that REIT returns and risk behaved much more like those of stock than those of direct property. Research investigations on the relationship between REITs and stocks have yielded mixed outcomes throughout time. In the early 1990s, there were a number of institutional developments in the REIT industry. Since 1997, the structure of REIT portfolios has resembled those of the secondary market, according to Mueller & Mueller (2003). The Revenue Reconciliation Act of 1993 as well as the REIT Modernization Act of 1999 both introduced tax modifications that increased the appeal of REITs to institutions (Cannon & Vogt 1995).

Table 2.1 1: Market Capitalizations of REITs globally 2021

REIT/Year of Origin	**Market Capitalization (USD)**
US (1960)	1.33 Trillion
UK (2007)	74 Billion
Netherlands (1969)	0.77 Trillion
France (2003)	76 Billion
Belgium (1995)	16 Billion
South Africa (2013)	36 Billion
Italy (2007)	5.1 Billion
Australia (1985)	103 Billion
Ireland (2013)	5.3 Billion

Spain (2009)	28.2 Billion
Mexico (2004)	17.5 Billion
Hong Kong (2003)	11.1 Billion
Singapore (1999)	73.3 Billion
Japan (2000)	147.2 Billion

Author's Compilation (2021)

2.1 2 Top African REITs: Market Capitalization and Sector

Since evolution (REITs regime), the top 4 African REITs are shown in Table 2.2.1. A look at the top four REITs shows that these REITs diversify their interests through commercial, retail, residential, industrial and specialized sectors. South African REITs, being the largest leads with a market capitalization of $36 Billion with 34 REITs. South Africa according to reports from the South African IRESS Expert database also had a 67% concentration of institutional investors – this signals market confidence on the part of these investors.

Table 2.2 2: Market Capitalizations of REITs in Africa 2021

	Nigeria	**Tanzania**	**Kenya**	**South Africa**
Specific REIT Regulation?	Yes	Yes	Yes	Yes
Year REITs introduced	2007	2011	2013	2013
Amendments planned?	Yes	No	Yes	No
Management	Internal	External	External	Hybrid
Portfolio	3	1	3	34
Minimum Dividend Distribution	90%	90%	1 – 80%	90%
Tax Exemptions	Corporate	Corporate	Corporate	Corporate
Market Capitalization ($)	$136 million	$7 million	$7 million	$36 billion
Ranking in Africa	2	4	3	1
Sectors	Diversified	Diversified	Diversified	Diversified
Percentage of Institutional Investors	17%	13%	11%	67%

Author's Compilation (2021)

2.1 3 Top South African REITs: Market Capitalization and Sector

For the period 2021 and since evolution (REITs regime) in 2013, the top 10 South African REITs are shown in Table 2.3.1. A look at the top ten REITs shows that retail is the most common sector they (REITs) invest in, with commercial the second most prevalent. The largest South African REIT, Growthpoint Properties Ltd, has 432 properties. Growthpoint, Redefine, Resilient, and Fortress Income A are South Africa's top four REITs by market capitalization, and they comprise

four of the top five components of the FTSE EPRA/NAREIT Emerging EMEA Index (Hodges, Ren, Schwaiger and Ang, 2022). Growthpoint Properties and Redefine Properties are two South African REITs in the Top 10 constituents of an emerging market index that includes Asian nations, the FTSE EPRA/NAREIT Emerging Index. The South African REIT market trails only China. This discussion of developing market indices demonstrates the global dominance of South African REITs inside emerging markets.

Table 2.3 1 Top South African REITs: Market Capitalization and Sector

Name	Market Cap (ZAR)	Market Cap (USD)	Sector	Properties
Growthpoint Properties	R 46,315,625,391	$ 3, 057, 520, 440	Retail, Commercial, Industrial	432
Redefine Properties	R 25,537,127,335	$ 1, 685, 830, 390	Retail, Commercial, Industrial	133
Resilient REIT	R 23,287,347,983	$ 1, 537, 311, 476	Retail	16
Fortress Income (A)	R 15, 204, 754, 395	$ 1, 003, 740, 03	Industrial, Retail, Commercial, Residential	101
Hyprop Investments	R 11, 920,764,948	$ 786, 947, 864	Retail, Commercial	16
Vukile Property Fund	R 11, 857, 210, 187	$ 782, 752, 304	Retail	74
Investec Property	R 9, 667, 070, 512	$ 638, 170, 497	Retail, Commercial, Industrial	25
SA Corporate	R 6, 110, 798, 991	$ 403, 403, 660	Industrial, Retail, Commercial, Residential	166
Emira Property	R 6, 083, 846, 755	$ 401, 624, 411	Industrial, Retail, Commercial	146
Arrowhead Properties	R 6, 031, 841, 833	$ 398, 191, 313	Commercial, Industrial, Retail, Residential	185

More specifically, there is great interest in the threat of SEO underpricing (Ngo et al., 2019). With the prevalence of SEO activity, expectations are such that listed firms will effectively access the capital market. Unfortunately, this may not be the case. SEO under-pricing occurs when the offer price of allotted shares is significantly lower than the price of the shares eventually traded on the

offer day (Lorenz, 2019). This may stem from the timing of issues (Naveen Kumar et al., 2018; Ngo et al., 2019), incidence of information asymmetry, or when they (issues) are overvalued (Naveen Kumar et al., 2018). The phenomenon of SEO under-pricing is an issue of concern because listed firms incur direct cost. The existing literature also suggests public policy interventions may contribute to SEO underpricing. There is some evidence of this in both developed and developing countries, with the problem more pronounced in the latter (Gounopoulos et al., 2020; Liu et al., 2020). Publicly traded companies in developing countries may be particularly susceptible to SEO under-pricing due to information asymmetries, a lack of strong institutional frameworks and policies that tend to improve the performance of listed firms (Marquis & Raynard, 2015; Cobbinah et al., 2015). Apart from this, observations from literature on the inconclusive nature of findings (on public policy impact on stock market returns and pricing: Su, et al (2002) – positive (Hong Kong); Vozikis & Ariff (2006) – Negative (Malaysia); and Gounopoulos et al. (2020) – Negative (China) spur the need to better understand the impact of public policy on SEO pricing in such settings.

In South Africa, the government enacted a host of policies such as the Employment Equity Act (1998)[4] [5]; the Promotion of Equality and Prevention of Unfair Discrimination Act (2000)[6][7] with a view toward ending white domination and encouraging black participation in the economy (Ponte et al. 2007). The Black Economic Empowerment (BEE) has been a crucial economic measure for the post-apartheid era. The policy is governed by the *Broad-Based Black Economic Empowerment Act* (2003), in which organizations are awarded points for voluntarily complying with codes of good practice[8] . The study finds that the BEE policy is documented to have been politicized; for instance, Tangri & Southall (2008) noted that leaders of the ruling African National Congress (ANC) party appear to have ensured that only politically-connected individuals benefit from the policy. This in turn has created controversies for different sectors in which investors now behave differently and highly underprice SEOs of non-BEE REITs based on sentiments arising from the

[4] Oosthuizen, R. M., & Naidoo, V. (2010). Attitudes towards and experience of employment equity. *SA journal of industrial psychology*, *36*(1), 1-9.
[5] Jain, H. C., Horwitz, F., & Wilkin, C. L. (2012). Employment equity in Canada and South Africa: A comparative review. *The International Journal of Human Resource Management*, *23*(1), 1-17.
[6] Kok, A. (2008). The Promotion of Equality and Prevention of Unfair Discrimination Act 4 of 2000: Court-driven or legislature-driven societal transformation?. *Stellenbosch Law Review= Stellenbosch Regstydskrif*, *19*(1), 122-142
[7] Kok, A. (2001). The Promotion of Equality and Prevention of Unfair Discrimination Act: why the controversy. *JS Afr. L.*, 294
[8] Ownership, Management Control, Skills Development, Enterprise and Supplier Development, Socio Economic Development

economic policy uncertainties (Tian & Megginson, 2007; Ariff, et al, 2007). Extant studies (Mining sector – Sennanye, 2014; REITs Sector – Akinsomi et al, 2016; Non-traded Options Sector - Kuys, 2012 and Transport Sector - Maphanga, 2003) have all reported empirically about the challenge around reconciling the intent of the BEE policy and its actual impact; enhancing black participation versus curbing white domination respectively. In light of the above and based on past literature (general stocks: Ariff,et al, 2007; Lee & Jeong, 2016; and REITs: Evans, et al, 2016; Erol, et al. 2020), the study therefore hypothesized that the more a REITs firm is not BEE compliant, the higher its SEOs are underpriced.

The Chinese market for instance is observed to witness government's intervention through developing corporate policies that influence equity issuance. With this, it is obvious that a good indication of firms' quality will be on the decline with public policy influenced SEO underpricing. Without hesitation, the Chinese government intervention tends to compel firms (albeit, voluntarily) to achieve social and political objectives, including satisfying a responsibility to the society, keeping up social steadiness and territorial developments (Chen et al., 2011). The contention among state and minority investors prompts investment shortcoming, and subsequently reduces firm value. Underpricing SEOs in government-linked firms is observed to be compensation for future shortcomings rather than a measure to uncover the potential viability and quality of firms. In addition, government-linked firms are found to highly underprice their stocks through SEOs for political and monetary gains as opposed to raising capital later on in the future (Hellman et al., 1999).

2.1.4. Underpricing of Initial Public Offerings and Secondary Equity Offerings: The Underpinning Theories

Many relevant theories provide more insights into the SEO underpricing inefficiencies; A few hypotheses, both rational and irrational have been previously developed with a view to explaining why firms permit underpricing; and the obsessions of investors in SEOs (Adams, et al, 2008). For instance, Baron (1982); and Rock (1986) provided a model (information asymmetry; the insights provided explained that informed investors who have information price better compared to their counterparts with no information in the event of buying shares from REITs. They further argued that the investors who have no information are induced to keep subscribing to new issues and their compensation will be same new issues which are underpriced. Allen & Faulhaber (1989) and

Grinblatt & Hwang (1989) all provided insights using the signaling theory; they all argued that by underpricing, REITs signal their attributes by underpricing with the intention of redeeming left overs of the money within issues that have been sold subsequently; and this is done after investors have bought shares. The information acquisition hypothesis in explaining the nature of pricing was provided by Benveniste & Spindt (1989). The instance of uncertainty about the value of an SEO before it is listed on a stock exchange brings about underpricing (Beatty & Ritter (1986). To the best of the authors' knowledge, none of the existing researches attempted to explain this pricing inefficiency using policy interventions.

The statistical models presented in this paper use data obtained from the Stock Exchange News Service (SENS) and the IRESS Expert database to test whether BEE compliance exacerbates the risk of SEO under-pricing for real estate investment trusts (REITs) listed on the Johannesburg Stock Exchange. Compliance is anticipated to have this effect because policies designed to address economic equality may potentially decrease information asymmetries by making informed investors less underprice stocks of government-intervened listed firms (Gounopoulos, et al, 2021; Gounopoulos, et al, 2020). The research issue is whether the stock price of BEE compliant REITs are underpriced relative to non-BEE compliant REITs. The study adds to the REIT literature in two ways. First, it shows the influence of public policy on REITs SEO pricing. Secondly, the study investigates the role of SEO underpricing of the REITs market in a developing country. The findings spur interest for both listed firms and governments hoping for efficient real estate capital markets. Specifically, the study finds a positive association between REIT SEO underpricing and BEE compliance. By implication, BEE compliant REITs leave more money on the table; hence, the high rate of underpricing is not in their best interests from a capital raising perspective. Government can therefore assist BEE-compliant firms with incentives including grants and incentives; state facilitated lending; project financing; venture capital. With these, BEE compliant firms will not have concerns about the impact of underpricing with government's intervention.. Next section comprises literature review followed by the empirical implications. The next section presents data and methodological used to answer the research question; this is followed by the summary statistics and the main empirical results together with robustness tests. To conclude, the last section presents the conclusion and practical implications of the study.

2.2. Literature Review

2.2.1. SEOs and Underpricing

Several scholars have attempted to answer the question. The results of their work suggest several factors may lead to SEO underpricing. Goodwin (2013), for example, found evidence on discounting resulting from the process through which shares are placed. Apart from this, there also exists the challenge on the reliability of the valuation of issues. For instance, lower discounting is known to be associated with direct costs of fund raising (SEOs); Deng et al (2014) explained this as a situation using investor sentiment as a factor in the discounting of SEO pricing. The paper further stated that larger or higher discounting occurs in high sentiment periods and vice versa. This is prone to markets with less institutional or governmental involvement.

2.2.2. Factors and their Impact on Underpricing

2.2.2.1. Debt-Equity Ratio (Leverage)

One of the major factors that contribute to SEO underpricing is debt-equity ratio (leverage/*DE*). Extant studies have provided evidence on the relationship between the informational role of leverage and underpricing. Su (2004) described how investors react to SEO pricing based on the nature of debt of the firm before it makes an announcement; it noted that investors perceive debt as bad news. In similar vein, Poon, et al (2013) while controlling for other factors established that the debt-equity ratio in a situation where a firm receives an unsolicited rating increases SEO underpricing; this sufficiently proves that the debt of a firm at the pre-issuance phase of SEOs is positively correlated with high underpricing.

Their paper (Poon, et al, 2013) accepts that assessments, liquidation (bankruptcy) and office costs have practically nothing, assuming any, impact on the capital structure choices among Chinese firms for two reasons: To start with, the level of detachment of proprietorship and the executives is very low in recently privatized Chinese firms. The normal division of the quantity of A-shares offered to the general public in their example is only 28% of a REIT's all out value (total equity) and the normal portion of offers held by the public authority is 42%. A REITs with an SEO has significantly less free income and less administrative entrenchment issue. Ordinarily, being the biggest partner, the Chinese government has huge measure of impact over the determination and excusal of firm managers, and provides that check and balance on them (managers). Second,

without thorough authorization, the Chinese liquidation law is only an undeveloped (emerging) administrative system and may not influence corporate influence choices.

Mok & Hui (1998) examined a sample of 87 Shanghai A-share SEOs between 1990 and 1993; and revealed that the trend of SEO initial returns is inferable from investors' apparent perception of risk vulnerability of individual REITs. Steady with this view, Datar & Mao (1998) propose that government's motivation to urge the Chinese public to broadly take an interest in the privatization cycle is a clarification for the underlying nature of SEO underpricing. Furthermore, Chan et al. (2003) discovered that cross-sectional varieties of abnormal SEO returns in China are referenced by institutional features; for example, the level of equity held by government and other relevant stakeholders, the frame of time between offering and listing, together with the number of stock financial specialists in the SEO firm's region. Booth and Chang (2011) opined that dividend-paying status of a firm signals less SEO underpricing. The higher dividends a firm pays out is perceived as ‘good news’; this negates the explanations of the Asymmetric Information theory which admits that higher underpricing will occur in a situation whereby there is no agreement on dividend between shareholders and managers. Also, De Cesari & Huang-Meier (2015) provided evidence on the relationship between dividend policy and price formation; it is noted that investors react to the SEO price based on the information on the dividend policy of a firm. Managers also learn to determine their dividend policy as a result of price formation.

2.2.2.2. SEO Size (SIZE)

The SEO *SIZE* that is issued and listed affects the nature and extent of underpricing; Clarkson & Merkley (1994) had indicated that SEO size is negatively related with SEO underpricing. In same vein, Boudriga, et al (2009) clarifies this observational relationship by the way that the *SIZE* of the SEO demonstrates the risk inherent in the new issue as bigger SEOs may only be offered by a firm with years of relevant experience which should be innately safer. In this way, speculators require a lower premium through underpricing with a view to getting empowered to buying part of the SEO. Ghosh, et al (2000) opined that investors engage in higher SEO underpricing of firms (REITs) whose percentage ownership of shares are high; this indicates a positive relationship between SEO size (*SIZE*) and higher SEO underpricing. Charalambidis (1998) suggests that the inclined coefficient gauges on the level of equity held and the market of buoyancy are positive and

dependably not quite the same as zero, while LGP[9], the coefficient for SEO size, is negatively and significantly related to the size of SEOs. These outcomes propose that firms whose pre—offering investors have held higher percentages of equity capital in the SEO are bound to raise bigger amounts of capital through SE0s.

With equal weights assigned to each of the 123 REIT SEOs, Bairagi & Dimovski (2011) found that the underpricing cost of obtaining external stock for REITs averaged 3.18 percent in 2011. Underpricing has been linked to larger offers, according to a new study. Underpricing averages 4.67 percent when using a value-weighted method, which implies that greater offer sizes are an essential factor in deciding whether to leave money on the table. Underpricing is influenced by factors such as higher-reputation underwriters, an industry-differentiated auditor, and a post-offer ownership structure. The global financial crisis, which lasted from 2007 to 2010, resulted in negative underpricing (overpricing), according to the research (GFC). There were greater bargains between 1997 and 2004 when it came to office/industrial properties, which were more underpriced.

During the 1980s, Wang, et al (1992) found that REIT SEOs had been overpriced and offered more than 7%, although in the nineties, they remained underpriced and offered 6% or less. Underwriters charged REIT SEOs who paid the gross spread of 6.5% or 7.0% more than the control group of industrial business SEOs with a similar offer size. In the early stages of introducing a new financial product like a REIT to individual investors, investment banking firms charge greater gross spreads and frequently establish integer offer prices. Fractional offer pricing were seen in the 1990s with reduced gross spreads.

Barry & Brown (1984) propose that there exists a positive relationship between firm specific information in the equity market and firm size. By implication, this suggests that bigger firms will be associated with bigger offerings; and consequently, less futuristic risk. In contrast, Holland & Horton (1993) contend that issue size and futuristic risk might be positively related. Their contention depends on the way that higher gross proceeds continue to increase the degree of potential investment opportunities. Gounopoulos, et al (2020) presented evidence on the

[9] (LGP is the natural logarithm of the gross proceeds)

relationship between SEO Underpricing and SEO SIZE of government-intervened firms. The results from their findings indicate that SEO underpricing is more likely to be associated with SEO activities among firms not intervened by the government. This supports the study's assumptions that government-intervened firms will likely have unfettered access to financing (Firth, et al., 2010). Interestingly, the paper found a significantly negative coefficient on the relationship between SEO underpricing and government-intervened firms.

2.2.2.3. Dividend Yield

According to Michaely & Shaw (1994), a significant correlation between underpricing and volatility exists. In same vein, Allen & Faulhaber (1989) claim that dividend policies and after-IPO profits performance help shape the market's perception of the firm's value. The market is said to reward firms who pursue a low price/high dividend strategy and also tend to pay higher earnings than firms that employ the same strategy but do not discount their prices.

2.2.2.4. Market to Book Ratio (MBvR)

One of the crucial factors of underpricing is Market to Book Ratio (*MBvR*); with it being used to assess the value of a company by comparing its *book* value to its *market* value. Investors are known to use this to also assess the investment and growth opportunities of a firm. Hertzel & Li (2010) noted that many investors react by comparing the *MBvR* of the selling firm vis-à-vis the *MBvR* of other firms in the same sector. For SEOs, if the company's *MBvR* is high, it is noted that the manager will be spurred with confidence to place a high selling price relative to the stock value; with this, investors will less underprice. If otherwise, then investors will engage in higher SEO underpricing based on the BEE-compliance information that has been signalled to them (Ting & Tse, 2006). The study also finds other findings on the effects of *MBvR* on underpricing in Drobetz, et al (2013), there is documented evidence on a negative effect. Chan, et al (2004) noted that SEOs are priced substantially below their non-SEO partners dependent on either the price/profit proportions or based on the market/book ratio, particularly for A shares; the results in their paper reveal a positive effect.

2.2.2.5. Inflation Adjusted Return (INFLAdR)

Kim & Shin (2001) noted that there exists a relationship between inflation adjusted return and SEOs underpricing in firms. This study also notes that investors will receive high real rates of return of a firm as 'good news' and consequently less underprice their SEOs. It has been shown that the lack of alternative investment options with real returns above inflation (INFLAdR) has a significant relationship with the underpricing of SEOs; this is because the financial sector had been able to offer sub-inflationary returns to investors since not all of them could afford the lucrative property market. Because of this, anyone with extra money could invest in the stock market, which included IPOs.

2.3. Impact of Public Policy

Despite a dearth of studies, there also appears to be an empirical relationship between public policy and SEO pricing. Using SEOs from the Nairobi Stock Exchange, Simiyu (2008) compared state (government/public) intervened listed firms and private owned listed firms; and documented evidence of higher/greater underpricing in the former (government intervened listed firms[10]). Using Malaysian SEOs, Prasad et al (2006) opined that SEOs are highly underpriced in emerging markets; the paper further explained that Malaysian government regulatory intervention significantly experienced a 61 percent increase in underpricing of the SEOs within the period when the policy was instituted. Simiyu (2008) also provided similar evidence in an emerging market. Analyzing government/public policy interventions as it affects pricing of SEOs in some markets, Ariff et al (2007); their study had provided strong support for the development of a hypothesis on greater/higher underpricing on government-linked SEOs compared to ones without governmental links in Singapore, Malaysia and the United Kingdom; Chang et al (2008) in their analysis also provided evidence on Chinese government-linked SEOs. Their paper noted that government intervention offers a crucial role in how issuing prices of SEOs are set; for instance, the share price to earnings (P/E) ratios in the primary market are being set much lower than the average P/E ratio in the secondary market; this causes the issuing prices to be much lower (greatly/highly underpriced) than the average stock trading prices with a view to attracting a large amount of capital to the primary market. Chi & Padgett (2005), a study carried out in China also noted that

[10] A situation in which governments promote economic fairness

there is higher underpricing where there are evidences of government intervention in either directly or indirectly setting of the issuing prices of the SEOs. The paper noted that such intervention causes higher underpricing for the sole purpose of getting the best market feedback on offerings.

This has policy implications for the REITs sector particularly in emerging markets. For the REIT sector, SEOs of non-BEE compliant REITs will continue to be highly underpriced because there appears to be special incentives for government entities to intentionally underprice Government-Linked Company SEO issues and/or support higher post-issue prices; Ariff et al (2007) in their paper noted this evidence of a range of 14–133.5% extent of underpricing in three markets (the United Kingdom, Singapore and Malaysia).Governments with similar policies need to redress the criticisms generated from the controversies. The paper also recommends that governments will need to adopt critical engagements with relevant stakeholders in the REITs SEOs sector. It is perceived that failure to do this will affect how SEOs of REITs are being priced. REITs also need to adequately provide more information on price of issues so that investors will not continue to make adverse selections. Furthermore, Tian (2007) discovered that SEO was underpriced in the Chinese market from 1992 to 2004, with the largest underpriced being 247 percent. As a matter of fact, it is claimed that government engagement with price control and SEO risk are key factors in excessive underpricing on the first day of market.

Despite the fact that South Africa's population is 80.2 percent black, their share of private capital in the economy is predicted to be less than 10% by 2020. (Turnovsky & Getachew, 2020). In 2003, black South African share capital was to be enhanced to give them greater control over more businesses and to boost their numbers as entrepreneurs, owners, directors, and professionals in the country. Given that the new policy's targeted beneficiaries are predominantly poor, it follows that the government's regulatory action will seek to cut offer prices as frequently as possible through the use of a range of company price-earnings multiples rule, for example. It was envisaged that this BEE public policy would serve as a wide economic foundation for poverty alleviation regardless of race, for society reconstruction, and for the integration of all other South African policies.

2.3.1. Public Policy Impact on Stock Market Returns and Pricing: A Review of Some Markets

2.3.1.1. Hong Kong

Su, et al (2002) examined the Hong Kong story and further revealed the impact of government policy (intervention) on the stock market. From empirical observation, the outcomes show that the development of a public policy was viable in upturning the declining pattern in the securities exchange; and subsequently decreasing the unpredictability in the financial exchange. It is also observed investors of the government-linked stocks benefited immensely across the 33 constituent stocks. There are significant positive abnormal returns around the event period as reported by the paper; apart from this, the public policy effect was retained a post-30 day event period. By implication, it suggests that the public policy is capable of sending positive signals to the general public.

2.3.1.2. Malaysia

Findings from Prasad, et al (2006) infer that conventional clarifications alone, for example, information imbalance and demand pressure, among others, might be deficient to completely clarify the moderately elevated levels of underpricing of Malaysian Initial public offerings when compared with other markets; this then suggests a possible effect of novel "market microstructure." Besides, the expansion in the degree of the average underpricing after the motivation of government to developing an all-round beneficial public policy crucially resonates a significant factor in underpricing. Just like the Hong Kong story, it is observed that the results of the paper reveals the longrun effect of government intervention around the SEO event period. Additionally, SEOs as reported were being highly underpriced as an effect of the impact of the public policy.

2.3.1.3. China

Gounopoulos et al. (2020) through a large sample revealed that there exists a positive relationship between SEO activities and initial returns of SEOs in firms in China. Consistent with Jegadeesh, et al (1993) articulation, this confirms that issuers utilize high initial returns for advantage in their future offer issuances in China. All the more significantly, the paper (Gounopoulos et al, 2020) record that the advancing impact of underpriced SEO issuances declines with the presence of

public policies from government. Specifically, the paper also reported that firms that are perhaps non-compliant tend to prefer underpriced SEOs for an increased return from SEOs. Whereas, firms with government-linked SEOs appear to perceive underpriced SEOs as compensation for high uncertainty in the future. The study fills up the gap in literature by proving novel insights to the impact of BEE on underpricing of REITs SEOs listed on the Johannesburg Stock Exchange.

2.4. Empirical Implications

With table 2.4.1 below, extant studies through literature (Ooi, et al, 2010; Harrison, et al, 2011; Cline, et al, 2014; Deng & Ong, 2018; Ong & Yeo, 2010; Hardin III & Wu, 2010; Alcock, et al, 2014); and many other empirical studies permit this study to make forecasts with respect to the relationship among some variables and SEO price dynamics of REITs. Additionally, the study has reasons to believe a relationship between BEE and the study's adopted variables based on a number of public policy-impact literature.

Table 2.1 1: Relationships Among Variables: REITs and Stocks

S/No	Variable	Paper	Relationship with SEO Pricing and Returns
1	Leverage (Debt/Equity)	Ooi, et al (2010); Harrison, Panasian & Seiler (2011); Cline, et al (2014); Deng & Ong (2018) and Zhu, et al (2010)	Positive
		Hardin III & Wu (2010); Alcock, et al (2014); Letdin, et al (2019) and Chikolwa (2009).	Negative
2	Dividend Yield	Ong, et al (2011) and Elliott, et al (2009) and Elton & Gruber (1970).	Negative
		Christie (1990); Chen, et al (1990) and Asquith & Mullins Jr (1986).	Positive
3	SEO Size	Ghosh, et al (2000); Ghosh, et al (2000b) and Ooi et al (2011)	Positive
		Howe & Shilling (1988) and Mikkelson & Partch (1985).	Negative
4	Market to Book Value Ratio	Aras & Yilmaz (2008); Lau, et al (2002).	Positive
		Friday & Sirmans (1998); Mikkelson & Partch(1985).	Negative
5	Return on Assets	Fung, et al (2009); Lorenz (2019) and Chen, et al (2019)	Positive
		Siu & Faff (2013) and Ngo, et al (2020).	Negative
6	Inflation Adjustment Return	Schwert (1981); Chatrath & Liang (1998); Glascock, et al (2002).	Positive

	Chan, et al (1990); Glascock, et al (2002) and Gyourko & Linneman, P. (1988).	Negative

2.5. Data, Hypotheses and Variable Definitions

2.5.1. Data Sources

From January 1, 2010 to December 31, 2020, the study used 170 SEOs from 21 REITs according to the Johannesburg Stock Exchange's Stock Exchange News Service (JSE). As a result of the volatility (post) crises and impacts of the global economic crisis, REITs throughout the globe were forced to participate in frequent external financing through SEOs and SEOs, which began in 2010. All REIT SEO categories were used in the analysis; and the sample spans ten (10) years. The IRESS Expert database includes the financial ratios and stock prices. To compare the influence of the BEE phenomenon on REIT SEO price, 21 SAREITs were further classified into BEE compliant and non-BEE compliant REITs (using SEN information). 9 BEE REITs are highly compliant, while 12 are not. To compute UNDERPRICING, the study utilized the OLS specification with UNDERPRICING (calculated below).

$$UP = \frac{P_1^{11} - 0P^{12}}{0P}$$

- *P refers to the Closing Price*
- *OP refers to the Offer Price*

$$UP_0 = \alpha_0 + \alpha_1 * DE - \alpha_2 * DY - \alpha_3 * SIZE - \alpha_4 * MBvR + \alpha_5 * INFLAdR + \alpha_6 * ROA + \alpha_7 * TA + \alpha_8 * BEE$$

The independent variables are time-varying covariates. It is assumed that there are unobserved firm characteristics such as management quality, staff performance that are not included in the estimation over time. The model eliminates individual firm unobserved effect:

$$UP0 = \alpha_0 + \alpha_1 * DE - \alpha_2 * DY - \alpha_3 * SIZE - \alpha_4 * MBvR + \alpha_5 * INFLAdR + \alpha_6 * ROA + \alpha_7 * TA + \alpha_8 * BEE + \varepsilon_i, \quad t = 1, 2, 3..T$$

2.5.2. BEE Compliance and SEO Underpricing

The study investigated the impact of BEE compliance on SEO underpricing, assuming that underpricing has a positive coefficient. Other than profit and share price maximization, the

[11] Closing Price
[12] Offer Price

government and quasi-government shareholders may be motivated by other factors. For example, the government uses state-owned enterprises/firms (SOEs) in its policies to maintain social stability, reduce unemployment, and re-direct economic growth to specific sectors. In government-controlled organizations and firms, there is less underpricing; this, in turn, has a positive effect on SEO underpricing. For example, according to Gounopoulos et al. (2020), underpriced SEOs issued by compliant firms are more likely to constitute compensation for anticipated political-oriented activities rather than a sign of superior quality, because investors perceive a significant risk of wealth expropriation in compliant firms. Also, the greater the relative number of shares allocated by government, the more influence they have in pressuring firm management to follow state policies (Chen, et al, 2004); additionally, this paper asserted that a large number of shares allocated by government implies pricing issues when the shares begin trading (Chen, et al, 2004). This implies that incentivizing investors to subscribe for government led shares in IPOs or SEOs results in new and seasoned issues being underpriced, resulting in high underpricing. High government compliance, on the other hand, according to Mok & Hui (1998), offers investors confidence because the SEO's viability is implicitly guaranteed. High government compliance, according to Mok & Hui (1998), is related with reduced underpricing; yet, this is the complete antithesis of the study's claim.

The study then predicted a significant (positive) relationship between BEE and underpricing of REITs SEOs. Based on this reasoning, the study therefore hypothesized:

Hypothesis 1A: BEE Compliance is positively correlated with SEO underpricing.

Hypothesis 1B: BEE Compliance is negatively correlated with SEO underpricing

With Figure 2.1 and 2.2, the study presents a range of activities in which REITs have been involved in SEOs between 2010 and 2020. Upon observations, the volumes of SEOs raised between 2007 and 2009 increased steadily until 2010 when SEO volumes experienced a sharp fall; in same year (2010), the study also observed that the political uncertainty in South Africa could have had an adverse effect on SEO activities. The following year (2011) began to witness a steady increase in SEO of REITs, peaking in 2014 resulting in ZAR70.1 million ($4.9 million) (low compliant/non-BEE REITs) and ZAR152.7 million ($10.7 million) (high compliant/BEE REITs); the study perceived this may have been influenced by the change in regime and structure of the property

stocks in South Africa from Property Unit Trusts (PUTs); and Property Loan Stocks (PLSs) to Real Estate Investment Trusts with a view to aligning with global standards and ethics. It is seen that after 2014, SEO activities began to steadily decrease over the subsequent years and bottomed out in 2019. It is also believed that the unprecedented effects on business operations of firms may have spurred them to raising funds in 2020 through SEOs.

According to Akinsomi et al (2016), South Africa is now designated as an emerging market for REITs due to its participation in the BRICs in 2011 and the REIT structure adoption in 2013. Property Loan Stock Companies (PLS) and Property Unit Trusts (PUT) were the only two publicly listed property investment companies in South Africa before 2013. (PUT). PLS and PUT are real estate-focused mutual funds. To address issues with the previously used property investment vehicles, PLSs and PUTs, REITs were introduced in South Africa in 2013. Years ago, PUTs and PLS were imposed double taxes on investors; these difficulties were resolved by converting selected and existing PLS into firm REITS; and PUTs into trust REITS when South Africa adopted the REIT structure. PUTs and PLS are not recognized worldwide and so do not attract foreign investment; these two companies are subject to distinct regulations and legislation despite both dealing in property shares, and the confusing tax problems involving PLS prompted their conversion into REITs (Anuoluwapo, *et al*, 2018). Introducing the REIT structure in South Africa is expected to solve these concerns. In terms of taxation, REITs are attractive to investors because they are simple to understand and because they are comparable to international structures (Anuoluwapo, *et al*, 2018), making them more attractive to global investment. Furthermore, this structure makes it easier to compare the performance of SA REITs with that of other worldwide REITs. The large percentage of qualified JSE listed real estate investment organizations sought for REIT registration after the creation of REITs in South Africa in 2013. Attracted by the flexibility and tax certainty given by REITs as opposed to PUTs and PLSs (Anuoluwapo, *et al*, 2018).

Figure 2. 1: Capital Raised from SEOs of non-BEE REITs (2010 – 2020) in US Dollars

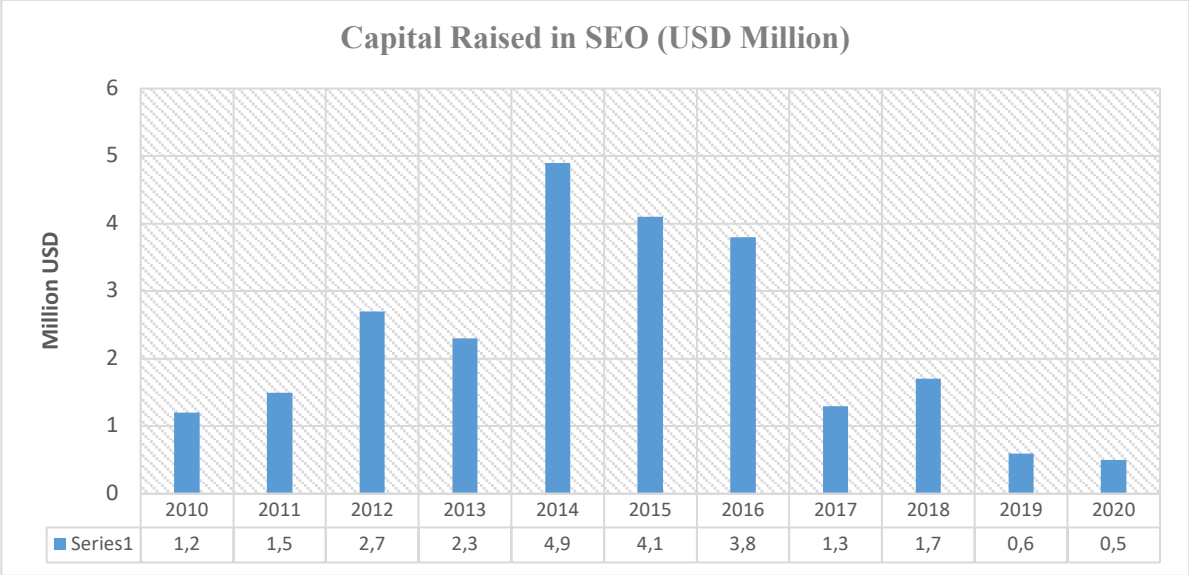
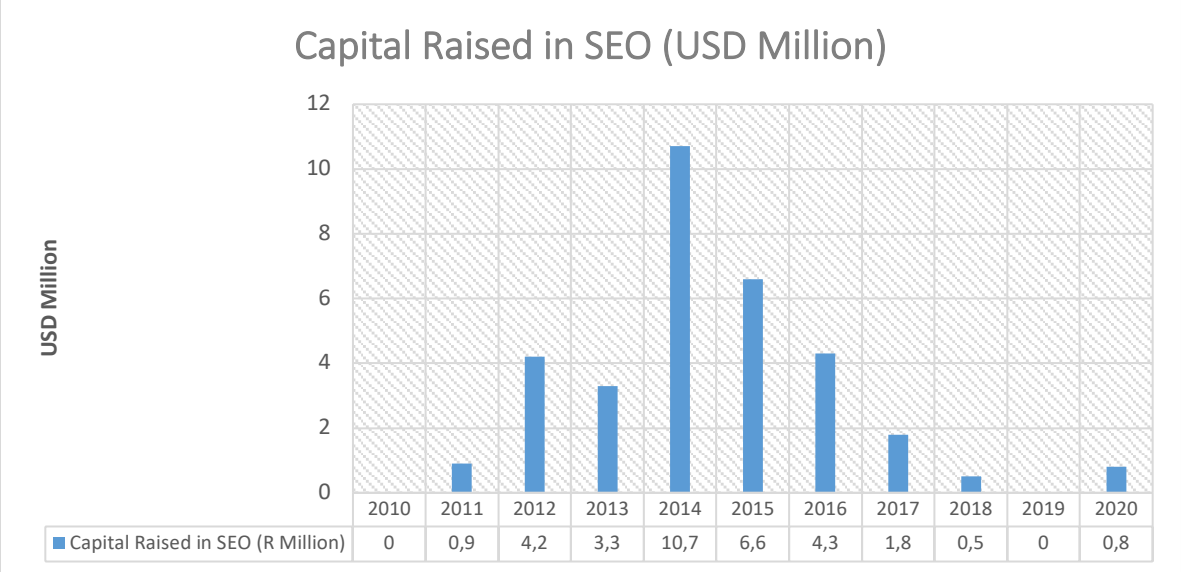


Figure 2. 2: Capital Raised from SEOs of BEE REITs (2010 – 2020) in US Dollars



2.5.3. Control Variables

With reference to the purpose of the study, the study examined extant studies with focus on determinants that had earlier been adopted to control for price dynamics. Based on this, the study adopted a set of control variables for each of the REITs firms (due to the availability of data) from the *IRESS* database in Table 2.5.1. Debt/Equity ratio otherwise known as Leverage *(DE)* reflects the percentage of a company's profits that are funded by debt rather than wholly-owned funds. In

the case of a corporate crisis, it represents the willingness of shareholder interest to pay all unpaid debts (Panasian & Seiler, 2011; Cline, et al, 2014; Deng & Ong, 2018; and Zhu, et al., 2010). Dividend Yield *(DY)* is expressed as the financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage (Christie, 1990; Chen, et al., 1990; Asquith & Mullins Jr, 1986; Ong, et al., 2011 and Elliott, et al., 2009). SEO Size (*SIZE*) is the value of the relative SEO bid (number of shares sold multiplied by offer price) scaled by the issuing firm's market capitalization (Ghosh, et al., 2000; Ghosh, et al., 2000b; Ooi, et al., 2011; Brounen & Eichholtz, 2001; Altinkilic & Hansen, 2003).

Market to Book value ratio *(MBvR)* is expressed as a financial accounting statistic that compares the overall market value of a business to its book value. In other terms, the measure is used to equate a company's available net assets to the price at which the stock is sold (Friday & Sirmans, 1998; Mikkelson, & Partch, 1985; Aras & Yilmaz, 2008; Lau, et al., 2002). Return on Assets *(ROA)* indicates calculated by dividing net gains and interest after taxes by the average of properties (Al-Omoush & AL-Shubiri, 2013). The ratio assesses how effectively business owners use properties to maximize profits. In this context, it is important to understand the future performance of SEOs; hence, the adoption of the *ROA* (Ghosh, et al., 2000; Donaldson, 2015; and Chan, et al., 2013). Inflation adjusted return *(INFLAdR)* (Peterson & Hsieh, 1997; Carter, et al., 2011; aShIkkIN ahMad-ZalukI, 2011; Sah & Seagraves, 2012; and Deng, et al., 2012).

Table 2.2 1: Model Specifications

Dependent variables	**Definition**
UP	Underpricing: calculated as the percentage difference between the offering price and the closing price for an SEO on the first trading day relative to simultaneous market return (Chan et al., 2004; Guo and Brooks, 2008)
Independent variables (Firm Level)	
BEE	Black Economic Empowerment: The BEE scorecard for both classifications of REITs between 2010 and 2020 is calculated and modelled alongside other independent variables. Level 1 - 100 points and above - 135% Compliance Level 2 - 85 to 99.99 points - 125% Compliance Level 3 - 75 to 84.99 points - 110% Compliance Level 4 - 65 to 74.99 points - 100% Compliance Level 5 - 55 to 64.99 - 80% Compliance Level 6 - 45 to 54.99 - 60% Compliance Level 7 - 40 to 44.99 - 50% Compliance Level 8 – below 40% - 0% Compliance
DE	Debt/Equity ratio: Book value of total liabilities divided by book value of equity, computed by using data from the year preceding SEO announcement

DY	Dividend yield: The financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage
Total Assets	Total Assets: measures the efficiency of a company's assets in generating revenue or sales. It compares the dollar amount of sales (revenues) to its total assets as an annualized percentage
SIZE	Number of SEOs during the Study Period: value of the relative SEO bid (number of shares sold multiplied by offer price) scaled by the issuing firm's market capitalization.
MBVR	Market to Book value Ratio: The measure is used to equate a company's available net assets to the price at which the stock is sold
ROA	Return on Assets: Net income divided by book value of assets, computed by using data from the year preceding SEO announcement
INFLAdR	Inflation adjusted return: the rate of return that takes into account the inflation rate over the time frame. The inflation-adjusted return metric's aim is to expose the return on an investment after taking inflation into account.

2.5.4. Black Economic Empowerment (BEE)

The study adopted the Black Economic Empowerment as a case study public policy for the paper. As witnessed in earlier literature, there is the assumption that BEE will be a potential source of pricing inefficiencies of SEOs. This is due to the controversies generated within the context of existing literature; Horwitz & Currie (2007) in their paper noted that the ANC leadership had bequeathed and compromised the intent of the policy to a minority few (white domination). In similar vein, Neocosmos, (2008) provided evidence on how the policy intentions were being frustrated by a few minority. Like any other sector, the REITs SEOs tend to have been engulfed with adverse selections owing to information asymmetries (Ling, et al, 2021; Feng, et al, 2007; and Downs, et al., 2000). The BEE is governed by the *Broad-Based Black Economic Empowerment Act, 2003* (as amended) in which certain codes of good practice regulate the practice and operations of listed firms on the Johannesburg Stock Exchange (JSE). While it is expected that listed firms are to comply with these codes, it is voluntary in nature. There are five (5) generic codes of good practice[13] with which listed firms are expected to voluntarily comply with.

The BBBEE status measures a listed firm's score based on the five (5) generic elements (codes of good practice). The score points are measured in line with sub-requirements subsumed under each

[13] *Socio-Economic Development – 5 (*Maximum Number of Weighting Points Available); *Skills Development – 20 (*Maximum Number of Weighting Points Available); *New Enterprise and Supplier Development – 40 (*Maximum Number of Weighting Points Available); *Management Control – 15 (*Maximum Number of Weighting Points Available); *Ownership – 25 (*Maximum Number of Weighting Points Available)

of the specific (five) elements. This is done annually by an agent that has been verified by government; the agent is also empowered to issue a BBBEE certificate which confirms the listed firms' status. The ranking and procurement acknowledgment (by government) a firm receives is determined based on the levels of BEE compliance[14]. If a REIT's points are less than 30, such is regarded as non-compliant, and no procurement acknowledgment is accorded.

2.5.4.1. The BEE scorecard explained

In South Africa, the BEE scorecard is an essential component of any market and it is explained in Tables 2.6.1, 2.7.1 and 2.8.1. In South Africa, the BEE scorecard is an essential component of any industry, Table 2.7.1 shows the BEE calculator template for firm who decide to be BEE compliant. It is recommended that business owners (REITs inclusive) recognize the scoring system for their own benefits. This is because the higher the BEE ranking, the more likely the firm is to benefit from various opportunities[15] (Sibeta, 2013; Leenheer, 2009). The scores are accorded based on various weighted elements including management, employment equity, skills development, enterprise development, preferential procurement, and socio-economic development and ownership. Exempted Micro Enterprises (EMEs) owned by black people are categorized as level 1, implying a 135 percent BEE procurement recognition (Black is classified as any African, Indian, Coloured & Chinese, South- African Citizen). A company is classified as a Qualifying Small Enterprise (QSE) if its annual turnover is between R10 million and R50 million. The score and procurement recognition a firm receives determines whether or not it is BEE compliant. It details the BEE contribution level, scorecard points, and procurement recognition percent.

- Level 1 - 100 points and above - 135% procurement
- Level 2 - 85 to 99.99 points - 125% procurement
- Level 3 - 75 to 84.99 points - 110% procurement
- Level 4 - 65 to 74.99 points - 100% procurement.

The above levels are considered to be BEE fully compliant.

- Level 5 - 55 to 64.99 - 80% procurement

[14] Level 8 - 30 to 39.99 - 10% Compliance; Level 7 - 40 to 44.99 - 50% Compliance; Level 6 - 45 to 54.99 - 60% Compliance; Level 5 - 55 to 64.99 - 80% Compliance; Level 4 - 65 to 74.99 points - 100% Compliance; Level 3 - 75 to 84.99 points - 110% Compliance; Level 2 - 85 to 99.99 points - 125% Compliance; Level 1 - 100 points and above - 135% Compliance;

[15] Grants and Incentives; State facilitated lending; Project financing; Venture capital

- Level 6 - 45 to 54.99 - 60% procurement
- Level 7 - 40 to 44.99 - 50% procurement
- Level 8 - 30 to 39.99 - 10% procurement

The above levels are considered to be BEE partially compliant. A firm is non-compliant if the points are below 30 and as such no procurement recognition is availed to such.

In South Africa, the BEE scorecard is an integral component of every firm. It is recommended that business owners grasp the score system for their own benefit. This is because the better a firm's BEE score, the more likely the firm is to benefit from various options. The scores are awarded based on many weighted variables, as previously stated; in Table 2.3.1 and 2.41, the average scorecards for all REITs between 2010 and 2020 are presented and subsequently classified accordingly (level of compliance) and respectively. Apart from ownership, management, employment equity, skills development, company growth, preferential procurement, and socio-economic development are also investigated. In 2013, a new BBBEE level was established. Although there are minor differences, the fundamentals stay the same. For example, to achieve a recognition level of 135 percent, a BBBEE level 1 contributor must have received 100 points on the general scorecard (the highest recognition level as established by government). Each of these indicators is assigned a number of points and objectives, and the scores are computed depending on how near the company is to each target. If an EME, for example, reaches or surpasses a specific objective, it can claim the entire amount of points allotted to it. By deduction, an EME's level of BBBEE contributor is determined by the total amount of points scored over the full scorecard.

Table 2.3 1: BEE Calculator Template

BEE Calculator Template	Percentage Ownership	Target	Points Scored
OWNERSHIP			
Voting Rights held by			
* Voting Rights held by Black people as a percentage of the total			
Black people		25	
Black women		10	
Economic Interest held by			
** Rights to distributions held by Black people as a percentage of the total*			
Black people		25	
Black women		10	
Designated Groups;		3	
Broad-based schemes;			
Employee share ownership programmes;			
Co-operatives			
New Entrants		2	
Net Value Transfer			
* The lower score of: Formula A: (value of shares held by Black people - funding cost)/enterprise value/target, and Formula B: (economic interest held by Black people / target for Ownership)			
Percentage of target		100	
MANAGEMENT CONTROL			
* Measured against the demographics of a company's employees			
Total points		*19*	
SKILLS DEVELOPMENT			
* Measured against a company's annual payroll and the number and demographics of its employees.			
Total points		25	
of which Bonus points		5	
ENTERPRISE AND SUPPLIER DEVELOPMENT			
* This element provides several kinds of support for small and medium black owned businesses.			

Preferential Procurement	29
* Measured against a company's Total Measured Procurement Spend (TMPS)	
of which Bonus points	2
Enterprise Development	
* Contributions to a beneficiary that is not currently a supplier of the company.	
Total points	*5*
Supplier Development	
* Contributions to a beneficiary that is a supplier of the company.	
Total points	*10*
E&SD Bonus points	2
SOCIO-ECONOMIC DEVELOPMENT	
* Contributions to organisations broadly defined as promoting employment of black people in South Africa.	
Total points	5

Table 2.4 1: REIT Firms, Average Scorecards and Classification/Level of Compliance (2010 – 2020)

S/N	Company Names	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average	BEE Level
	Compliant REITs													
1	Calgro M3 Holding Ltd	103.74	104.78	104.78	104.78	103.21	103.21	103.21	105.27	105.27	105.27	106.01	104.48	1 (High)
2	Redefine Properties Ltd	80.15	80.95	80.95	80.95	79.74	79.74	79.74	81.33	81.33	81.33	81.90	88.81	4 (High)
3	Investec Property Fund Ltd	57.08	57.65	57.65	57.65	56.79	56.79	56.79	57.92	57.92	57.92	58.33	63.23	7 (Low)
4	Dipula Income Fund Ltd	49.91	50.41	50.41	50.41	49.65	49.65	49.65	50.65	50.65	50.65	51.00	55.30	7 (Low)
5	Equities Property Fund Ltd	55.44	55.99	55.99	55.99	55.15	55.15	55.15	56.26	56.26	56.26	56.65	61.43	7 (Low)
6	Emira Property Fund Ltd	40.38	40.78	40.78	40.78	40.17	40.17	40.17	40.98	40.98	40.98	41.26	44.74	8 (Low)
7	Sa Corporate Real Estate Ltd	56.79	57.36	57.36	57.36	56.50	56.50	56.50	57.63	57.63	57.63	58.03	62.93	7 (Low)
8	Vukile Property Fund Ltd	75.22	75.97	75.97	75.97	74.83	74.83	74.83	76.33	76.33	76.33	76.86	83.35	4 (High)
9	Hpf Properties (Pty) Ltd	72.67	73.40	73.40	73.40	72.30	72.30	72.30	73.74	73.74	73.74	74.26	80.53	4 (High)
10	Growth Point Properties Ltd	72.12	72.84	72.84	72.84	71.75	71.75	71.75	73.18	73.18	73.18	73.70	79.91	5 (Low)
11	Fairvest Property Holding Ltd	48.13	48.48	48.48	48.48	47.75	47.75	47.75	48.71	48.71	48.71	49.05	53.20	8 (Low)
12	Fortress A Income Fubd Ltd	61.12	61.73	61.73	61.73	60.81	60.81	60.81	62.02	62.02	62.02	62.46	67.73	7 (Low)
13	Resilient Property Income Fund Ltd	59.12	59.71	59.71	59.71	58.82	58.82	58.82	59.99	59.99	59.99	60.41	65.51	7 (Low)
14	Accprop Accelerate Property Fund Ltd	80.44	81.24	81.24	81.24	80.03	80.03	80.03	81.63	81.63	81.63	82.20	89.13	4 (High)
15	Delta Property Fund Ltd	76.83	77.60	77.60	77.60	76.43	76.43	76.43	77.96	77.96	77.96	78.51	85.13	4 (High)
16	Dipula B Dipula Income Fund Ltd.	73.34	74.07	74.07	74.07	72.96	72.96	72.96	74.42	74.42	74.42	74.94	81.26	4 (High)
17	Fortress B Fortress Reit Ltd	56.26	56.82	56.82	56.82	55.97	55.97	55.97	57.09	57.09	57.09	57.49	62.34	7 (Low)
18	Gemgrow Properties Ltd	73.42	74.15	74.15	74.15	73.04	73.04	73.04	74.50	74.50	74.50	75.02	81.35	4 (High)
19	Hammerson Plc	81.23	82.04	82.04	82.04	80.81	80.81	80.81	82.43	82.43	82.43	83.00	90.01	3 (High)
20	Hyprop Investments Ltd	68.24	68.92	68.92	68.92	67.89	67.89	67.89	69.25	69.25	69.25	69.73	75.62	5 (Low)
21	Indluplace Properties Ltd	63.46	64.09	64.09	64.09	63.13	63.13	63.13	64.40	64.40	64.40	64.85	70.32	6 (Low)

Source: Researcher's Compilation (2021)

Table 2.5 1: South African REITs - Highly Compliant BEE REITs versus Lowly Compliant BEE REITs

S/No	REITs	Average BEE Score	Level
Highly Compliant REITs			
1	Calgro M3 Holding Ltd	104.48	1
2	Redefine Properties Ltd	88.81	4
3	Vukile Property Fund Ltd	83.35	4
4	Hpf Properties (Pty) Ltd	80.53	4
5	Accprop Accelerate Property Fund Ltd	89.13	4
6	Delta Property Fund Ltd	85.13	4
7	Dipula B Dipula Income Fund Ltd	81.26	4
8	Gemgrow Properties Ltd	81.35	4
9	Hammerson Plc	90.01	3
Lowly Compliant REITs			
1	Investec Property Fund Ltd	63.23	7
2	Dipula Income Fund Ltd	55.30	7
3	Equities Property Fund Ltd	61.43	7
4	Emira Property Fund Ltd	44.74	8
5	Sa Corporate Real Estate Ltd	62.93	7
6	Growth Point Properties Ltd	79.91	5
7	Fairvest Property Holding Ltd	53.20	8
8	Fortress A Income Fubd Ltd	67.73	7
9	Resilient Property Income Fund Ltd	65.51	7
10	Fortress B Fortress Reit Ltd	62.34	7
11	Hyprop Investments Ltd	75.62	5
12	Indluplace Properties Ltd	70.32	6

Source: Researcher's Compilation (2021)

With the above, there are perceptions that the generic codes will significantly affect the pricing of SEOs. Ponte et al (2007), Tangri et al (2008), Ntim et al (2013) and Sunde (2017) noted that foreign multinational investors (individuals and firms) flagged concerns around the BEE scorecard requirements. These scholars further stressed on the arguments around the merits of the policy opining that there appears to be anxiety regarding the lack of clarity and consistency with respect to BEE charters and regulations. According to the scholars, there tends to be a major concern as to whether black equity ownership or participation will become mandatory. Extant studies (mining sector – Sennanye, 2014; REITs Sector – Akinsomi et al, 2016; non-traded options sector - Kuys, 2012; and transport Sector - Maphanga, 2003) have all reported empirically about the challenge around reconciling the intent of the BEE policy and its actual impact; enhancing black participation versus curbing white domination respectively. In light of the above and based on past literature (general stocks: Ariff,et al, 2007; and REITs: Evans, et al, 2016), we therefore hypothesize that the more a REITs firm is BEE compliant, the higher its SEOs are underpriced.

2.6. Results

2.6.1. BEE and REIT Summary Statistics

Table 2.6.1 shows the summaries and variable descriptions for all variables. A lot of SEOs are highly underpriced before issuance, since the mean pre-SEO underpricing level is 7.14; Underpricing has long been linked to an information imbalance, which is now widely accepted (Li, et al, 2018). Information asymmetries in an imperfect market for data serve to highlight the asymmetrical distribution of important information that exists. BEE complying Firms' SEOs are on average underpriced. Given the relatively high payout ratio *(DIVIDEND)*, it is not a surprise that REIT firms use equity issues as a way to raise money, which drives up the frequency of stock offers (mean *SEO* score is 16.58) and boosts the leverage ratio (mean *DEBT/EQUITY* is 29.7). The high concentration of BEE REITs reflects the South African government's intervention in the capital market and offers a unique and necessary experiment to examine whether the political factor impacts not just firms' behavior when seeking external financing; but also investors attitude towards BEE and non-BEE REIT SEOs.

Table 2.6 1: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
BEE	170	58.845	13.882	29.44	82.2
Debt Equity	170	0.297	1.053	-0.819	1.864
Dividend	170	5.795	2.105	3.334	10.146
Inflation Adjusted Return	170	9.757	2.953	5.043	15.293
MBVR	170	7.212	0.166	6.828	7.413
Return On Asset	170	8.676	2.315	4.573	12.626
Total Asset	170	0.098	0.007	0.087	0.109
Underpricing	170	7.141	0.296	6.336	7.425
SEO Size	170	16.58	0.313	15.802	16.964

*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

Table 2.7.1 shows the annual time series; this is inherent with information on yearly SEO occurrences contained in the sample. Following the growth of the South African REITs market and subsequent regulatory policies, there is considerable variance in SEO volume. REIT SEOs stopped in 2019 and did not resume until September 2020, possibly as a result of the pandemic placing a freeze on them during that time period. Apart from this, SEO occurrences appear to have plummeted downwardly unlike previous years; in 2013 and 2014, REITs are observed to have issued the highest number of SEOs with the former as the peak year. The study asserted this could perhaps be as a result of the conversion of the former regime (PUTs and PLSs) into REITs. On average, it appears SEOs of highly compliant BEE REITs receive higher proceeds than their counterparts.

Table 2.7 1: Annual Time Series of Highly Compliant BEE and Lowly Compliant BEE REITs SEOs (2010 – 2019; 2020 was excluded to test for the effect of the Pandemic)

	High Compliant (BEE) REITs (1-4)			**Low Compliant (BEE) REITs (5-8)**		
Year	No. of SEOs	SEO proceeds ($m)	Money on the table ($m)	No. of SEOs	SEO proceeds ($m)	Money on the table ($m)
2010	0	0.000	-	4	1.232	0.712
2011	6	0.911	0.523	2	1.491	0.751
2012	3	4.233	3.114	4	2.710	2.016
2013	17	3.301	4.130	5	2.284	2.009
2014	23	10.721	12.315	15	4.915	3.013
2015	13	6.572	5.201	6	4.147	2.719
2016	7	4.291	3.014	8	3.761	3.102
2017	11	1.763	1.215	11	1.314	0.831
2018	11	0.525	0.231	4	1.731	0.4.13
2019*	0	0.000	-	2	0.614	0.401
Total	**91**	**33.138**	**30.155**	**61**	**24.723**	**16.284**

2.6.2. Correlation Matrix on Independent Variables

In Table 2.8.1, underpricing and SEOs are strongly correlated (r=-0.705). Underpricing has been found to be associated with the presence of SEOs. Equilibrium offer prices may be underpriced to enhance outsider information creation, as predicted by Chemmanur (1993). As a result of this, underpricing appears, at least in part, an attempt to entice investors into REITs. Return on Asset (ROA) and Inflation Adjusted Return (InfAdR) are strongly (positive) correlated (r=0.988); It is not surprising that both variables are strongly correlated; investors planning to make an investment anytime soon consider both before making a decision. Uninformed investors often make rash investment decisions by getting swayed away by "promises" of doubling or tripling their money. It is also understandable because both are critical to factor in the time their (investors) money will stay invested in an instrument, and how two external factors — namely tax and inflation — will impact their investment returns. Evaluating both puts investors in a better position while laying out their investment strategy to meet the short and long-term financial goals in time. Unfortunately, this finding is not consistent with extant studies (Glascock, et al, 2002; Yobaccio, et al, 1995). Also, underpricing and inflation adjusted return are strongly related (0.695).

Table 2.8 1: Correlation Matrix on Independent Variables

	UP	BEE	D/E	Dividend	SEO	InflAdjR	TotalA	MBVR	ROA
UP	1.0000								
BEE	0.3671	1.0000							
D/E	0.0295	-0.0101	1.0000						
Dividend	0.3885	0.0271	-0.7849	1.0000					
SEO	0.4107	-0.0150	0.2678	-0.4755	1.0000				
InflAdjR	0.4171	-0.0255	0.2310	-0.6742	0.4212	1.0000			
TotalA	-0.0116	0.0068	0.2011	-0.4592	0.0553	0.0591	1.0000		
MBVR	0.1631	0.0059	-0.5300	0.3761	-0.3964	0.2305	-0.5890	1.0000	
ROA	0.3918	-0.0260	0.2302	-0.6519	0.4707	0.9878	-0.0300	0.2676	1.0000

NOTE: This Table displays the pairwise Pearson correlation coefficients between the independent variables. The symbol * indicates that the correlation is different from 0 at the significance level of 5%.

2.6.3. Hausman Test: Model Choice

Next, the study adopted the Hausman test to confirm the endogenous regressors (predictor variables) in the regression model. This revealed that the Prob(chi2) is not statistically significant; hence, Hausman test accepts the random effect. Standard errors are in parentheses: *** $p<0.01$, ** $p<0.05$, * $p<0.1$. The study understands that though firm-specific effects are common in non-experimental studies, they are also observed in experimental studies (Le and Phan, 2017). When such conditions are met, it is more beneficial to employ firm-level Random Effects (RE) and Fixed Effects (FE) models than to utilize pooled OLS only since they account for specific error components. The study adopted the Hausman specification test with a view to selecting the most suitable regression model for a study of this nature: RE or FE. After controlling for multicollinearity in the model, Hausman test accepts random effect.

2.6.3. BEE and SEO Underpricing using OLS Regression, Firm level-Fixed and Random Effects

In Table 2.9.1, an increase in a unit of inflation-adjusted return leads to less underpricing by 36.8 percent However, the total asset explains the improvement in underpricing. Also, the *MBVR* and *ROA* has a positive and significant relationship with underpricing. The scorecard calculation's direct measure of BEE is next to zero and significant; meaning that a rise in compliance leads to a rise in underpricing, which is consistent with Hypothesis 1A. These findings, according to two

recent studies (Prasad et al, 2006; and Ariff, et al., 2007), imply that when a government sets out to regulate (through policies) for the greater good, it seems to end up affecting the market in ways that promote overall higher first-day underpricing. Apart from this, not only are governmental-linked firms underpriced, but the magnitude of the underpricing gap between the two groups is higher when compared to non-governmental-linked firms. These aforementioned studies have already provided compelling evidence in favor of BEE, a government policy that is being tested in this study.

It also presents a positive and significant effect of BEE on underpricing in column (2) using fixed effect. Consistent with the extant findings (Marcato, et al., 2018; and Tian, 2011), and for REITs, the high underpricing of their SEOs is with a view to encouraging more SEOs; however, they (REITs) continue to leave more money on the table (a loss). It remains worrisome in being able to rationalize why issuers willingly "leave money on the table" (Saengchote and Charoenpanich, 2021). For investors, it is a gain for them; the high underpricing of REITs SEOs increases demand due to the share prices being offered at their (investors) 'preferred/expected values'. In a case as this, policy makers (government) can ensure market efficiency by increasing incentives for BEE compliant REITs. The reasoning here is that targets/objectives (underpinning principles of the BEE) of government has to be sustained opening up a win-win situation between REITs and investors. Apart from this, debt-equity has a significant negative effect on underpricing. Similarly, the inflation adjusted return reduces the underpricing. The *SIZE, TOTALASSETS, ROA* all have a positive significant effect on the underpricing using the fixed-effect approach.

Table 2.9 1 Relationship between BEE Compliance on SEO Underpricing using OLS, Firm-Fixed and Random Effects

	(1)	(2)	(3)
	Pool OLS	Fixed effect	Random effect
Variables	Underpricing	Underpricing	Underpricing
BEE	0.391**	0.110**	0.00365***
	(0.0420)	(0.0515)	(0.000118)
Debt Equity	-0.120***	-0.147***	-0.00120
	(0.0165)	(0.0211)	(0.0718)
Dividend	0.0120	-0.0239	0.00514***
	(0.0144)	(0.0225)	(5.00e-05)
SEO (or SIZE)	0.367***	0.254***	0.000514**
	(0.0447)	(0.0703)	(0.000252)
Inflation adjusted return	-0.368***	-0.368***	-0.00334
	(0.0209)	(0.0215)	(0.187)
Total Asset	28.77***	20.32***	(5.00e-05)
	(1.461)	(4.243)	0.512***

MBVR	0.219**	-0.134	-0.00323
	(0.101)	(0.196)	(1.129)
Return On Asset	0.547***	0.563***	0.00166
	(0.0297)	(0.0315)	(0.305)
Constant	-4.520***	-5.659***	4.002
	(1.349)	(1.490)	(10.07)
Observations	170	170	170
R-squared	0.957	0.959	0.791
sigma_u		1.581	0.265
sigma_e		0.0654	0.000468
Rho		0.998	1

NOTE: Above also presents the estimation of the impact of BEE compliance on SEO underpricing using pooled OLS, fixed and random effects. Using ordinary least square (OLS), column (1) shows that BEE has a positive relationship with underpricing. Column (2) also shows that BEE has a positive impact on underpricing using fixed effect approach. The random effect estimation in column (3) presents that increase in BEE is likely to increase in underpricing.

2.6.5. Robustness Test

Table 2.10.1 reports the robustness test regression results for 'SEO Underpricing and other control variables using South African listed REITs' data over the period 2010 – 2020; 2020 is included to test for the effect of the pandemic. The variable (highly compliant BEE) is dummied and set equal to one if the REIT is compliant, and zero otherwise. The standard errors reported in parentheses are adjusted for heteroscedasticity. All three estimations have significant coefficients (at the 5% significance level) and indicate that regardless of their degree of compliance, REITs with high compliance considerably underprice their SEO. Therefore, the study rejected hypothesis 1B. When we estimate the average marginal effect of SEO underpricing for highly compliant BEE REITs, the study finds that each additional one-unit rise in BEE compliance adds a 3.6% chance of SEO underpricing. This added effect of the year 2020 is not negligible when considering that the SEO underpricing in South African REITs is highly underpriced; despite the drastic fall in the number of SEOs, significant underpricing is observed. The results show that highly-compliant BEE REITs has a positive and significant effect on the underpricing on all the columns. Interestingly, Column (2) and (3) like (1) display that BEE has a positive significant effect on SEO underpricing. With this, REITs with high compliance are still faced with leaving more money on the table''- the study concludes that SEO underpricing is 'not good' for South African REITs.

Table 2.11 1: Robustness Test

	(1)	(2)	(3)
	Pool OLS	Fixed effect	Random effect
Variables	Underpricing	Underpricing	Underpricing

Highly Compliant BEE REITs (1/0)	0.231**	0.418***	0.0301***
	(0.0391)	-0.00323	(0.00141)
Debt Equity	-0.319***	0.129**	-0.226***
	(0.1710)	(0.1406)	(0.0371)
Dividend	0.056**	0.317**	0.403***
	(0.0311)	(0.3102)	(0.0932)
SEO (or SIZE)	-0.151***	-0.0271***	-0.0374**
	(0.0525)	(0.0310)	(0.0501)
Inflation adjusted return	-0.0179***	-0.0120***	-0.0151***
	(0.0513)	(0.2318)	(0.2014)
Total Asset	0.421***	0.414***	0.491***
	(0.0465)	(0.0385)	(0.0411)
MBVR	-0.251***	-0.314***	-0.329***
	(0.171)	(0.153)	(0.1921)
Return On Asset	19.24***	18.04***	19.71***
	(0.316)	(0.192)	(0.310)
Constant	-3.311***	-5.301***	3.212
	(1.630)	(2.181)	(2.017)
Obs	91	91	91
R^2	0.913	0.910	0.971
sigma_u		1.301	0.410
sigma_e		0.0417	0.000327
Rho		0.931	1

NOTE: Above also presents the estimation of the impact of BEE compliance on SEO underpricing using pooled OLS, fixed and random effects. Using ordinary least square (OLS), column (1) shows that BEE has a positive relationship with underpricing. Column (2) also shows that BEE has a positive impact on underpricing using fixed effect approach. The random effect estimation in column (3) presents that increase in BEE is likely to increase in underpricing.

2.7. Conclusions

This analysis demonstrates for the first time a link between REIT SEO underpricing and the BEE phenomenon. The particular institutional context of South Africa serves as the basis for a natural experiment. It enables the examination of whether underpricing is useful or detrimental to the operation and efficiency of markets, and it facilitates the disclosure of information in the South African REIT market. The study gives empirical evidence for a positive association between REIT SEO underpricing and BEE compliance. This supports Prasad et al. (2006) and Ariff, Prasad, and Vozikis (2007) in that they confirm that government ultimately benefits from SEOs of compliant firms in which aids the implementation of both economic and political objectives. REITs on the other hand leave more money on the table; hence, the high rate of underpricing is not in their best interests. Government can therefore assist compliant firms with incentives including grants and incentives; state facilitated lending; project financing; venture capital. With these, BEE compliant firms will need not have concerns about the extent of underpricing with Government's intervention. Additionally, the study examines the impact of BEE on two levels in thestudy, namely high and low BEE compliance.

Then, the study observes that more REITs are not complying with the entirety of BEE requirements. Additionally, it is worrisome that such firms within this category or subgroup are large firms with a high market capitalization; their perceived 'unconcerned' attitude appears to be induced by their unwillingness to spend additional significant monies on skills development, economic development, and socioeconomic development, particularly during this period of risky economic climate (COVID-19). The work contributes significantly to the field of REIT SEOs in emerging markets. It contributes significantly to the knowledge of the impact of BEE compliance by REITs. The study finds significant evidence of 'more money left on the table'. Additionally, the study on REITs SEOs bolsters the view that government policy objectives and action have an effect on firms' equity market capitalization strategy. The findings imply critical ramifications for government, policymakers, and practitioners. While the huge discount on their SEOs is designed to increase stock purchase, they (REITs) continue to lose money as a result of this strategy (a loss). For investors, this is a win-situation because the significant underpricing of REITs SEOs stimulates demand by offering shares at their (investors') "preferred/expected values." To achieve market efficiency in this scenario, government (policymakers) can increase incentives for all BEE-compliant REITs. Because the government's targets/objectives (as well as the underlying ideas of BEE) can be maintained, a win-win scenario for REITs and investors should be established. Specifically, this paper also presents practical implications for the South African government, REITs and relevant stakeholders within the REITs and general stock market. Government can integrate and promote its BEE initiatives effectively with these stakeholders including investors; eliminating the barrier among BEE stakeholders is one way to do this.

Additionally, determining if a new or improved approach is needed to increase the longevity, contribution to the economy, and sustainability of the BEE policy should be done by measuring their success. It could be premature to consider an exit plan for the BEE policy owing to the concerns on its effectiveness and politicization, but considering the widening inequity gap (Webster and Francis, 2019), it might be worthwhile to see if it is worth pursuing. From the results, SEOs of complaint REITs are highly underpriced regardless of the level of compliance; with these, it is important and crucial for government to engage increase incentives for compliant firms and ensure BEE goals and objectives are reassessed to verify that goals have been reached as it had been documented that investors' sentiments towards the BEE policy appears to be worrisome (Dreyer, et al, 2021). Consistent with Akinsomi, et al (2016), results from their study documented

several implications for government agencies by noting a need to re-calibrate the BEE policy. Further research can be conducted to determine whether alternative measures, such as the political connections of underwriters and board members, would generate different results. For future research, it would be pertinent to examine influencing factors bothering on underpricing of BEE compliant SEOs of South African (emerging market) REITs; an example is to examine environmental, social and governance (ESG) factors.

CHAPTER THREE

DO INTERNALLY MANAGED REITS MANAGE EARNINGS MORE THAN EXTERNALLY MANAGED REITS?

3.1. Introduction

The perceived manipulation of financial sheets within the real estate investment trusts sector has become a topical issue. Zhu, Ong and Yeo (2010) opined that it appears Real Estate Investment Trust (REITs) managers engage in activities such as earnings management; the paper equally argued that this tends to be a possibility because of the heavy reliance on finance from external sources in funding their investment and expansions. In similar vein, Adams, Hayunga and Rasmussen (2017) recently corroborated this by stating that there appears to be a possibility of REITs engaging in financial sheet manipulations owing to the fact that such firms needed to file their financial statements with their respective securities regulatory bodies. Although the real estate industry has seen a lot of progress in securitized real estate, REITs do not have sufficient data to provide both corporate and individual investors with a clear understanding of their investment risk (REITs) (Zhu, Ong & Yeo, 2010). These market microstructure distinctions include dividend pay-out obligation and restriction on property investment. REITs cannot support investment activities by internally generated profits, hence this is unwanted for them (Deng & Ong, 2018). Indeed, the REIT sector has been perceived as more transparent than other businesses because of its rigorous regulatory requirements, physical assets, and highly predictable income flow (Schrand, et al, 2021; Olanrele, et al, 2015; Newell and Osmadi, 2009; Morri and Beretta, 2008; Joseph, et al, 2006). Existing literature (Zhu et al, 2010; Deng and Ong, 2014; Seguin, 2016) noted that while the perceived transparency within the REITs sector ought to ameliorate potential engagement in earnings management; yet, there are also wide reports of investor concerns with respect to low dividend yields; these aforementioned studies equally reported that managers tend to attempt to manipulate the financial sheets in favour of external sources of financing. Chiang (2015) had reported that dividend yields of REITs in emerging (especially African) markets appear not to have performed comparatively with their counterparts in developed markets.

Earnings management are economic acts used by managers to conceal the actual financial performance of their company. Various strategies, such as delaying revenue recognition, boosting or reducing discretionary spending, and disposing of assets, are able to influence the earnings of REITs. the study predicts that in times of increased SEO activities of REITs, they will engage in

microstructure-induced earnings management practices to reduce the cost of capital. The study therefore asks the research question: Do Internally Managed REITs Manage Earnings more than Externally Managed REITs? - This is the question the study wants to address in this article. If earnings management techniques in the REITs sector are significantly curtailed, or perhaps eliminated, policymakers will do well to encourage businesses to seek debt funds; by implication, buyers will gain in two distinct ways: their dividend yields will increase and management will be less likely to deceive them.

REITs who manipulate financial results in a bid to create cash flow, those with frequent share price announcement (SEOs), and those with an inactive corporate governance structure, high leverage are all pointers to perceived engagement in earnings management (Cohen and Zarowin, 2010; Ghosh, and Sirmans, 2006). Further, most issuers would have run out of cash by the year after the SEO had they not received the offer revenues (DeAngelo et al, 2010). Ling and Wu (2013) observe that firms' cost of equity is lower prior to SEO filing when there is an increase in liquidity risk. Like with all REITs, there is a larger amount of liquidity risk for REITs than common stocks, and so REITs' desire to manage their liquidity risk is stronger (Deng and Ong, 2018). Moreover, earlier studies found that firms will sell expensive shares by means of earnings manipulation (the behavioral hypothesis). As SEO firms have been discovered to engage in genuine earnings management in post-SEO firm performance (Kothari, et al, 2016; Deng and Ong, 2014; Yang, et al, 2013); this means that in the aftermath of SEOs, the long-term trend of poor post-SEO firm performance will be more profound than post-SEO firm manipulation (Cohen and Zarowin 2010; Rangan 1998).

Earnings management efforts over accrual-based manipulation are favored among REIT managers because of a major reason; a reason being that REIT managers are also limited by the dual performance measurement by net income and money from operations prior to enhancing their compensation by actions like merger and acquisition (Zainudin, et al, 2019; Deng and Ong, 2018). Because REITs with low operating cash flow are less likely to seek external funding, their motivation to control net operating income is greater than for other companies. In terms of REIT exposure to SEO timing, the study has just begun to focus on SEO timings in connection to the degree of earnings management.

In light of South Africa's recent financial scandals [16] Holtzblatt, et al, 2020; Jooste, 2011), this study contributes to investigating possible instances of earnings manipulation among REITs on

[16] fraudulent financial reporting; Corporate malfeasance; Audit Scandals

the Johannesburg Stock Exchange. These incidents call into doubt the competency and ethics of firm managers which, in turn, drives investors and future investors to question the financial statements that they receive. For instance, the South African Institute of Chartered Accountants started an inquiry on November 2, 2017 to investigate the conduct of a handful of troubled accountants and managers.

REITs being examined in this paper is intended to expand the understanding of the prevalence and degree of earnings management activities in South African REITs. Of interest is the specific relationship between management structures of REITs and instances of earnings management in the South African market. When ownership and management are separated, the study may expect alternative decisions including differing degrees of earnings management to emerge (Ambrose & Linneman, 2001). Based on the pioneering evidence of Jensen & Meckling (1976), the study assumes that REITs like other firms are vulnerable to earnings management. Several scholars have examined the influence of REIT ownership/management structures on REIT performance to the exclusion of earnings management.

According to An, et al. (2016), REITs have two basic types of management structures: internal and external; managers who work for a REIT but are governed by the REIT's authorities have control over the structure. REITs use people in a variety of roles, including asset management, acquisition, and advising. The paper also noted that REITs with external management have a more marked control and ownership split. An intermediary asset management firm engaged by the REIT manages the day-to-day property management, financial and operational duties. As a result, the REIT firm pays a variety of fees to the managers; it is possible to charge a flat fee or an incentive fee, both of which are based on a percentage of the fund's assets under management (AUM). Ooi (2009) for instance documented that compensation paid to externally managed REITs managers must be scrutinized due to the underwhelming performance of these firms in the United States and the looming global financial crisis..

REITs have historically behaved like mutual funds in the United States (US), with the exception of the ability to trade. REITs were required to engage advisers who served as managers, selecting properties and implementing investment plans inherent with tendencies to manage earnings on behalf of the REIT. In contrast to other passive investments such as bonds and shares, property investments necessitate the employment of property managers, which is why numerous REITs noticed inefficiencies and a conflict of interest among advisors/REIT managers and shareholders in the late 1980s (Wei et al. 1995; Ambrose & Linneman, 2001). REITs were permitted to engage

in self-advisory and management activities following a modification in the legislation in 1986. REITs grew rapidly in the 1990s, and this sparked several academic studies on the organizational management structure of REITs and its effect on REIT performance. In spite of the argument for REITs being internally rather than externally managed, several REIT regimes have embraced externally managed structures since the US first implemented it. Most REITs, particularly in Asia, have an externally managed structure, either by default or as a necessity, indicating that externally managed REITs have certain advantages. Due to the increasing use of REITs as a form of indirect property market investment; and REITs' increasing appetite for expansion (mergers and acquisition) including other reasons, it is critical to examine how their management styles/structure and corporate governance influences the degree of earnings management.

It is possible to assume that the individuals assigned with preparing financial statements are conflicted (Ronen & Yaari, 2008; Burgstahler, et al, 2006) which increases the likelihood that the financial statements are incomplete and inaccurate. The statistical models presented in this paper use data obtained from the Stock Exchange News Service (SENS) and IRESS Expert database to first examine if there are financial sheet manipulations around SEOs; and subsequently, the degree of earnings management (if any) around the different management structures of real estate investment trusts (REITs) listed on the Johannesburg Stock Exchange. The study contributes to the REIT literature in two ways. First, it provides novel evidence on earnings management behavior of the different management structures around SEOs in the REITs sector. Second, it extends this line of inquiry into the REIT market in a developing country. Also, because the legislative requirement of a 90% dividend payout is often considered to lessen agency problems and hence minimize earnings management activities in REITs, the study of earnings management in REITs is extremely significant; according to Boshoff and Bredell (2013), the new tax treatment allows a SA REIT to deduct all distributions made to shareholders as a cost. As a result, if all distributable earnings are distributed to shareholders, they will not be taxed. SA REIT is exempt from Capital Gains Tax (CGT) on property transactions. When purchasing or selling REIT shares, SA REIT shareholders are not required to pay any Security Transfer Tax (STC). Investors will receive gross payments that are not subject to the 15% dividend tax. Their dividends, however, will be included in their taxable income. By implication, this allows investors to use debt efficiently to fund the acquisition of their REIT investment on a pre-tax basis. If the investment in a SA REIT is part of a pension, provident, or preservation fund, no tax is payable; nevertheless, foreign shareholders of a SA REIT must pay 15% of their dividends or the double tax agreement

may apply; in all, REITs listing requirements limits the debt to gross asset value for SA REITs. Also, the insights will assist investors in gaining from management being less able to deceive them in addition to greater dividend rates. The results should be of interest to both investors and governments who hope for real estate capital markets to work as efficiently as possible. The remainder of the paper is framed as follows. The following section conducts a review of pertinent literature. The next section presents the testable hypotheses and data sources; this is inherent with "Measuring Financial Results Manipulation" which describes ways to quantify prevalence and degree of financial manipulation. The subsequent section "Empirical Results" summarizes and interprets the empirical findings from univariate and multivariate regression analyses. The last section is referred to as the "Conclusion."

3.2. Literature Review

3.2.1. Earnings Management

Financial reporting enables managers to keep stakeholders informed about their firm's performance. Financial reporting, in an ideal world, would assist the best-performing enterprises in the economy in differentiating themselves from the poor performers and would promote resource allocation and stewardship by stakeholders (Healy and Wahlen 1999). Managers may leverage their company experience to enhance the usefulness of financial statements as a communication tool with potential investors and creditors. When management is needed to select between alternative accounting procedures for reporting the same transactions, judgment is required. Additionally, management must apply judgment when establishing provisions for future liabilities like as research and development expenses, bad loan losses, or asset impairments. Additionally, managers might employ smooth earnings trends to indicate to investors their firm's higher profits potential (Tan & Jamal, 2005; Graham et al., 2005). Similarly, Tucker & Zarrowin (2006) demonstrate experimentally that managers' use of financial reporting discretion has the impact of disclosing additional information about businesses' future earnings and cash flows. As Scott (1997) previously said, managers may leverage their financial reporting options to provide extra information to consumers about the firm's future expectations. Despite this good aspect of managers' judgment, it also provides managers with a chance to influence financial statement users in ways that benefit them the best. Earnings management is the deliberate falsification of earnings that results in the bottom line figures being different than they would have been in the absence of any manipulation (Mohamram, 2003).

According to these definitions, earnings management is a deliberate intervention by an organization's management in the financial reporting process with the intent of influencing financial report users in order to obtain an advantage for themselves or the firm. By implication, this is the practice of accounting judgment, commonly known as accruals management. In the case of REITs specific accruals, they are bound by a minimum dividend payment policy (at least 90% of taxable income); as a result, REITs pay out a substantially higher percentage of their earnings than conventional corporations (Ambrose & Bian, 2010). This might mean that REITs are more likely to have insufficient financial slack, which can be useful when external funding is expensive (Ferguson & Stevenson, 2014). Equity financing, for example, may be expensive due to the asymmetric knowledge problem identified by Myers and Majluf (1984). Furthermore, debt financing may be unfavorable owing to risk-shifting or debt overhang issues. Thus, in order to avoid being deprived of financial slack, REITs may benefit from managing their earnings lower; this required payout policy, on the other hand, forces REITs to return to the capital market on a regular basis to raise external cash. This procedure gives foreign investors more opportunity to gather information (Ambrose & Bian, 2010). Existing equity investors, according to Easterbrook (1984), face the challenge of collective action and frequently impose insufficient scrutiny on management. Thus, raising fresh capital on a regular basis exposes managers' performance to regular examination from new investors, who are not subject to the collective action problem. This ongoing review should encourage managers to eliminate organizational inefficiencies in order to get the best price for their new equipment. As a result, more important and impactful information should be imbedded in stock trading, improving REIT organizational efficiency.

When management's participation in the financial reporting process has an effect on total accruals in a way that is not consistent with regular economic activity and conditions, abnormal accruals occur. Hoogendoorn (2011) distinguishes two types of accrual management: The first category encompasses the application of earnings management via accounting policies or procedures. This refers to the selections made about depreciation methodologies and inventory valuation, among other things. Managers might exercise discretion by selecting or adjusting accounting methods to benefit themselves or their organization. The second group includes the estimations that managers must make throughout the financial reporting process. This comprises time and cost estimates made in a variety of methods throughout the reporting process. Later on, it will become apparent that the introduction of fair value provides a significant potential for earnings management via

estimations. Managers have discretion over the techniques and estimations used to calculate earnings management, as well as the timing of their recognition (Xiong, 2006).

Financial fraud is the purposeful distortion or omission of material facts of accounting data that is misleading and, when combined with all available information, causes the reader to change or adjust his or her judgment or choice (National Association of Certified Fraud Examiners, 1993; Dechow and Skinner, 2000).

3.2.2. REITs Seasoned Equity Offering

The literature on REITs deals extensively with seasoned equity offers. The market reaction to security issue announcement is well documented. Similar to regular stock trading, in the pecking order theory analysis, a strong negative reaction is discovered. Using data from 1970 to 1985, Howe and Shilling (1988) found that, for every 1 percent increase in equity issues, there was a 0.6 percent decrease in the stock price, whereas for every 1 percent increase in debt offerings, there was a 1.3 percent increase in the stock price. REITs stock issuance had a considerable negative market reaction in the 1990s according to a paper published in 2000 by Ghosh et al. (2000). Equity offers alongside another thread of literature focused on capital structure transformation are found in REIT literature. Researchers in the field of REITs have mostly been focused on analyzing the signaling impacts of equity and debt offerings of REITs since these properties minimize the impact of trade-off and pecking order rationales (Howe and Shilling 1988; Brown and Riddiough, 2003). A recent body of empirical research has found that REITs adopt target debt ratios in general in the securities market. A group of researchers (Ooi et al, 2010) examines the timing of REIT IPOs and debt-to-equity ratios. They argue that REITs timing the market using debt-to-asset requirements that are more generic in nature. Studies by Boudry et al. (2010) and Ghosh et al. (2011) found that the market timing theory offers considerable support for the market-timing decisions of REITs, as well.

There is a lack of study on REIT SEO price, according to studies. According to Ghosh et al. (2000), ownership concentration, offering size, as well as underwriter reputation all have a significant role in REIT SEO underpricing (Ghosh et al. 2000). Investors may demand further discounting if the investment has an abnormally high placement cost and value uncertainty, according to other researchers. There is considerable evidence of behavioral trading in the real estate market when REIT short-selling and IPO returns are included (Blau et al. 2011). There is a surprising lack of research on the impact of work-based income on the seasoned equity issuance and pricing procedures of real estate investment trusts. Some uncertainties persist despite the fact that

experienced equity offerings have had a substantial influence. Recent research demonstrates that many securities issuers engage in substantial actual investment activity surrounding stock offerings, demonstrating that the assets of the company have a significant impact in determining the amount of investment capital required. Knowing how the manipulation of real earnings impacts decision-making surrounding the issuance of seasoned equity securities or how this may effect expected stock returns would be intriguing.

3.2.3. Performance of REITs Management Structures

Real estate investment trusts (REITs) can be classified as either internally or externally managed. When REITs were first proposed, they were intended to be passive investment vehicles similar to mutual funds, except that they would have trading limits (Ambrose & Linneman, 2001). The paper noted that REITs were required to engage 'managers who would sit on boards,' who performed tasks comparable to those of mutual fund portfolio managers; apart from this, REITs investment managers were also responsible for the selection of assets and the implementation of investing plans. Real estate investments, unlike stock or bond portfolios, necessitate active management to lease, operate, and finance the properties (Baum & Hartzell, 2012). In same vein, REITs also employed 'managers' who were responsible for the day-to-day management of the property. A number of REITs in the late 1980s identified the inherent conflicts of interest between these advisors/managers and REIT shareholders as a result of fee structures that were not linked to REIT performance (Chan et al., 2003).

According to Hardin III, et al. (2009), evidence on the performance of REITs is affected by their external versus internal management structures. The paper noted that both internal and external management structures were demonstrably superior across each time period at a much reduced risk. For instance, it was established that the external manager A-REIT series outperformed the stock market in each time period, particularly during the global financial crisis. Also, three A-REITs that were part of the external management series had minimal gearing and no international property in their portfolios; therefore, there was some overlap between these variables and their proven performance. Ambrose & Linneman (2001) continued to note that growth in the real estate market was hampered by the tensions between advisors/managers and REIT shareholders. Traditional developers/operators risk alienating control of their properties when they converted to REIT status without the ability to actively manage their assets. In 1986, the Internal Revenue Service issued private letter judgments permitting REITs to assume responsibility for selecting investment properties and managing their assets, allowing them to become ‘self-advised' and 'self-

managed'. After Kimco REIT's IPO in 1991, the need of addressing these conflicts became widely understood. There were two competing organizational structures in REITs during this period of fast growth, which is an interesting subject to look at.

3.2.4. Earnings Management, REITs and SEOs

According to research on businesses that issue SEOs, reported earnings of such businesses are exceptionally high during the SEO period, which is due to abnormally large accruals. If management opt to issue shares far in advance of the offering announcement, they will manage profits in advance in order to affect investor expectations about the business. Dechow et al. (1996) argue that one of the primary motivations for manipulating results is to get low-cost external funding. With fabricated financial statistics, issuers might obtain an edge in negotiations with underwriters on the terms under which securities are offered. Simultaneously, a higher price helps the company since it allows the issuer to earn a greater profit from the offers. There will be less dilution of ownership as a result of the additional shares for the same amount of money collected. Despite the potential benefits of overstating earnings, earnings management may incur expenses. According to Dechow et al. (1996), businesses recognized by the Securities and Exchange Commission as earnings manipulators suffer a higher cost of capital. Additionally, qualifying audit findings or litigation may have a detrimental effect on the firm's image and reputation. As a result, it is reasonable to expect managers to make every effort to control financial performance. It's logical to anticipate that profits manipulation will continue for several quarters, as this will make the manipulation more seamless and difficult to detect. As a result, the quarters immediately before an offering announcement are the most sensitive to earnings management (Rangan, 1998).

The studies mentioned above are primarily focused on U.S. REITs, and the majority of them employ real earnings management (REM) or manipulation as the metric for measuring earnings management. With market capitalization forecast to reach about US$600 billion by 2025 (Ooi, Newell, & Sing, 2006), REITs are becoming more and more popular in South Africa. This study, which uses the discretionary accruals method, aims to determine the prevalence of earnings management activities in South African REITs. The use of discretionary accruals in this study to detect the earnings management activities in REITs is due to most of the previous studies are focus on real activities of earnings management (Deng & Ong, 2018; Edelstein et al., 2008). It is currently not common practice to employ discretionary accruals to monitor profits management, particularly in South African REITs or other listed firms. When adopting the discretionary accruals

approach, managers have the freedom to inflate earnings figures through accounting manipulation without engaging in actual operations fraud, such as cutting back on R&D or lowering the cost of goods sold (COGS), in order to boost the net income figure. On the other hand, the National Association of Real Estate Investment Trust (NAREIT) advises using the return on assets and funds from operations, industry-specific indicators that offers another way to evaluate the success of REITs (Anglin et al., 2012). In contrast to U.S. REITs, however, the data on funds from operations in South African REITs is sparse and uncommon. Additionally, because the fund from operations estimate is not reviewed by the auditor, utilizing manipulation of FFO to assess earnings management is less accurate than using discretionary accruals and real activities management.

To preserve their tax-exempt status, REITs must distribute a significant portion of their taxable revenue and hence rely significantly on external funding to support their investments and growth. As a result, REITs must access the financial markets and raise cash more often than other types of securities. REITs undergo increased scrutiny from different capital market players because of their frequency of SEO issuance. This feature is likely to have an effect on the way REIT managers manage their earnings. Dechow et al. (1996) argue that managers of companies that need regular external funding would declare profits cautiously in order to establish a favorable market reputation that would benefit future offers. As frequently used, two or more public offerings over the course of two years qualify as 'frequent issuers.' when offers are made, managers may have previously predicted the next offering in pipeline. This expectation is believed to alter managers' incentives to manipulate profits and the degree to which earnings manipulation occurs (Shivakumar 2000). Although it is foreseeable that another offering will follow shortly after the present one, there will be a cushion built into profits management, since excessive financial manipulation may tarnish the firm's image and, as a consequence, result in increased financing costs for future offers. As mentioned previously, the REIT business is characterized by regular SEOs.

The existing literature has mostly focused on whether firms manipulate earnings around the issuance window, as well as the accounting and stock market repercussions of these actions (Rangan, 1998 & Teoh et al., 1998). Because of the empirical evidence that SEOs are accompanied with negative stock returns and bad profits performance, this research is leaning towards the conclusion that high earnings management in anticipation of SEOs occurs on occasion, which is then overturned (e.g., Teoh et al., 1998; Rangan, 1998; Shivakumar, 2000). SEO corporations have a tendency to have positive anomalous accruals (i.e., upwardly manipulated reported profits)

during the year preceding the SEO, which indicates both earnings reversals and poor stock performance in the following year. The findings of the article show that enterprises manipulate earnings upward around SEOs, and that the stock market is mislead by the upwardly managed earnings, temporarily overvaluing issuing companies and then being disappointed by the forecasted earnings declines of such companies. Additionally, Teoh et al. (1998) found that SEO issuers that move profits upwards more (i.e., have larger positive anomalous accruals) had lower post-event stock returns as well as weaker earnings following the event.

For the first time, DuCharme et al (2004) offer a legal viewpoint on the study of SEOs. Settlement amounts are directly linked to irregular accruals for SEOs who subsequently get sued. Furthermore, post-SEO reversals are more dramatic for SEOs who have been sued, and their post-SEO stock returns are lower. Post-SEO litigation, they say, is driven by earnings manipulation. Accrual earnings management is frequent in SEOs and is associated to post-event litigation, according to these studies. Whether or not the stock market is misled, on the other hand, is the subject of much controversy.

Indeed, it appears the EM practice attempts to explain the concerns surrounding stock pricing during the event window and period (SEOs); much more importantly, concerns on what motivates managers of firms in engaging in EM practice is fast becoming topical. Yoon and Miller (2002) investigated 249 Korean SEOs by firms between 1995 and 1997; this was done to estimate the level of manipulation by firm managers on earnings/returns prior to the event period. At this point, the evidence revealed that the Korean firms which contemplated SEOs as a means of raising funds managed their earnings a year prior the event window; it is assumed that the firms' financial performance had been poor. The impact of earnings management (EM) appears to have become the mainstay since the advent of bankruptcies in the financial and stock sector. It is assumed that regulators and stakeholders (industry practitioners specifically) deliberately manipulate financial reports (accruals/earnings/returns) in a bid to "make the books look good" to potential investors. Bortoluzzo, Sheng and Gomes (2016) had recently examined the impact of EM; findings revealed that firm managers appeared to have influenced the amount of earnings in the financial reports by imputing the loan loss provisions. Information veracity of financial reports is increasingly becoming of utmost concern as stakeholders tend to engage in returns/income smoothing in order to convey a consistent image of good performance to the potential investors. As such, the EM phenomenon merits attention in a sector that appears to be gaining keen interest; the real estate investment sector.

3.3. Theoretical Underpinnings and Earnings Management

Evidence suggests that a company's size, leverage, and return on asset (ROA) all have a role in how it manipulates earnings (Iturriaga and Hoffmann, 2005; Hessayri and Saihi, 2015; Heninger, 2001; Daniel et al., 2008; Siregar and Utama, 2008; Sun and Rath, 2009; Jelinek, 2007; Chung et al., 2005). This shows that both accrual-based and real activity-based approaches of managing earnings are indeed dictated by these influencing variables. Based on their Positive Theory, Watts and Zimmerman (1986) presented three main assumptions. Firms internal contractual motivations for earnings management is addressed in the theory. Incentives for earnings management are based on set contracts that utilize accounting figures, according to the assumptions. According to the bonus plan theory, the purpose of accounting decisions in management pay plans is to provide performance bonuses (Xiong, 2006). To balance the interests of management and shareholders, managers are compensated in addition to their normal pay according to their performance. When companies evaluate managers' performance, they typically look at specific accounting data. Incentives for managers are therefore there so that they may identify the right accounting techniques and apply judgment over accounting estimations to help them get raises (Xiong, 2006). Debt covenant hypothesis claims that debt covenants lead to earnings management. In order to make sure they can fulfill their debt obligations, creditors put limits on the payment of dividends, share repurchases, and new debt issuance for a firm's creditors (Xiong, 2006). Management is incentivized to ensure that every criterion is satisfied by manipulating accounting figures. In the most recent studies on earnings management, researchers have taken a back seat to capital market motivations as an explanation of managerial opportunism (Xiong 2006). For example, Burghstahler and Dichev (1997) disregarded explicit contract earnings management approaches. It was argued that contracts such as this are not frequent enough to explain the widespread avoidance of losses and earnings reductions.

3.3.1. Earnings Management and Firm Characteristics

3.3.1.1. Firm Size and Earnings Management

The effect of firm size on earnings management is likely to be negative. This is because larger REIT firms are more likely to have strong internal controls and better auditors who can effectively mitigate earnings management. Firms with a higher revenue can also be audited by large audit firms with auditors who have a more extensive track record. This means the potential for earnings management is much reduced. Major REITs may also be more concerned about their public image, which could discourage them from attempting to manipulate the company's results (Kim et al.,

2003; Lemma et al., 2013). Lemma et al. (2013) documented evidence on this noting that the risk of reputation damage from leaked financial information is greater for large firms, which is why they believe auditing firms would provide more valuable services. In addition, large firms are under increased scrutiny from analysts, investors, and regulators, which gives them an incentive to avoid earning management (Sun and Rath, 2009). Also, Kuo et al. (2014) contend that large firms face more intense examination by auditors and authorities, due to the size and nature of their operations.

Conversely, there is also evidence that firms with more 'Wall Street' scrutiny may face a greater incentive to manipulate earnings forecasts (Lemma et al., 2013). More importantly, the major firms in this sector have higher bargaining power with auditors, which makes it more likely that auditors will give an audit report that declares earnings management attempts have been successful for large customers (Nelson et al., 2002). Large firms have a greater current asset base, allowing them to use earnings management more effectively (Kim et al., 2003). Results are inconsistent with respect to the nature of the association. Firm size and earnings management are confusing in regards to one another according to Koh (2003). His further argument is that whereas huge corporations are subject to different regulatory and analyst scrutiny, this can diminish prospects for profit manipulation. When it comes to earnings management, those authors that focus on size find that there is a positive link (Moses, 1987; Rangan, 1998; Michaelson et al., 1995; Lemma et al., 2013), while authors who consider several other factors conclude that there is a negative relationship (Heninger, 2001; Sirat, 2012). Michaelson et al. (1995) found that large firms engaged in earnings management to appear less risky to investors, whereas smaller firms did not. To determine whether or whether accruals-based earnings management activities are present in the firms studied by Burgstahler and Dichev (1997), the paper investigated if these activities were present in US firms. Following losses or drops in earnings, larger and smaller firms boost earnings. In the paper earlier mentioned, they make the assumption that managers hide revenue and losses to minimize the financial impact on the company. According to Rangan (1998), U.S. firms have a significant relationship between accounting practices that value future revenues and the success of seasoned equity offerings. Additionally, the paper demonstrates that older and larger firms change current accruals in order to create the impression of greater earnings and higher profitability.

Lemma et al. (2013) claims that when firms face larger demands or are in a position to demand more from their auditors, they are more likely to employ earnings management strategies. Firms with a greater emphasis on internal control, an increased requirement for audit services, and a

lower trust in earnings find it more difficult to engage in accruals-based earnings management. Additionally, the constant pressure from markets and regulators, the expenses of monitoring, and reputational damage that are imposed on larger enterprises cause them to switch to real earnings management rather than using accrual-based earnings management. To confirm over 40 countries, the paper discover that the firm's earnings management has a favorable impact on its profits. Accrual-based earnings management is found to be negatively related in their research. Similarly, Anagnostopoulou and Tsekrekos (2016) discovered that American firms in general appear to be managing real earnings appropriately when they have a large size. Although accrual-based earnings management may be negatively related to firm size, the relationship is examined by Heninger (2001) for US client firms. According to the paper, the higher a firm's operating budget, the better their chances of acquiring excellent audit services from reputable auditing firms. There are fewer firms that engage in accruals-based earnings management behavior due to the fact that large firms get better audit services. This means that large firms with smaller profits tend to engage in more accruals-based earnings management.

Interestingly, the study also confirms the idea that smaller firms engage in higher levels of earnings management. Chen (2009) examined U.S. firms and discovered a negative correlation between firm size and the prevalence of earnings management. Firms that employ huge numbers of people have lower degrees of earnings management. Like this, Kuo et al. (2014) state that Chinese firms provide consistent results. In Siregar and Utama (2008), the paper claim that big firms do not accrue considerably more earnings opportunistically than smaller ones since they are more closely monitored by investors and regulators. When bigger firms are anticipated to be less likely to make opportunistic earnings management decisions, this means that the study should expect more modest earnings management behavior from smaller firms. There is a negative correlation between firm size and earnings management. This was demonstrated by Zamri et al. (2013) in their research, which concluded that bigger firms choose not to engage in earnings management, as they are ‘happy’ with their financial position. Although Llukani (2013) examined the relationship between accruals-based earnings management and firm size for Albanian firms, and found that there is no significant difference in earnings management practices of large and small firms; with this, the conclusions of the papers previously mentioned are quite different. As firms in the MENA region, Iran has higher levels of firm size, which in turn causes more earnings management since shareholders expect it. Results of an accruals-based earnings management strategy are inextricably linked to firm size. As was found in previous studies, many Jordanian firms remain constant

(Alzoubi, 2016). Charfeddine et al. (2013) also found that firms with earnings-based accruals had larger operations. Conversely, in contrast to Omid et al. (2012), firm size has a considerable negative effect on earnings-based accruals on companies listed on the Tehran Stock Exchange (TSE). In a study comparing MENA countries and emerging economies, Hessayri and Saihi (2015) suggest that as a result of them being subject to greater scrutiny by analysts, larger firms are less likely to engage in accruals-based earnings management. Also, the results of Abbadi et al. (2016) reveal that Jordanian firms using accruals-based earnings management have a negative correlation with firm size.

3.3.1.2. Debt/Equity Ratio (Leverage)

Higher leveraged firms may tend to manage earnings in order to prevent bond defaults (Lemma et al., 2013; Sun and Rath, 2009; Becker et al., 1998; Mohrman, 1996; DeAngelo et al., 1994; and Defond and Jimbalvo, 1991). A possible motivation for firms to engage in earnings management may exist since breaching debt covenants carries a penalty. Leverage has the opposite effect; Debt-dependent firms generally have constraints on how much they may spend (Jelinek, 2007). The paper contends that managers that attempt to restrict free cash flow use would pursue projects that provide value for shareholders while spending all of the discretionary funds on approved projects. Additionally, more stringent leverage requirements could minimize earnings management practices (Zamri et al., 2013; Jelinek, 2007; and Iturriaga and Hoffmann, 2005). DeAngelo et al. (1994) found that American firms that employ debt financing and debt covenants display management decisions meant to provide a more favorable view of the firm to creditors in order for creditors to be able to decrease their loan obligations. While Mohrman (1996) argues that accounting procedures that increase current income are likely to be adopted by firms with higher leverage in order to avoid debt covenant violations, this view is also supported by John, who posits that increased current income and accrual-based accounting will be favored by firms with higher leverage in order to dodge debt covenant violations.

As documented by Sercu et al. (2006), while the paper found a positive relationship between accruals-based earnings management and leverage, it also discovered that debt was heterogeneous, which means debt was viewed as more threatening for the firm based on the presence of earnings management. It appears that earnings management is associated to the amount of bank credit. Consequently, this shows that firms engage in a significant amount of earnings management activities surrounding bank debt, as banks are less ‘forgiving’ when compared to suppliers in terms

of their loans. The findings of Charitou et al. (2007) suggest that managers of struggling firms engage in earnings management techniques prior to filing for bankruptcy that include accrued revenue methods. Liu et al. (2010) examines whether US firms aim to minimize the cost of borrowing by managing their earnings before issuing SEOs which increase revenues. When all other things are controlled for, earnings management firms issue debt at a lower cost than firms that manage earnings only. Another possible explanation is that increased earnings results in more financial security for creditors, because the debt can be repaid. This is another reason why lenders will be more likely to grant loans. According to Lemma et al. (2013), levered firms avoid debt covenant violations by engaging in earnings management. With leverage and accruals-based and real activities-based earnings management, it is found that they have a beneficial relationship. In a study done by Chen et al. (2015), those with significant leverage have a higher chance of default, and CEOs of these firms engage in actual earnings management to draw attention away from the fact that they are putting money into the stock market. In a positive relationship, leverage correlates with effective use of financial metrics. While some studies show no differences between US-based firms and foreign-based firms, others show a consistent and constant outcome, as was observed by Kim et al. (2010) for US firms. The paper also shows that organizations using leverage are also more likely to engage in real earnings management. Real earnings management occurs at significantly greater levels in Europe for highly leveraged firms, according to a study by Doukakis (2014). Ke (2001) contends that while firms with larger debt levels face greater scrutiny by analysts, their financial management activities are therefore more constricted. Firms with high leverage, compared to those with low leverage, are significantly less likely to engage in earnings management that incorporates accruals-based methods. As for the other type of firm, the Gopalakrishnan study (1994) compares US firms and shows that levered firms choose accounting practices that increase net income over those that do not.

Financial institutions' assistance helps firms by helping them make more accurate financial reports, enhancing the value of reports for shareholders, and preventing management from abusing its discretionary ability to alter results before major events like mergers and acquisitions. There was strong evidence (Alsharairi & Salama, 2011) found on pre-merger earnings management with a concentration on leverage that earnings management and leverage are negatively correlated. Studies conducted by both academics and firms indicate a unique positive or negative association between leverage and earnings management, although these findings are not universally accepted. The theory put forth by Ghosh & Moon (2010) establish that firms with a heavy reliance on debt

financing may turn to earnings management in order to keep from breaking loan covenants if these covenants have larger minimum payments when the debt load is higher. For relatively modest levels of debt, there is a positive relationship between debt financing and earnings quality. At higher levels of debt, however, there is a negative correlation. In this case, the study sees that profits quality has a nonlinear relationship to debt financing. Iturriaga & Hoffmann (2005) documents that increasing leverage subjects lenders to stricter oversight, making it difficult for these firms to engage in earnings management. Firms that have a lot of debt also have a lower incentive to carefully manage earnings, since creditors prefer that the firm maintain its financial obligations, not its accounting information, which they believe may provide less relevant data.

With all of the above, it is clear that firms enter into debt covenants (borrowing money) (Doron and Penman, 2003). Debts serve the purpose of restricting management from making decisions that diminish the value of the creditor's claim. Only in this specific case, debt covenants could restrict the payment of dividends when a company's revenue falls short of particular income standards (Nelson and George, 2013). Additionally, violations of debt covenants result in extra expenditures for the organization (Nelson et al., 2013). The fact that firms near a debt covenant violation have accounting choices that are likely to make a default less likely has been noted by Watts and Zimmerman (1986). Sweeney (1994) looks at the claim that debtors who fail to pay back their loans update their accounting methods in the years before bankruptcy (more frequently than comparable firms that do not default). Sweeney (1994) shows that managers, when facing increased debt covenants, adjust accounting processes. The study also claims that companies that are running afoul of the rules imposed by GAAP (generally accepted accounting principles) are more prone to make discretionary changes to increase income. Finns also apply accounting modifications to increase income earlier than control corporations. In the case of South Africa, the International Financial Reporting Standards (IFRS) and in accordance with numerous studies, the introduction of IFRS would likely diminish earnings management and managerial discretion. The implementation of the new IFRS, which allows for the option of fair value accounting for real estate investment assets, has radically transformed the landscape of financial reporting for real estate corporations globally. Based on findings (Quagli & Avallone, 2010; Edelstein, et al., 2012). The study discovered that under the IFRS, firms prioritize market asset values above alternative criteria for present performance. According to previous research, the majority of real estate firms prefer to record fair values for investment properties in their financial statements rather than in the notes to the financial statements. The findings of Chebaane & Othman (2013) demonstrate the

influence of implementing IFRS fair value accounting on the reporting of investment property information. Following the adoption of the IFRS, companies have two options for accounting for investment properties: (1) on the balance sheet at fair values and on the income statement with unrealized gains and losses (i.e., the fair value model), or (2) on the balance sheet at cost with notes used to disclose fair values on the financial statements (i.e., the cost model).

Although fair values must be recorded somewhere in the financial statements, managers of REITs have the option of not reporting fair values on the balance sheet and the related unrealized fair value profits and losses on the income statement (Aboody, et al., 1999; Dietrich, et al., 2001). The fair value approach vs the cost model has advantages and disadvantages. In rising real estate markets, it may be advantageous for real estate corporations to use the fair value model to record unrealized profits on the income statement (Danbolt & Rees, 2008; and Barth & Clinch, 1998). Unrealized gains and losses, of course, can be significant in comparison to a real estate company's rental and other income. As a result, revenue volatility may occur as real estate values vary in response to market conditions. As a result, managers may believe that include unrealized gains and losses in net income is not useful, and they may continue to use the cost model in accounting for investment properties, with fair value information de-emphasized and confined to the notes to the financial statements.

In order to lower the probability of debt covenants being breached and to increase the firm's negotiating leverage in debt negotiations, managers employ income-increasing accounting policies (Norman and Kamran, 2005). This signifies that leverage management's earnings trajectory could go up or down. For instance, DeFond and Jiambalvo (1994) search for ways to make additional money available to troubled companies without raising their debt burden. Additionally, DeAngelo and DeAngelo (1994) discovered that accruing lower than expected income decreases a business's ability to get better contract terms. Many researchers have utilized leverage as a surrogate for possible association with earnings management when analyzing the effect of debt covenants (DeFond et al., 1994). South African REITs have higher willingness to borrow in order to provide dividends to shareholders due to incentives strategy in place (Kasozi & Ngwenya (2015).

3.3.1.3. Dividend Yield (DY) and Earnings Management

According to a review of the literature, management of earnings has an impact on the dividend policy of corporations (Ali Shah et al., 2010; Kazemi et al., 2014). Firms' reported earnings do not

reflect their real performance or ability to pay dividends since they alter their earnings statistics (indicating earnings management) for a variety of reasons including enticing investors, satisfying shareholders and creditors, etc (Chansarn & Chansarn, 2016). With this, the management of earnings consequently has an effect on the dividend policy for sure; by implication, the stock price rises when a firm uses earnings management to boost its reported results in order to attract investors. A financial manager faces a daunting task when it comes to developing a sound dividend policy. Shareholders' confidence should rise as a result of this approach and it should also be beneficial to the firm. Dividend policy was pioneered by Lintner (1956); the paper examined the process through which firm managers arrive at their dividend policy. Further, it was discovered that dividend rate serves as a benchmark for the company's management. The choice to lower payouts is a difficult one for the firm's management. When a company is in its early stages, it may not pay dividends since it is concentrating on growth and maintaining its earnings. When capital markets are believed to be flawless, dividend policy is irrelevant (Miller & Modigliani, 1961). Litzenberger & Ramaswamy (1979) in terms of earnings management established that dividend policy is significant in the context of imperfect markets. A firm's dividend policy and earnings are strongly linked; Kaasen et al (1999) provided evidence on the concept of dividends influencing earnings management. The paper noted that shareholders wanted substantial returns in anticipation of a smooth dividend influx; with this, Earnings management was therefore promoted in order for firms to show sufficient income for dividends.

Evidence of dividend-stimulated earnings management was identified by Kato et al., (2001); their paper revealed that banks use their earnings to maintain their position at the top of the market. The proportion of independent directors' equity stake reveals their motivations, as shareholders, to carry out their responsibilities as controllers successfully. Participation in firm share capital by external directors does in fact motivate them to exert influence on executive behavior and to challenge their decisions. These board members want to receive dividends from their company's excess cash flow. Researchers Dechow et al. and Beasley (1996) found a negative correlation between the percentage of shares held by outside directors and the breach of generally accepted accounting standards. According to Nekhili et al. (2009), in the French context, the percentage of stock owned by non-executive directors has a negative relationship with earnings management.

Shareholders' expectations for dividends rise significantly due to the firm's increased reported profitability. By implication, Arif et al. (2011) provided evidence on a possible outcome wherein

managers tend to be forced to report lower profits because of the payout. Therefore, to avoid paying dividends, the managers might manipulate their earnings (Edelstein et al, 2008). The deduction infers that as long as they display a lower income and higher spending, they can accomplish their goal. Edelstein et al. (2008) confirms the findings of Kato et al. (2001) by corroborating that there are incidences of dividend-stirred earnings management, but contradicts the findings of Savov (2006), who showed that firms with higher investments had more possibilities of discretionary accruals in their earnings. Earnings management may be measured by the amount of discretionary accruals. Investments and earnings management are proven to have a detrimental impact on dividends.

3.3.1.4. Market to Book Value Ratio (MBvR) and Earnings Management

This association has been documented by Lang et al. (1989) and Servaes (1991) as well. The ratio of market to book value is related with firms' motivations to manage earnings. As a result of their increased sensitivity to earnings changes, low market to book ratio firms profit the most from managing their earnings (Skinner and Sloan, 2002). A surrogate for earnings management has been modeled that incorporates the book-market ratio to differentiate it from the market to book ratio's effect.

3.3.1.5. Return on Company's Assets (ROA) and Earnings Management

Motivated by financial incentives, managers work to increase shareholder wealth by employing business assets in the most efficient manner possible (Kasznik, 1999). In other words, past years' earnings influence the propensity to exaggerate future years' earnings, as well as match analyst expectations for future earnings. Kothari, Leone, and Wasley (2005) state that three main sorts of events have an impact on earnings management activities in organizations. First, anticipated company events of interest influence discretionary accruals. The second factor is the induction of earnings management by other firm-specific events. And last, earnings management such as increasing ROA were motivated by boosting the company's performance. According to Kothari et al. (2005), firms with higher ROA have more events distinctive to the firm as well as discretionary accruals inspired by the financial performance of the company. Following the previous line of reasoning, Shih (2013) describes the two types of abnormal accruals, namely those related to results and those to mistakes, as “performance-related abnormal accruals. This study utilizes the return on assets (ROA) as opposed to firms' share prices to illustrate business performance.

3.3.1.6. Free Cash Flow (FCF) and Earnings Management

Having cash on hand after all successful initiatives have been financed, but not paid as dividends or super-dividends, is a source of conflict of interest between shareholders and managers. This is referred to by Jensen (1986) as an FCF situation. Managers' misuse of these money, i.e., the allocation of which has little to do with the interests of the firm, is the focus of this article. There are several factors to consider when determining whether or not an FCF scenario is alarming to shareholders. Aside from the fact that in firms with promising development prospects, agency charges connected to FCF issues are not substantial enough (Alonso et al., 2005; Lasfer, 2006; Gregory & Wang, 2013).

Overinvestment can occur when there are not enough strong growth possibilities, which might be bad for shareholders. Leaders' propensity to inevitably encourage firm expansion to enhance its size, degree of remuneration (Jensen and Murphy, 1990) and discretion are to blame for this condition (Stulz, 1990). Repurchase of own shares and linked parties transactions (with leaders, significant shareholders, and/or directors) can also be used to extract private gains and expropriate small owners in the event of an FCF crisis. (Nekhili & Cherif, 2011). Such conduct might have a negative impact on the company's finances, cause a drop in the stock price, and lead to the replacement of managers (Opler et al., 2001; Richardson, 2006). Because of this, they may alter profits in order to hide their use of discretionary money and ease the extraction of private advantages of control (Leuz et al., 2003).

FCF and earnings management have a positive relationship, according to Jaggi & Gul (2006). Management in firms with high FCF is said to manipulate earnings upward to post strong results and maintain job security. The findings of Chung et al. (2005a) are supported by the findings of the aforementioned scholars. Discretionary accruals are used by firms with a high FCF level to cover up negative net present value (NPV) projects (Bukit & Iskandar, 2009). A study of 155 Malaysian listed firms on the Malaysian Stock Exchange in 2001 found that companies with high FCF levels were more likely to be able to manage their earnings in the short term. Rusmin et al. (2014) propose that the relationship between FCF and income-increasing accounting option is not a one-to-one relationship, but rather depends on a unique institutional characteristic. In Malaysia for instance, Rusmin et al. (2014) found a positive relationship between FCF and income-increasing accounting decision, which is somewhat relevant in Singapore, but not in Indonesia. A FCF scenario, on the other hand, provides proof of the reasons for downward earnings management, according to Chung et al (2005b). Discretionary accruals are used by organizations

with high FCF and poor growth potential to lower their profit levels. It should be noted that the study would have adopted Funds from Operations as a better alternative for REITs; however, the data was inconsistent – hence, why it was not adopted.

In Table 3.1.1, the study has reasons to believe a relationship between earnings management and the adopted variables based on a number of accounting literature.

Table 3.1 1: Relationships among Variables: REITs Earnings Management

S/No	Variable	Paper	Relationship with Earnings Management
1	Leverage (Debt/Equity)	Matsuura (2008); Fung & Goodwin (2013); and Salihi & Jibril (2015)	Positive
		Chou, Gombola & Liu (2006); Rodríguez-Pérez & Van Hemmen (2010) and Black, Sellers & Manly (1998).	Negative
2	Dividend Yield	Chansarn & Chansarn (2016); Kao (2014); Shah, Yuan & Zafar (2010) and Lanouar, Riahi & Omri (2013).	Negative
		He, Ng, Zaiats & Zhang (2017); and Padmini & Ratnadi (2020).	Positive
3	Free Cash Flow (FCF)	Dewi & Priyadi (2016); Kodriyah & Fitri (2017); and Chung, Firth & Kim (2005); and	Positive
		Astami, Rusmin, Hartadi & Evans (2017); Susanto, Pradipta & Djashan, (2017).	Negative
4	Market to Book Value Ratio	Han, Kang, Salter & Yoo (2010; and Capalbo, Frino, Lim, Mollica & Palumbo (2018).	Positive
		Tabassum, Kaleem & Nazir (2015); and Park & Park (2004).	Negative
5	Firm Size	Ali, Noor, Khurshid & Mahmood (2015); and Nalarreason, Sutrisno & Mardiati (2019)	Positive
		Thoopsamut & Jaikengkit (2009); and Lobo & Zhou (2001).	Negative

6	Return on Assets	Aygun, Ic & Sayim (2014); and Sun & Rath (2009).	Positive
		Alhadab & Al-Own (2017); and Leggett, Parsons & Reitenga (2009).	Negative

3.4. Hypotheses Formulation and Data Sources

3.4.1. South African REIT Management Structures/Styles and Earnings Management around SEOs

Capozza & Seguin (2000) documents that REITs that delegate asset and liability management decisions to internal employees generally pay managers based on corporate cash flows rather than property cash flows for their work; additionally, the important design element is the simultaneous existence of several forms of management contracts and pay systems among the publicly listed REIT companies. When REITs are managed externally (i.e., by advisers), there is a mismatch of incentives, according to Sagalyn (1996), but conflicts of interest are less likely with internal management. An important distinction is not whether a management and shareholder have an arm's-length relationship or not, but rather whether contracts exist that reward external advisers based on criteria different from shareholder wealth. Most external advisers are paid as a percentage of assets, as a percentage of property-level cash flows, or as a mix of the two.

3.4.2. Management Structures and Earnings Management

It is the tasks and procedures of a firm's internal governance that are designed to monitor and influence the actions of its management. Maintaining the credibility of a company's financial statements is a primary function of these systems in connection to financial reporting (Dechow et al., 1995). Board of directors is an essential internal control tool for monitoring the actions of senior management and maybe the use of accruals to manage earnings. Fama (1980) & Fama and Jensen (1983) argue that the efficacy of the board is a function of the board's makeup. According to them, the corporate board's internal control is strengthened by the presence of non-executive members. However, agency theory suggests that external directors, due to their independence and organizational capabilities, provide an effective regulatory system for executive directors' activities (who are perceived to favour opportunism) since they have a unique perspective on the firm (Rediker & Seth, 1995). Because external directors/managers have incentives to cultivate track records as experts in regulated decision-making, they have the potential to be more successful (Fama & Jensen, 1983). The board can be viewed as a means by which managers exert

control over their subordinates. Researchers usually agree that external management is crucial for management monitoring and supplemental knowledge (Booth et al., 2002).

Further, a number of studies have also provided evidence on the impact of management structure on limiting opportunistic earnings management action. Some studies asserted that external managers on a board appears to restrain the action of the board in relation to earnings management (Klein, 2002; Peasnell et al., 2000, 2005, 2006; Benkel et al., 2006; Benkraiem, 2009). Financial statement fraud has been studied extensively by Beasley (1996), Dechow et al (1996), and Uzun et al (2004), among others. A correlation between irregular accruals and the percentage of external managers on a firm's board has been identified by Klein (2002), using data from the United States. Management structures and earnings management were also examined using a sample of firms in the United Kingdom by Pope et al. (1998). The paper suggested that a more diverse board of directors would limit earnings management; apart from this, the paper established a significant relationship between the percentage of external board members and the growth in income accruals. On the basis of the Cadbury Committee Report of 1992, Peasnell et al. (2000) provided evidence on the relationship between board composition and earnings management. While the paper found no indication of a relationship between management structures and earnings management, it indicated a strong negative correlation between the percentage of external managers and the amount of income-increasing accruals.

Howe & Shilling (1990) found that externally managed REITs experience negative abnormal returns over the 1973 to 1987 period on average. Whereas, Hsieh & Sirmans (1991) and Cannon & Vogt (1995) found that internally managed REITs outperformed externally managed REIT's over their 1987 to 1992 sample period. Also, Capozza & Seguin (2000) established that compared to domestically managed REITs, externally managed REITs issue loans with lower projected interest rates. Higher debt use in externally managed REITs may not explain all of the rising interest rates. It also is worth noting that these debt contracts come with interest rates that are higher than those on the borrowed funds. The usage of debt that has been negotiated at rates that appear to be above market rates has the effect of reducing shareholders' cash flows.

3.4.2.1 Externally Versus Internally Managed REITs: Benefits and Features

The activities of the "manager" and the "advisor," respectively, in REIT management include investing and property management. Property managers are in charge of managing property sites; their responsibilities include leasing and facility operations such as maintenance, engineering, tenant relations, onsite construction management, property-level accounting, and so on.

Investment management advisors are in charge of selecting and managing assets in order to carry out the REIT's investment plan; their responsibilities include providing recommendations on property purchases and disposal.

The IREIT model is notable in that it should be handled externally. The projected IREIT regulations make no distinction between asset management ("advisor") and property management ("manager"). External management is required for overall management. This is analogous to early REITs in the United States (before to 1968), which were obliged to be externally advised. In turn, the adviser would employ managers, leasing brokers, and subcontractors. The idea was to retain REITs as passive investment vehicles. The United States started to enable REITs to be "self-advised" and "self-managed" in 1986 (Ambrose & Linneman, 2001). The trust in an IREIT will designate a management company (or LLP) to be in charge of asset management and property management. In total, approximately 50% of worldwide REITs are advised and managed internally, whereas roughly 30% are advised and managed externally (Das & Thomas, 2016).

Markets with extensive REIT experience tend to have even more internally advised REITs. Externally advised REITs are common in developing REIT markets, particularly in Asian economies. Companies favor internal advising when laws allow, but are less picky about internal management. The sole exception is Mexico, where roughly 70% of REITs are externally managed but internally managed, while the remainder are both advised and managed. According to Cashman et al. (2014), external management is popular in less stable economic and political situations, higher levels of corruption, worse disclosures, or inadequate property rights protection.

The bulk of REITs (60–75 %) in developed countries with a saturation point of REITs (e.g., the United States, the United Kingdom, and Australia) are internally advised and managed. Developed markets (e.g., the United States, the United Kingdom, Australia, Belgium, Canada, and France) with a high number of REITs are dominated by internal advisers (60–85 %) and, while still significant, are less controlled by internal managers. In contrast, all REITs in Japan and Singapore are both advised and managed by third parties. It is worth noting that REITs in Japan and Singapore were designed after Australia when it introduced external management. Although Australian REITs are now internally advised and managed, REITs in Singapore and Japan are still externally advised and managed. Several REITs (11 – 13 %) in developed markets such as the United States, United Kingdom, and France are externally advised and managed. Half of Hong Kong's real estate investment trusts (REITs) are advised and managed by third parties. Countries where REITs are still in their early stages (for example, Finland, Ireland, and the United Arab Emirates) choose

externally advised and managed arrangements. Property owners are sometimes hesitant to hand up power to managers since external advising services involve investment management. As a result, some property owners are hesitant to convert their properties into REITs. Other challenges arising from this paradigm include agency issues and conflicts of interest, particularly in circumstances when a management business services many customers. Clearly, as Cashman et al (2014) reiterated, the choice of external versus internal advisor is a function of the estimated agency costs. Indeed, earlier externally-managed REITs underperformed. Howe and Shilling (1990) reported that from 1973 to 1987, the risk-adjusted performance of externally-advised REITs was worse than the overall market. In 1986, the U.S. Tax Reform Act (TRA) took the drastic step of allowing REITs to be internally managed. Recently, REITs are pre-dominantly self-advised (Nicholson & Stevens, 2021)

3.4.2.2. Costs and Benefits of External Managers

When comparing external vs internal advisers or managers, studies have shown varying results. For example, Brockman et al. (2014) discover that, whereas externally managed REITs underperformed until 1993, the underperformance did not last due to rising institutional ownership. They claimed that better monitoring from institutional ownership raised the performance of externally managed REITs to that of internally managed ones. Das and Thomas (2016), on the other hand, indicate that internally-managed REITs are no better at reducing general and administrative (G&A) expenditures. Internally managed REITs, on the other hand, have 20 basis points greater management expenses in terms of market value. They discover that the efficiency ratio range (G&A expenditure divided by total revenue) in domestically managed vs externally managed REITs is 5%–7% and 4%–6%, respectively. According to Yong & Singh (2013), when internally managed REITs engage in a broader range of operating activities, they become more vulnerable to market and financial risk.

3.4.2.3. Costs and Benefits of External Advisors

According to Brockman et al. (2014), while the choice of external vs internal management has a negligible influence on REIT returns, the choice of internal versus external adviser type is essential. Specifically, whether property-level operations are managed internally or externally has little impact on REIT performance. However, it is recognized that whether asset management (investment in and disposition of properties) is performed by internal or external managers makes a difference. According to Howe & Shilling (1990), insurance companies and specialist real estate consulting services firms provide superior advice than others. Engaging external managers or

advisers may enhance a REIT's performance, especially for REITs with regionally broad asset portfolios or heterogeneous asset holdings (Deng, et al, 2014). It is suggested that local ("external") advisers have access to "soft information" and are therefore more capable of overcoming some of the difficult problems often connected with the features stated above (Cashman, et al., 2014). Externally advised REITs are also seen as more transparent. As a result, analyst expectations are less scattered, bid-ask spreads are narrower, and share prices are less volatile. However, external advisors may be more costly. Another downside of external advisors is related to self-dealing. For example, an advisor may acquire for the REIT an overpriced asset in which it has ownership interest, or sell assets at low price to a related buyer.

Below is Table 3.2.1 showing a sample of internally and externally managed REITs around the world. This is followed by Table 3.3.1 which shows South African REITs and their management structures. Externally managed REITs are believed to have greater governance, better frameworks, and better alignment (Lecomte & Ooi, 2013; Omokhomion, et al., 2018; Kudus & Sing, 2011; and Yap, et al., 2018). In reaction to the financial crisis and accompanying regulatory revision, institutional fund management platforms have tightened internal controls, systems, procedures, and investor communication (Waldron, 2018). They are now aiming to diversify capital sources and, where feasible, develop new products that complement existing fund offerings, such as performance-based fee structures and strong governance controls (Wenceslao, 2008; Joseph, Graeme & Tien-Foo, 2006). As a result, new, externally managed listed firms in the United States and across the world with structures that better alleviate many of the traditional alignment, cost, and governance difficulties are becoming more common. Listed REIT products are now enabling access to best-in-class fund platforms to retail and institutional investors of all sizes. With this, investor confidence is lured due to the impact of externally managed REITs' corporate governance outlook (Chong, et al., 2017). A possible case of investors being lured to buy more SEOs of externally managed REITs than their internal counterparts is perceived.

Table 3.2 1: Sample of Internally managed vs. Externally managed REIT 2021 globally

REIT/Year of Origin	Internal Management	External Management	Market Capitalization (USD)
US (1960)	251	41	1.33 Trillion
UK (2007)	36	19	74 Billion
Netherlands (1969)	11	0	0.77 Trillion
France (2003)	28	11	76 Billion
Belgium (1995)	23	9	16 Billion
South Africa (2013)	29	5	36 Billion

Italy (2007)	6	3	5.1 Billion
Australia (1985)	28	13	103 Billion
Ireland (2013)	4	9	5.3 Billion
Spain (2009)	4	11	28.2 Billion
Mexico (2004)	6	13	17.5 Billion
Hong Kong (2003)	4	8	11.1 Billion
Singapore (1999)	4	41	73.3 Billion
Japan (2000)	6	62	147.2 Billion

Author's Compilation (2021)

The study contends that managers' subpar performance can be explained by taking a close look at the money they receive. For the most part, external managers are paid as a proportion of either the overall assets managed or the cash flows from individual properties. Interest expenses have no effect on the pay of either party. Because of this, they have no need to bargain for lower interest rates. For this reason, external management are compelled, regardless of interest rates, to issue debt to fund the purchase of further real estate. With the need to issue debt and the inability to offer competitive interest rates, it is possible for stock value to fall.

With the above literature inconsistencies, the study then hypothesized that a relationship exists between management structures of firms (REITs) and tendency to manage earnings irrespective of the degree.

Hypothesis 1A: Internal Management of REITs will increase earnings management behavior

Hypothesis 1B: Internal Management of REITs will not increase earnings management behavior

Hypothesis 2A: External Management of REITs will reduce earnings management behavior

Hypothesis 2B: External Management of REITs will not reduce earnings management behavior

Table 3.3 1: South African REITs and their Management Structures/Classifications

REITs	Management Structure	REITs Sector	Date of Listing	Market Cap	P/E Ratio	Dividend Yield (%)	Return on Equity	Return on Assets	Net Asset Value	Issued Shares
ACCPROP ACCELERATE PROPERTY FUND LTD	Internally	Diversified	December 2013	5,392,035,675	10.16	10.57 %	8.7 %	4.61 %	743.87	989,364,344
ARROWHEAD PROPERTIES LTD	Internally	Diversified	December 2011	6,982,192,384	8.01	13.16 %	9.97 %	9.36 %	1,103.91	1,049,953,742
CAPITAL & REGIONAL PLC	Externally	Retail	December 1995	6,938,543,842	27.17	6.34 %	5.03 %	5.38 %	1,152.60	718,275,760
DELTA PROPERTY FUND LTD	Internally	Diversified	November 2012	4,413,435,813	6.82	15.76 %	6.98 %	10.02 %	973.87	711,844,486
DIPULA INCOME FUND LTD A	Internally	Diversified	December 2011	9,311,051,201	11.04	9.27 %	9.2 %	9.53 %	1,012.62	219,197,046
DIPULA INCOME FUND LTD B	Internally	Diversified	December 2011	2,463,134,245	7.13%	3.14%	9.2 %	9.53 %	1,012.62	229,128,767

EMIRA PROPERTY FUND LTD	Internally	Diversified	November 2003	7,646,621,824	14.47	9.79 %	8.06 %	6.66 %	1,734.70	522,667,247
EQUITES PROPERTY FUND LTD	Internally	Logistics	June 2014	8,178,967,953	14.34	5.86 %	14.83 %	7.11 %	1,522.00	409,973,331
FAIRVEST PROPERTY HOLDINGS LTD	Internally	Diversified	November 1998	3,765,255,297	10.66	8.94 %	17.52 %	14.69 %	218.18	861,100,145
FORTRESS REIT LTD A	Internally	Logistics and Retail	October 2009	20,160,129,375	5.91	8.16 %	30.85 %	1.9 %	1,739.00	1,184,496,438
FORTRESS REIT LTD B	Internally	Diversified	October 2009	29,183,891,080	5.91	8.16%	30.85 %	1.9 %	1,739.00	1,086,114,294
GROWTHPOINT PROPERTIES LTD	Internally	Diversified	December 1987	47,597,799,587	15.67	6.96 %	10.73 %	7.35 %	2,518.00	2,934,202,472
HAMMERSON PLC	Externally	Retail	December 2015	21,052,970,823	16.06	5.18 %	9.51 %	5.19 %	12,858.17	794,227,196
TSOGO SUN HOSPITALITY PROPERTY FUND LTD	Internally	Hospitality and Leisure	February 2006	1,417,511,698	9.06	11.54 %	3.46 %	4.48 %	2,009.00	578,154,207

HYPROP INVESTMENTS LTD	Internally	Retail	December 1987	9,408,041,789	17.12	6.3 %	11.04 %	6.89 %	9,978.00	248,441,278
INVESTEC AUSTRALIA PROPERTY FUND	Externally	Retail	December 2012	10,166,278,479	7.71	9.23 %	19.25 %	7.5 %	122.80	478,802,454
INDLUPLACE PROPERTIES LTD	Internally	Residential	June 2015	1,063,399,588	9.52	10.51 %	8.34 %	8.46 %	1,029.98	318,645,117
INVESTEC PROPERTY FUND LTD	Internally	Diversified	December 2011	6,324,097,363	15.63	8.02 %	7.79 %	8.97 %	1,694.00	731,400,437
LIBERTY TWO DEGREES	Internally	Retail	November 2018	4,540,079,672	26.03	4.2 %	6.95 %	6.31 %	994.00	908,443,334
OCTODEC INVESTMENTS LTD	Internally	Diversified	November 1990	6,816,900,958	10.54	11.25 %	8.78 %	7.18 %	2,933.00	266,864,319
ORION REAL ESTATE LTD	Internally	Diversified	2005 – 2019; 2020 – Date	409,954,147	125	5 %	-1.19 %	-0.48 %	94.67	630,698,688
RDI REIT P.L.C	Externally	Diversified		11,145,027,389	13.21	7.8 %	9.13 %	6.42 %	680.81	1,905,132,887

REBOSIS PROPERTY FUND LTD B	Internally	Diversified	December 2010	6,591,506,936	13.14	13.11 %	22.26 %	6.6 %	1,844.55	673,289,779
REBOSIS PROPERTY FUND LTD A	Internally	Diversified	December 2010	1,641,753,011	0	0	22.26 %	6.6 %	1,844.55	63,266,012
REDEFINE PROPERTIES LTD	Internally	Diversified	December 1999	26,127,256,264	-6.75	0	7.38 %	4.09 %	719.74	5,793,183,207
RESILIENT REIT LTD	Internally	Retail	December 2002	22,211,008,360	79.12	7.72 %	1.06 %	-1.73 %	5,213.00	400,126,254
SA CORPORATE REAL ESTATE LTD	Internally	Diversified	December 1995	5,532,410,609	5.73	12.82 %	5.8 %	6.58 %	383.00	2,514,732,095
SAFARI INVESTMENTS RSA LTD	Internally	Retail	December 2000	1,554,130,080	13.19	8.4 %	12.45 %	6.65 %	834.00	310,826,016
SCHRODER EUROPEAN REAL ESTATE INVESTMENT TRUST PLC	Externally	Office	December 2015	2,911,404,114	21.37	5.34 %	-0.75 %	3.07 %	2,576.55	133,734,686
SPEAR REIT LTD	Internally	Diversified	November 2016	1,485,139,751	9.02	8.48 %	2.38 %	7.63 %	1,153.00	214,615,571

STOR-AGE PROPERTY REIT LTD	Internally	Specialized (Storage)	December 2006	5,991,075,019	12.35	7.66 %	21.26 %	5.26 %	1,306.77	432,881,143
TEXTON PROPERTY FUND LTD	Internally	Commercial	August 2011	1,316,298,305	4.91	10.41 %	7.57 %	6.83 %	625.88	365,638,418
TOWER PROPERTY FUND LTD	Internally	Diversified	December 2012	1,205,401,247	53.79	6.32 %	-16.96 %	6.32 %	614.00	339,549,647
VUKILE PROPERTY FUND LTD	Internally	Retail	June 2004	11,484,281,802	8.75	8.41 %	2.21 %	5.13 %	1,816.00	956,226,628

Author's Compilation (2021)

3.4.3. Data Sources

In this paper, the study used 476 SEOs issued by 34 REIT firms (based on availability of data) from January 1, 2013 to December 31, 2021. The number of SEOs was retrieved from the Stock Exchange News Service (SENs) of the Johannesburg Stock Exchange (JSE). The study did not find consistent data on SEOs for 2020 and 2021; hence, the study commenced the study period in 2013 till 2019, being motivated by the evolution of the REITs regime in South Africa. The sample includes all classifications of REITs for the purpose of the study. Financial ratios and stock accounting data were retrieved from IRESS Expert database. The 34 SAREITs were further categorized into internally managed and externally managed firms (with information retrieved from the SENs) for comparison with a view to examining the degree of earnings management around SEOs. The numbers of internally managed REITs are 29 while the numbers of externally managed REITs are 5 (all international firms). The study first measures earnings management through its discretionary accruals proxy; it then use the multivariate and univariate ordinary least square (OLS) specifications to test the hypotheses. OLS regressions have been argued as the most suitable model for capturing long time-series; apart from this, the OLS-based Jones model is preferred in detecting simulated earnings management (Höglund, 2013; and Ambrose & Bian, 2010). More recently and specifically, Morri, et al (2020) noted that the OLS model is best suited at investigating whether there is a significant relationship between excess dividends and a small set of covariates including samples of ratios adopted in this study (free cash flow, size and ROA). Subsequently, an alternative proxy for earnings management is adopted for the purpose of the study.

3.4.3.1. Measuring Earnings Management in Financial Statements: The Discretionary Accruals Phenomenon

Extant studies (Jones 1991; Defond and Jiambalvo 1994; Teoh 1998; Rangan 1998, Zhu et al (2010); Cohen and Zarowin (2010); Ghazali, Shafie and Sanusi (2015); Jackson (2018)) have all often-measured earnings management using discretionary accruals. Jackson (2018) for instance opined that the discretionary accruals are widely used in literature. The paper documented how the use of basic econometrics explains discretionary accruals estimation. Interestingly, the paper criticized the proxy as a measure noting that many researchers often do not consider the underlying econometric nature of same proxy and how it is interpreted. Rangan (1998) also documented that earnings management is best measured using the discretionary accruals; the paper equally noted that discretionary accruals are best effective in the quarter during which stock prices are announced and in the next quarter. Further, the discretionary

accruals is measured by the total accruals. To generate the non-discretionary accruals component, a model is then adopted with a view to categorizing the discretionary and non-discretionary components. Such models range from Jones Model, Modified Jones Model, M-score Model, to Industry Model, etc.

Motivated by prior real estate studies, the Modified Jones Model is used in this study (Liang & Dong, 2018; Anglin, et al., 2013; An, et al., 2011; Islam, et al., 2011 and Zhu, et al., 2010). In recent times, this appears to be the most widely used approach for detecting instances of earnings management/manipulation. The assumption in the Jones model and the cross-section Jones model is that any variations in revenue are non-discretionary. Managers, on the other hand, have the option of using credit sales to control their revenues. Dechow et al. (1995) adjusted the Jones model by subtracting the variance of receivables (∆REC) in order to determine this; hence, the study adopted the modified Jones model proposed by Dechow et al. (1995) which is commonly used in the studies on earnings management to estimate discretionary accruals (Peasnell et al., 2005; Frankel et al., 2002; Haw et al., 2004; Rahman & Ali, 2006). The modified Jones model consists of regressing total accruals (TACC) on three variables:

- the change in revenues (∆Rev);
- the change in receivables (∆Rec); and
- the level of gross property, plant and equipment (PPE).

$DA_{i\tau} = \alpha_0(1/A_{i\tau-1}) + \alpha_1(\Delta REV_{i\tau} - \Delta REC_{i\tau}/(A_{i\tau-1}) + \alpha_2(PPE_{i\tau}/ A_{i\tau-1}) + \varepsilon_{it}$

Where:

$DA_{i\tau}$: Discretionary Accruals
A_{it-1}: the sum of assets in year t-1
ΔREV_{it}: the change in revenues between years t and t-1
ΔREC_{it}: the change in receivables between years t and t-1
PPE_{it}: the sum of the property, plant & equipment in year t
ε_{it}: statistical error

The independent variables are time-varying covariates.

$$DA0 = \alpha 0 + \alpha 1 * DE - \alpha 2 * DY - \alpha 3 * SIZE - \alpha 4 * MTB + \alpha 5 * ROA + \alpha 6 * FCF + \alpha 7 * ManagementStructure + \varepsilon_i, \quad t = 1, 2, 3..T$$

3.4.4. Control Variables

This research focused on previous studies that used variables to control for earnings management, which is in line with investigating the incidence of earnings management within the different management structures of REITs in South Africa. On the basis of this, the study employs variables which explains earnings management of REITS (due to the availability of

data) in Table 3.4.1. With Debt/equity ratio *(LEVERAGE)*, analysts and investors use the debt-to-equity ratio to determine how much debt a company has in relation to the equity they possess or the shareholders own. The firm has a wide range of finance requirements in order to effectively execute its activities (Matsuura, 2008). As a proxy for how close a firm is to breaching its covenant obligations, most accounting choice research has looked at the debt-to-equity ratio.

This study has revealed that when the ratio is high, managers are more likely to pick accounting practices that increase earnings. For more than 60% of the limits on retained earnings, working capital, and net tangible assets, the results of Duke and Hunt (1990) imply that the debt-to-equity ratio is a suitable proxy for the presence or absence of debt covenant constraints. The higher the debt-to-equity ratio, the more likely it is that business activity will raise income; hence, a positive correlation. Dividend Yield *(DY)* is expressed as the financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage (Christie, 1990; Chen, et al., 1990; Asquith & Mullins Jr, 1986; Ong, et al., 2011 and Elliott, et al., 2009); dividends are a way for a corporation to give back to its owners. A method for returning cash or assets to shareholders has been disclosed as well as a strategy for paying funds to those shareholders (Jensen, 1986). Free cash flow can be distributed to shareholders via dividends.

However, when firms must limit dividends, they are on the verge of entering into a debt agreement. Managers may be motivated to manipulate earnings and keep the dividend hikes coming if this scenario occurs (Barkhordar & Tehrani, 2016). Firm Size *(SIZE)* Syed Zulfiqar et al. (2010) claim that dividends can be utilized as a feature to forecast income or as a predictor of dividend. These scholars further argued that if a corporation reduces its shareholder dividend, it can be seen as a solution to alleviate the firm's difficulty; ultimately, this is earnings management. The relationship between firm size and earnings management has been studied using agency theory by Barton and Simko (2002) and Ali et al (2015). Financial analysts have high expectations of large firms, thus they often engage in earnings management to meet those expectations (Turegun, 2016). Conversely, research by Kim (2003) and Swastika (2013), on the other hand opined that same large firms possess adequate organizational controls. Furthermore, the scholars noted that as a matter of fact, large firms are frequently audited by one of the big accounting firms, reducing the likelihood of engaging in financial reporting manipulation. A number of prior studies have found conflicting outcomes when it comes to the relationship between the amount of leverage a firm has and its size. The market to book value ratio *(MTB)* is also believed to be linked to the incentives of firms to control earnings. To

compensate for their greater sensitivity to earnings swings, low market to book value ratio firms stand to gain more from earnings management and so have higher incentives to manage earnings (Skinner & Sloan, 2002). Return on assets *(ROA)* measures how much a firm may make from its assets while still making a loss (Yuliana & Trisnawati, 2015). It is indeed possible that a decline in earnings will make the company less appealing to investors. Firms that generate a lot of returns will be more motivated to make money-driven decisions in order to keep or even enhance their profits year after year (Wiyadi et al., 2015). Free cash flow *(FCF)* and earnings management have a positive relationship, according to Jaggi & Gul (2006). Management in firms with high FCF is said to manipulate earnings upward to post strong results and maintain job security. The findings of Chung et al. (2005a) are supported by the findings of the aforementioned scholars. Discretionary accruals are used by firms with a high FCF level to cover up negative net present value (NPV) projects (Bukit & Iskandar, 2009).

Table 3.4 1: Model Specification - Earnings Management and Financial Ratios/Control Variables

Dependent Variable	
DA (Earnings Management Proxy/Measure)	**Earnings Management**: *Discretionary accruals are often used to measure the dependent variable, EM. The Jones Model calculates discretionary accruals. The Jones model (1991) is a widely used model for measuring earnings management.*
Independent variables *(Firm Level)*	
DE	**Debt/Equity ratio:** *Book value of total liabilities divided by book value of equity, computed by using data from the year preceding SEO announcement*
DY	**Dividend yield:** *The financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage*
FSIZE	**Firm Size:** *The value at which the shares of a company's stock is estimated*
MTB	**Market to Book value Ratio:** *The measure is used to equate a company's available net assets to the price at which the stock is sold*
ROA	**Return on Assets:** *Net income divided by book value of assets, computed by using data from the year preceding SEO announcement*
FCF	**Free Cash Flow:** *calculated as sales revenue - (operating costs + taxes) - required investments in operating capital.*
MANAGEMENT STRUCTURE	**Internally and Externally Management**: *Internally managed REITs hire their own personnel, analysts, managers, and executives to handle the firm's assets as opposed to externally managed REITs.* *Internally Managed – Dummy Variable 1* *Externally Managed – Dummy Variable 0*

3.5. Results

The aim of this study is to estimate the degree of earnings management using discretionary accruals (modified jones model) between internally managed REITs and externally managed REITs for the study period. The chapter starts with providing descriptive stats, followed by trends analysis, correlation and Ordinary Least Squares regression.

3.5.1. REITs SEOs by year, and management type

The distribution of the REITs is seen in the table below. The time-series of SEOs and management structures are presented in the following table below (Table 3.5.1) (i.e., internally managed versus externally managed REITs). There has been an overall increase in the number of businesses that have issued SEOs during the course of the study period. The year 2014 saw the highest amount of observations, with 179 SEO concerns being identified. In South Africa, this may be traced back to the era around the implementation of the REITs system (2013). Indeed, an obvious decline in SEOs is witnessed in the years captured within the Covid-19 phenomenon. Hsu, et al. (2021) and Halling, et al. (2020) had observed that the pandemic panic phase saw stocks prices in various sectors of listed companies fall sharply due to investors' projected rationality. Further, as a result of the spread of Covid-19, both IPOs and SEOs are excluded for the purpose of robustness testing.

Table 3.5 1: Distribution of REITs SEOs by year, and Management Type

SEO Year	Internally Managed	Externally Managed	Total
Distribution by Year and Management type			
2013	18	26	44
2014	56	123	179
2015	26	51	77
2016	17	48	65
2017	47	64	111
2018	20	31	51
2019	13	42	55
Total	202	388	590

3.5.2. Summary Statistics

Table 3.6.1 presents a mean comparison of all variables for REITs that are managed internally compared to those that are managed externally. The findings demonstrate that the mean value for Discretionary Accruals (DA) in externally managed REITs (9.5, standard deviation=1.7) was somewhat higher than the mean value for DA in internally managed REITs (9.74, standard deviation=2.6). When comparing *FIRMSIZE* in externally managed REITs to *FIRMSIZE* in

internally managed REITs, the former was 1.9 times larger/higher. The word "*FIRMSIZE*" refers to the natural logarithm of 2010 total assets of firm *i*. It is defined as the sum of the market values of all of the shares that are currently outstanding (Anglin et al., 2013). When it comes to corporate capital, leverage, also known as the debt-equity ratio, measures the proportional contributions of creditors and shareholders or owners to the total amount of capital utilized in the firm (Ambrose & Bian, 2010). *LEVERAGE* levels in externally managed REITs (0.84, standard deviation = 0.77) were much lower than those in internally managed REITs (6.2, standard deviation = 36). *DIVIDEND YIELD*, also known as the financial ratio, is a measure of how much a company pays out in dividends every year in proportion to the price of its shares. It is expressed as a percentage of the stock price.

The *DIVIDEND YIELD* in externally managed REITs (14.1; standard deviation = 37.2) was greater than the *DIVIDEND YIELD* in internally managed REITs (9.8; standard deviation = 10.4). When it comes to *RETURN ON ASSETS (ROA),* the findings demonstrate that the *ROA* in externally managed REITs (5.9 percent; SD=7.1) was somewhat lower than the *ROA* in internally managed REITs (6.1 percent; SD=6.1); nevertheless, this difference is minor. Furthermore, the descriptive data reveal that *TOTAL ASSETS* in externally managed REITs were marginally lower (6.7; SD=10.6) than those in internally managed REITs (7.6; SD=8.3) as compared to those in internally managed REITs. In externally managed REITs, the mean *MARKET TO BOOK VALUE RATIO* (0.87) was 15 times lower than the mean *MARKET TO BOOK VALUE RATIO* in internally managed REITs (13.5; SD=132). When comparing internally managed REITs to externally managed REITs, *FREE CASH FLOW (FCF)* was 1.3 times greater in internally managed REITs (243,363; SD>100) than in externally managed REITs.

Findings also reveal that the mean value of discretionary accruals in internally managed REITs is less than values inherent in externally managed REITs; by implication and interestingly, South African externally managed REITs manage their earnings more than their counterparts.

Table 3.6 1: Summary Statistics for internally and externally REITs in a matched sample

	Externally Managed REITs			Internally Managed REITs		
Variable	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
Panel A*: Earnings Management Proxy/Measure*						
DA	388	9.497	1.701	202	9.743	2.58

Panel B: *Control Variables*						
Firm Size ('000s)	388	7,160,000	13,100,000	202	13,400,000	17,900,000
Leverage (Debt/Equity)	388	1	1	202	6	36
Dividend Yield	388	14	37	202	10	10
Return on Assets	388	6	7	202	6	7
Free Cash Flow (FCF)	388	185,573	324,806	202	243,363	432,678
Market to Book Value	388	1	0	202	13	132
Panel C: *DA Variables*						
Current Liabilities	388	1,446,728	2,927,914	202	2,200,729	2,461,585
Current Assets	388	1,446,728	2,927,914	202	2,200,729	2,461,585
Amortisation	388	-	-	202	-	-
Total Assets	388	7	11	202	8	8
Receivables	388	205,051	348,358	202	554,271	846,787
PPE	388	199,770	713,585	202	1,044,047	4,447,983
Depreciation	388	9,519	28,892	202	3,759	12,152
Revenue	388	471,276	630,805	202	1,161,108	2,919,826

NOTE: Above presents the summary statistics for internally and externally REITs in a matched sample. Using Mean and Standard Deviation values, discretionary accruals in internally managed REITs is less than values inherent in externally managed REITs; by implication and interestingly, South African externally managed REITs manage their earnings more than their counterparts.

3.5.3. Overall Discretional Accruals (2013 - 2021, all REITs)

Table 3.7.1 indicates that the average discretionary values between 2013 and 2021 (although, 2020 and 2021 were excluded due to inconsistent data) in this sample were negative. For each percentile, we compute a 95% confidence interval around the mean Discretionary Accrual (DA). The results reveal that the null hypothesis of zero DA is rejected at the 0.05 level for percentiles representing lower and higher levels of earnings (a type I error). Surprisingly, the results show that aggressive earnings management (Discretionary Accruals) practices in externally managed REITs were relatively higher compared to internally managed REITs, although negative. By implication, we therefore reject the null hypothesis. The prediction is therefore inconsistent with extant literature which had earlier established that external managers on the board of a firm appear to restrain earnings management activities (Klein, 2002; Peasnell et al., 2000, 2005, 2006; Benkel et al., 2006; Benkraiem, 2009). In comprehending the uniqueness of the findings, it is reasonable to assume that earnings management is motivated by a desire to postpone or minimize the release of negative news to investors (Peasnell, et al., 2005).

Another possible reason for these findings is that the negative discretionary accruals discovered in this study are due to poor financial performance and distress among both internally and externally managed REITs. The study observes that, as a result of financial distress and the inability to express a going concern modification (GCM), issuing firms can manipulate their

stock prices by managing earnings, and the market appears to extrapolate earnings growth associated with negative discretionary accruals and thus overvalues the issuing firm (Yuanwei, 2009; Ajona, et al., 2008). Prior REITs-specific research (Dempsey et al., 2012; and Ambrose & Bian, 2010) offer an equally compelling justification for boosting earnings management activities among financially distressed firms. Dechow et al. (1995) show that in organizations with exceptional performance, discretionary accruals are skewed.

Table 3.7 1: Overall Discretional Accruals (2013 - 2019, all REITs)

Discretionary accruals (DA)						
	Percentiles	Smallest				
1%	-69	-68.98				
5%	-65.9	-65.94				
10%	-65.6	-65.60		Obs	22	
25%	-63.4	-64.54		Sum of Wgt.	22	
50%	-55.2			Mean	-55.70	
		Largest		Std. Dev.	7.66	
75%	-51.1	-47.83				
90%	-44.6	-44.61		Variance	58.66	
95%	-43.4	-43.42		Skewness	0.01	
99%	-42.6	-42.57		Kurtosis	2.04	
Variable		Obs	Mean	Std. Dev.	Min	Max
DA_internally managed REITs		8	-53.06	9.09	-65.60	-42.57
DA_externally managed REITs		13	-56.95	6.79	-68.98	-47.83

3.5.4. The Augmented Dickey-Fuller (ADF) Unit Roots Test

All the test statistic, except *DEBT/EQUITY RATIO* (*LEVERAGE*), *DIVIDEND YIELD* and *REVENUE,* are greater than the critical value, with a corresponding Mackinnon p-value that are greater than the recommended 5%; hence, we conclude that there is presence of unit roots. By implication, the presence of a unit root in a series mean that there is more than one trend in these series. This therefore justifies the need to transform the data to natural logarithm. Data series for LEVERAGE, *DIVIDEND YIELD* and *REVENUE* are stationary (does not have unit roots as the p-value is significant at 5% level). The results for the Augmented Dickey-Fuller tests for all the variables are shown in the Table 3.8.1:

Table 3.8 1: The Augmented Dickey-Fuller (ADF) Unit Roots Test

Interpolated Dickey-Fuller Unit Root Test								
		Statistic	1% Critical value	5% Critical value	10% Critical value	MacKinnon p-value for Z(t)	Unit root	Stationarity
Panel A: ***Control Variables***								
ROA	Z(t)	-0.81	-3.75	-3	-2.63	0.8162	No	No

Dividend Yield	Z(t)	-10.106	-3.75	-3	-2.63	*0.000	No	Yes
Free Cash Flow	Z(t)	-3.315	-3.75	-3	-2.63	*0.0142	No	Yes
MBVR	Z(t)	-2.26	-3.75	-3	-2.63	0.1851	Yes	No
FSIZE	Z(t)	-0.781	-3.75	-3	-2.63	0.8246	Yes	No
Leverage	Z(t)	-0.86	-3.75	-3	-2.63	0.1720	Yes	No
Panel B: *DA Variables*								
TL	Z(t)	-0.05	-3.75	-3	-2.63	0.9542	Yes	No
TR	Z(t)	-0.452	-3.75	-3	-2.63	0.9011	Yes	No
DEP	Z(t)	-1.342	-3.75	-3	-2.63	0.567	No	No
REV	Z(t)	-3.416	-3.75	-3	-2.63	*0.0104	No	Yes
CASH	Z(t)	-0.818	-3.75	-3	-2.63	0.8138	No	No
TA	Z(t)	-0.669	-3.75	-3	-2.63	0.8546	No	No

3.5.5. Pearson's Correlation

In Table 3.9.1, there are strong positive correlations between *DIVIDEND YIELD* and discretionary accruals (Earnings Management) in both domestically (r=0.80, p0.05) and externally managed REITs (r=0.985). A rise in *DIVIDEND YIELD* would almost certainly result in an increase in Earnings Management. In accordance with He (2017), this paper reveals that past studies (Lintner, 1956; Skinner & Soltes, 2011) have found that paying dividends does not preclude firms from committing accounting fraud, implying that dividend paying firms may not always operate in the best interests of their shareholders. Consistent with Susanto et al. (2017), Agustia (2013), Amertha et al. (2014), and Yogi & Damayanthi (2016), *FREE CASH FLOW (FCF)* was significantly negatively associated with Earnings Management (r=-0.36, p0.05), with a weak effect in internally managed REITs and a twice less effect on externally managed REITs (r=-0.729); this means that a unit decrease in *FREE CASH FLOW (FCF)* was bound to if it is not employed to maximize shareholder earnings in the form of a profitable investment, investors will discover that the company's management is unable to give advantages to the company's owner; at the end of the day, the firm will be in a state of low growth (Jensen, 1986). When it comes to internally managed REITs, firm size (value at which the shares of a company's stock is estimated) is highly correlated with Earnings Management (EM), however this is not the case for externally managed REITs. In this sample, *DIVIDEND YIELD, LEVERAGE* (debt/equity), and *RETURN ON ASSETS* (ROA) were not found to be associated with EM.

Table 3.9 1: Pearson's Correlation

	Internally Managed REITs	Externally Managed REITs	Full Sample REITs
	DA_ln	DA_ln	DA_1n
Discretionary Accruals	1	1	1
Dividend Yield	0.8042*	0.9852*	0.8319*
Leverage_1	-0.1584	-0.2699	-0.1851
Return on Assets	-0.2266	-0.6385	-0.4734
Market Book Value	-0.1298	-0.1418	-0.1305
Free Cash Flow	-0.3616	-0.7295*	-0.5619*
Firm Size	-0.7536*	0.0809	0.0439

3.5.6. REITs management structures and Earnings Management: Multivariate OLS regression

The results of the OLS regression for testing the association between REITs management structures and Earnings Management are presented in Table 3.10.1. The dependent variable is estimated from the cross-sectional modified Jones (1991) model. The two proxies for management structures include a DUMMY variable for internally managed REITs as 1 and externally managed REITs as otherwise (0). Although Gras-Gil et al (2016) provided contrary evidence, we corroborate these findings with that of Arun et al (2015) wherein Firm SIZE is found to be negatively associated with the measure of earnings management. The negative *FIRM SIZE* coefficient term tells the change in Discretionary Accruals (DA) for a unit change in Firm Size i.e. if firm size rise by 1 unit, then earnings management decrease by -3.2 times. The results are significant at 10% level (α=-3.21, p=0.1), implying a negative relationship between *FIRM SIZE* and earnings management.

While there is no agreement in the literature regarding the effect of *FIRM SIZE* on earnings management, these findings imply that aggressive earnings management practices is not dependent on a firm/REIT being large due to the close scrutiny by investors. Contrast to Alhadab & Al-Own (2017), Bhojraj et al. (2009) and Taylor & Xu (2010), we find that the positive *RETURN ON ASSETS (ROA)* coefficient term tells the change in discretionary accruals (DA) for a unit change in *ROA* i.e. if the *ROA* values rise by 1 unit, then earnings management increase by 4.4 times (α=4.4, p<0.05). The results are significant at 5% level, implying a significant relationship between *ROA* and earnings management. With *ROA* being a measure of firm performance, these findings are consistent with extant studies (Lee et al., 2006; Dechowet et al., 1995; and El Sood, 2012); with these, it could be that REITs managers of

internal and external management classifications use earnings management to understate the current period reported earnings in attempt to reduce the current market price of the firm's common stock or adopt stock options plans that will ultimately increase share prices and consequently firm value (Alves, 2012). The negative market value coefficient term tells the change in Discretionary accruals (DA) for a unit change in market values i.e. if market values rise by 1 unit, then earnings management decrease by -2.34 (p=0.06). The results are significant at 10% level, implying weak evidence between market to book values and earnings management. Free Cash flow (contrast literature - Bukit, 2015; Nekhili, 2016; Astami, et al, 2017) – we perceive these findings are unique because REITs with high FCF situation and low growth opportunities are bound to result in low long term profitability. To conceal the impending bad performance of these new investments, corporate executives turn to negative accruals to reduce current year's earnings and smooth earnings when the negative effect of these investments occurs. Surprisingly, these results indicate that there were lower levels of earnings management in internally managed REITs compared to externally managed REITs; dividend yield, and debt equity ratios were also not significant predictors of earnings management.

We believe that there is no widespread or aggressive earnings management practice among South African internally managed REITs; yet, these findings are not consistent with the literature on the subject (Epps & Ismail, 2009; Xie et al., 2003; Beekes et al., 2004; Chen et al., 2007). We believe these findings are one-of-a-kind because of the rising popularity of REITs in South Africa and their reputation as an interesting investment option for investors in Africa, with a current market size of about $400 billion. In addition, these results are based on the fact that the administration of South African REITs is handled by organizations that adhere to stringent governance standards and are performance-driven and entrepreneurial (de Klerk, 2019; Moloi & Akinsomi, 2019). By implication, this suggests that they are focused on getting the most out of their property investments in the long term. They improve the real estate industry's transparency and accountability by implementing sound governance practices.

Table 3.10 1: Do internally managed REITs manage Earnings more than externally managed REITs: Multivariate OLS Regression

	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]	Coef	Std.Err.	z	P>z	[95% Conf.	Interval]
Internally Managed REITs							Externally Managed REITs					
DA												
1.Internal	1.306	3.661	0.36	0.722	-5.88178	8.494011	2.113	2.892	0.51	0.521	-4.1134	7.71839
Firm Size	-3.213	1.665	-1.93	**0.054	-6.47721	0.051	-3.021	2.510	-1.71	**0.161	-5.02191	0.0021
MBVR	-2.342	1.243	-1.88	**0.06	-4.77939	0.09481	-3.910	1.031	-1.54	**0.75	-4.01831	0.071027
Dividend Yield	0.721	0.7182	1	0.315	-0.68629	2.129007	0.810	0.8210	1	0.741	-0.51089	1.920281
Debt/Equity_1	0.677	0.843	0.8	0.421	-0.97436	2.330233	0.319	0.310	0.65	0.682	-0.85105	2.829102
Return on Assets	4.499	1.835	2.45	*0.014	0.901663	8.096469	4.103	1.720	2.01	*0.003	0.75631	7.038293
Free Cash Flow_1	0.137	0.460	0.3	0.764	-0.76388	1.039834	0.201	0.501	0.41	0.620	-0.82184	1.070291
Constant	48.069	37.607	1.28	0.201	-25.639	121.7784	43.012	33.103	1.31	0.318	-23.019	117.0128

NOTE: R-squared= 0.9970; Prob > chi2= 0.0000. **Significant at 5% level *Significant at 10% level. *Property, plant, and equipment (PPE) dropped due to collinearity*

3.6. Conclusion

Earlier research that has documented large discretionary accruals accompanying seasoned stock issues has done so without taking the management structure of the issuing REITs into consideration. We propose that information asymmetry concerns are more severe in an externally managed REIT, and that as a result, earnings management is more aggressive in an externally managed REIT than in an internally managed REIT in the same industry. Using a sample of 34 South African real estate investment trusts (REITs) that issued seasoned equity between 2013 and 2020, we investigate the difference in discretionary accruals between internally and externally managed REITs in South Africa. When comparing externally managed REITs to internally managed REITs, we find that the former have higher discretionary accrual amounts; even after adjusting for elements that have been demonstrated to be associated with a firm's Discretionary Accrual, these findings are not consistent across the commonly used measures of earnings management.

In this study, it is hypothesized that the composition of a REIT's board with external directors has an influence on the practice of earnings management in South Africa (Marrakchi Chtourou, et al., 2001; Shah, et al., 2009; Uadiale, 2012; Abbadi, et al., 2016). SEOs are the subject of this investigation, which demonstrates how accrual management may be utilized to achieve financial objectives. In order to "achieve the objectives," it is standard practice to manipulate earnings in order to increase profits. Previous research have reached varying conclusions in a variety of settings. Accruals decline with external management, but there is no statistically significant effect of external management on earnings manipulation, as Kim & Yoon (2008a) and Mazumder (2016) demonstrate. Additionally, scholars assert that externally managed firms, particularly those with a high and stable proportion of foreign capital in their capital structure, engage in less profits management than internally managed firms (Mohd-Sanusi, & Hermawan, 2017 and Guo et al., 2015).

Shayan-Nia et al. (2017) stated specifically that they can limit upward earnings management owing to discretionary expenditure but not due to the work cycle. According to Guo et al. (2015), firms with external management also lower earnings manipulation, but through net cash in firms listed in Japan. On the other hand, Udawatte (2020) cites the information asymmetry between domestic and foreign investors as one reason why managers in firms are more inclined to manage earnings.

For the first time in South Africa, we find evidence that financial sheet manipulation is associated with the extent of external management of REITs, indicating that the REITs board of directors does not benefit significantly from external directors in monitoring the firm's management of earnings, which is consistent with Park & Shin (2004). According to a few reasonable variables, external management of real estate investment trusts (REITs) is inefficient in regulating earnings management in South Africa throughout SEO period. Due to a lack of financial acumen and access to critical information, external directors may be unable to identify and correct earnings management in the majority of cases. External directors may also be disinterested directors as a result of their lack of financial interest in the firm over which they preside. In addition, if there are a large number of powerful shareholder CEOs, it may be difficult for CEOs to properly oversee earnings management.

In addition to having a number of practical implications, this research should be of particular interest to the relevant securities exchange regulatory body in South Africa, which is currently engaged in an anti-earnings management campaign, and the Accounting Standards Board (ASB), which has proposed changes to its standards setting process in order to shift away from a rules-based approach to principles-based standards setting. The study's findings imply that good corporate governance is a critical safeguard for stakeholders in exceptional circumstances when REITs have special incentives to manage earnings; as a result, it is suggested that REIT corporate governance is important, despite being overlooked in some circumstances. It is possible that reducing accounting discretion may increase the informativeness of earnings since it will confine earnings management and encourage the comparability of outcomes among REITs (Fishman & Hagerty 1990). Specific to South African real estate investment trusts, policymakers as well as nominating committees of the board of directors may wish to take note that financial competence is an important quality of external directors in order to effectively oversee earnings management. Future studies could include alternative measures of earnings management (beyond total accruals, as used in this study).

CHAPTER FOUR

FEMALE BOARD REPRESENTATION AND LEVEL OF EDUCATION ENHANCES REITS PERFORMANCE

4.1. Introduction

Women's representation on corporate boards of directors has been the focus of increased research over between 2010 and 2020 (Carter et al., 2010; Hillman et al., 2007; Joecks et al., 2013, Liu Wei & Xie, 2014; Perryman et al., 2016). Women are underrepresented in corporate boardrooms, according to these studies. Female representation in the boardroom, on the other hand, may facilitate access to a larger pool of human capital, which may have significant implications for a company's direct competitors and efficiency (Sealy et al., 2012; Dezsö & Ross, 2012); this argument outweighs social and moral concerns. Following corporate governance scandals in the United States (Enron and WorldCom), Italy (Parmalat's false bankruptcy), and the global financial crisis of 2007–2009, firms have faced tremendous pressure to encourage gender diversity on corporate boards; consequently, this leads us to ask: Would things be different now that more women serve on corporate boards of directors?

Diversity is critical, not just in terms of gender and race, but also in terms of educational experience, background, position, and economic status (Arfken et al., 2004). If all board members share the same demographic features, it is more probable that "group mentality" and potentially unethical practices would arise. A diverse board of directors enables a more speedy examination when actions or choices do not align with everyone's moral, ethical, and business perspectives and understanding, the board can respond promptly. This prevents the organization from participating in future destructive activity.

In some European nations, including France, Germany, Italy, Norway, and Spain, as well as one African country, Kenya, a legislative quota of between 30% and 40% for women on corporate boards of directors has been imposed. According to Matsa & Miller (2013), the gender quota led in the appointment of several inexperienced women to boards, which affected the company's financial performance; this is similar with Ahern & Dittmar (2012) and Wang & Kelan (2013). According to Terjesen & Singh (2008), women make up fewer than 15% of corporate board members in the United States, the United Kingdom, Canada, Australia, and many European nations, but as little as 0.2% in several Asian countries. In South Africa, the average percentage female directors on the board was 16% with the maximum being 50% (Nel et al., 2022).

On the other side, the UK has opted for a voluntary approach rather than a quota-based policy. The goal of the voluntary way is to allow for a fundamental shift in the board culture within and among companies, rather than imposing the change from the outside, which may result in an increase in the number of female board members. Despite the voluntary nature of the UK's approach, the proportion of women on corporate boards is growing (Brahma et al., 2021). Female representation in FTSE 100 firms increased gradually from 14% in 2005 to 27% in 2016, the highest level in the prior decade, before decreasing to 25% in 2017. According to this statistics, an increasing number of women have penetrated British boardrooms during the previous decade. Carter et al. (2010) compiled empirical evidence on the effect of gender diversity on business performance; comparable research (Campbell & Mnguez-Vera, 2008; Adams & Ferreira, 2009; MartnUgedo & Minguez-Vera, 2014; Wellalage & Stuart, 2013; Darmadi, 2013; Liu et al., 2014) elicited more arguments.

According to this, a voluntary approach to female board involvement may result in the selection of experienced women rather than filling quota gaps, which may have considerable benefits for board strategic control and effectiveness, as well as the company's value. Additionally, in the past, the number of female directors and a gender dummy were the most often cited measures of gender diversity. However, there is a danger that just increasing the number of female board members would not improve a company's performance. Due to the critical mass theory, it is highly improbable that a company's performance would improve considerably with merely two or more women on its board of directors (Liu et al., 2014; Konrad et al., 2008; Kristie, 2011). According to Kristie (2011), 'one is a token, two is a presence, and three is a voice' when it comes to female diversity in the boardroom. While previous studies have explored the degree of female representation in relation to the critical mass theory, this problem has received less attention. As a result, the disparate findings in the present research may come as no surprise.

For South Africa, the King IV Report on Corporate Governance and the JSE rules both include the development of diversity strategies and objectives, but progress has been slow. According to a Business Engage study issued in October 2020, while the number of organizations that have established gender objectives has increased from 81 to 104, twice as many companies have not set any targets at all. Only 62 of the 104 who did establish goals actually met them. According to PWC's newest Non-executive Directors report, boards in particular continue to fail to effectively reflect the country as a whole, or the organization's dynamic stakeholder profile. Some encouraging figures show that non-executives are still mostly white (48%) and

male (71%). Asian and colored representation appears to be in line with their representation in the overall population; nevertheless, the African group remains under-represented.
According to current statistics, female CEOs lead 5.2 percent of S&P 500 companies, while female directors hold 21.2 percent of board leadership positions (Catalyst, 2017). Due to the absence of quota rules in South Africa, the REIT market serves as a laboratory for studying the relationship between REIT performance and gender diversity. It is clear from Schrand et al (2018) that US Equity REITs have developed into a stand-alone investment vehicle for institutional investors. The paper also noted that gender diversity has a different influence on REITs than they do on other C corporations because of their unique legal structure. Because the five largest REIT shareholders cannot own more than 50% of the company, REITs must rely on sophisticated internal monitoring mechanisms rather than rely on huge blockholders to conduct thorough external monitoring. According to Ghosh & Sirmans (2003), for example, a company's performance suffers when the CEO holds both the position of CEO and chairman at the same time. A study by Feng et al (2005) indicates that firms with excellent governance (small boards, a majority of outside directors, and a defined function for the CEO/chairman) perform better on average, although the effect is only significant for the best and worst boards. Investors in Malaysian publicly listed property firms prefer small boards with a bigger number of executive directors, according to Shakir (2008). Similar findings were made by Kohl and Schaefers (2012), who found that investors in European-listed real estate enterprises prefer smaller boards and greater executive management ownership. For REITs with low payout ratios, Bauer et al (2010) find that REITs with a good governance grade perform better.

It appears that one of the most critical criteria in deciding whether a firm will perform is the educational level of the women who serve as its directors. This is because, according to Erhardt et al (2003), diversity research in most cases focuses only on observable features of female directors, such as their country of origin and age. Contrary to this, non-observable female director characteristics such as education are not as often examined. As a result, the findings of a few research on the influence of female directors' educational level are discordant. Thus, it is intended that this research will contribute to the body of knowledge about how female directors' education level affects REIT performance. Return on assets (ROA), Tobin's Q, and other measures have been used in past gender studies to evaluate firm performance (Adams & Ferreira 2009; Campbell & Mnguez-Vera 2008; Carter, et al., 2010). Because of this, we are confident that the return on assets (ROA) rather than other metrics is a better indicator of a company's profitability in proportion to its total assets in panel regression results.

ROA is an indicator of how well management is using its assets to generate earnings. When calculating a company's return on assets (ROA), the company divides its annual earnings by its total assets. As a percentage, the return on investment (ROI) may be calculated. In certain circles, this is referred to as "return on investment." Because they prefer to use operational returns before interest expense when computing net income, some investors incorporate interest spending back into the net income calculation.

According to South African studies, the relationship between female board representation and company success has been thoroughly explored; yet, the literature on the South African setting appears to be inconsistent. Globally and in South Africa, there has been an increasing emphasis on board gender diversity, despite the fact that just one-fifth of all directors at publicly traded companies are female (Weir et al., 2020). According to the analysis, having a female director on the board has a considerable influence on the firm's ultimate success. Similarly, Mans-Kemp & Viviers (2015) discovered a substantial correlation between female board inclusion and financial performance in South African firms between 2002 and 2012. According to Willows & van der Linde (2016), as of June 2013, women held the majority of non-executive positions on the boards of directors of the JSE's Top 40 listed companies, accounting for an average of 18.78 percent of the board of directors. Additionally, the study discovered that while women's representation appeared to have a positive effect on corporate performance when accounting-based performance metrics (such as ROA and ROE) were used, it appeared to have a negative effect when market-based performance metrics (such as Tobin's Q) were used.

Another finding was that having a higher proportion of female directors on boards increases firm value, according to Gyapong et al. (2016), who used data gathered from 245 South African publicly traded companies between 2008 and 2013. In a study of 84 South African publicly listed companies, der Zahn & Mitchell (2004) identified a relationship between a company's performance and the number of female directors on the boards of directors. Mkhize & Msweli (2011), on the other hand, claim that female-led firms do not outperform their male-led counterparts. In similar vein, Lallo (2017) that the number of female directors on the boards of real estate firms in South Africa is insignificant with a total of 33 publicly traded real estate investment firms included in the research. On a global scale, some studies (Campbell & Mnguez-Vera, 2008; Erhardt et al., 2003; Liu et al., 2014; Liu et al., 2014) found a positive relationship between gender diversity and firm performance; and in contrast, other scholars had a different school of thought: (negative relationship - Syamsudin et al., 2017; Bell et al., 2011;

Rose, 2007; Campbell & Mnguez-Vera, 2008) having found that there is no relationship between gender diversity and firm performance.

For South African REITs, the focus of this study stems from the unique regulations that REIT structures must satisfy; Han (20006) noted that it would be important to examine the structure of real estate boards and how they affect the performance of real estate trusts. There is a paucity of research in this area, which means that enhanced investment decisions will not be possible. Only by addressing these issues can the government come up with laws that can promote, keep or decrease women in varied businesses. An important contribution to the body of knowledge is provided by this study, which examines the relationship between gender diversity on corporate boards and financial success in developing nations, which have a distinct economic and cultural context than developed ones. Research into how board diversity affects business performance can be conducted in South Africa.

South Africa is a country with a wide range of ethnic backgrounds (made up of people from almost every part of the world, including Black Africans, European Whites or Caucasians, Black Africans, Chinese, Indians, Mixed Race and in this environment, it is possible to get fresh insights into the relationship between board gender diversity, their level of education and firm performance. For example, in Spain, Norway, the Netherlands, and France, quota legislation has been implemented to boost the number of women on the board of directors.

Jonty & Mokoteli (2015) state that the Employment Equity Act of 1998 mandates that any company with more than 100 workers must guarantee that its workforce includes a mix of non-whites and whites in equal measure, including the top management. Black men and women are supposed to be given particular consideration over the rest of the non-white population. The JSE's Listings Rules and King III do not specify any specific goals for companies. Despite this, they recommend that every firm take a look at its board to see if it is diverse enough in terms of both talents and demographics (age, ethnicity and gender). As a result, South African corporate boards are anticipated to better reflect the country's diversity and to be more effective. The remaining portion of this work is organized in the following manner. The literature review on existing research on the relationship between gender diversity and performance is discussed in section 4.2; then, the testable hypotheses regarding gender diversity within REITs are developed in section 4.3. Data and sources are discussed in section 4.4 while the results of the

study are presented in the section 4.5. The last section brings the study/essay to a close in section 4.6.

4.2. Literature Review

4.2.1. Theoretical Perspectives of Board-Female Inclusion and Firm Performance (ROA)

4.2.1.1. Female Directors and Firm Performance

Current research has found five hypotheses to explain the relationship between board gender diversity and company performance: the human capital theory, social psychology theory, resource dependence theory, agency theory and critical mass theory (all of which are discussed further below). Pfeffer & Salancik (1978) noted that with the resource dependence theory, firms should attempt to recruit and hire board members who will best complement their current resource profile and who will be able to introduce new types of human and social capital to the organization; this is consistent with Siciliano (1996). Furthermore, Goodstein et al (1994) and Pfeffer (1973) provided evidence noting that this theory implies that increasing the size and diversity of the board of directors might result in a strong relationship between the firm as well as its macroenvironment.

Theories (Hillman & Dalziel, 2003) claim that board diversity helps to maintain essential resources such as the human resource of board members, advice and counsel, lines of communication, and legitimacy of the organization; Pfeffer & Salancik (2003) later corroborated this. By implication, a firm must be able to assemble a board of directors comprised of persons who have a broad range of experience across important demographics and who can lend credibility and prominence to the organization (Sealy, 2010). For example, in the United Kingdom, Singh et al (2008) discovered that nearly a quarter of women appointed to FTSE100 companies between 2001 and 2004 had previous FTSE experience and held concurrent directorships, with approximately half having experience in financial institutions, as opposed to their male counterparts who came from an engineering background (Singh et al. 2008). The researchers also discovered that about a quarter of women appointed to boards of directors have previously held senior roles in the public sector, with nearly a third having previous leadership experience in the volunteer sector.

A theory developed by Becker (1964) that refers to a person's education, talents, and experience as adding to productive capacities that benefit both the individual and his or her company is called human capital theory. According to Kesner (1988), directors contribute to the board of

directors a variety of distinct and large inventories of human capital. As Oakley (2000) asserted, male gatekeepers can sometimes impede women from achieving organizational benefits such as training and development opportunities or promotions and salary increases. In a similar spirit, it is commonly believed that women do not have enough human capital to be considered for board posts (Davidson & Burke, 2000). Singh et al. (2008), in their study of multiple human capital dimensions of FTSE100 firms, found that female female managers with a university degree have a positive performance effect, while Smith, Smith et al (2006) found that female managers with a university degree have a negative performance effect. Smith et al (2006) found that female managers with a university degree have a positive performance effect, while Singh et al. (2008) found that women are more likely to have an MBA degree and international understanding. Davies (2011) discovered that women account for 60 percent of university graduates in both Europe and the United States. In the United Kingdom, women account for 55 percent of university graduates and 42 percent of the entire workforce, according to official statistics. Taking into consideration these statistics, it is acceptable to assume that the inclusion of women on FTSE100 boards will improve human capital and improve corporate performance. When there are conflicts of interest between principals (such as shareholders) and agents (such as managers), agency theory is concerned with how the corporate board of directors plays a key role in managing and addressing these disputes (Jensen & Meckling, 1976). The agency theory's perspective on the board is that diversity strengthens the board's monitoring responsibility. The agency theory was used to investigate the relationship between gender diversity on a board and firm value in a number of studies. For example, Carter & Simkins (2003), Adams & Ferreira (2009) and Adams, Nowland, & Grey (2011) all used agency theory to investigate the relationship between gender diversity on an advisory board and firm value. Adams & Ferreira (2009) and Adams et al. (2011) discovered that female directors had superior monitoring abilities because they think independently, and that board gender diversity promotes management responsibility by increasing board meeting attendance and CEO accountability, among other things. Female directors also fulfill the duty of independent directors by boosting the effectiveness of board oversight (Adams & Ferreira, 2009). Similar findings have been made by other researchers such as Jurkus et al (2011) who found that gender diversity lowers agency costs for businesses in less competitive marketplaces when strong external oversight is lacking.

Mattis (2000) asserted, in the framework of social psychology theory, that boards of directors in the United States give preference to 'branded women' directors who are graduates of Ivy League colleges, hence reflecting upper-class social standing. According to a study conducted

by Sealy et al (2007), female directors in the United Kingdom were more likely than male directors to hold a title in the late 1980s and early 1990s. According to Westphal & Milton (2000), the majority group on a board of directors can have a substantial impact on the decision-making process, and in diversified boards, minorities may be unable to exercise influence on the board owing to the dynamics of the group. Several authors, including Campbell & MinguezVera (2008), and Lau & Murnighan (1998), have claimed that gender diversity may result in opposing viewpoints on the board of directors and a longer timeframe for making decisions. On the other side, Kim et al (2009) found that board diversity boosts the degree and speed with which senior management teams are able to take strategic action skills into account. As per statistics, family-controlled firms are more likely than large public limited firms to have a higher proportion of female members on management boards, indicating that the former are "tougher" in terms of giving possibilities for women to join the board (Darmadi, 2013). However, it is crucial to note that the higher proportion of females on management boards may be related to the necessity to maintain control over family-owned businesses, as previously stated.

The critical mass theory was developed in response to this context by Kanter (1977a, 1977b), who asserted that female inclusion in the boardroom will mitigate the consequences of tokenism, which occurs when women are more likely to be individually distinguished. Following research in sociology and organizational behavior literature that explore critical mass, such as Konrad et al. (2008), it has been suggested that dynamism in the boardroom is improved when three or more women are present; this is consistent with Konrad & Kramer (2006). From these studies, the inclusion of three women in the boardroom normalizes women's participation in the boardroom above tokenism and has a favorable influence on company choices. A study conducted by Torchia et al (2011) found that including a critical mass of more females on a board of directors enhances the amount of business innovation, which is mediated by board strategic objectives. Joecks et al. (2013) augmented the critical mass theory to examine the relationship between board gender diversity and firm performance, and their findings confirmed that the presence of 30 percent or more females on a company's board of directors leads to an improvement in the firm's return on equity (ROE). In a similar vein, Liu et al. (2014) discovered that critical mass of more females on a company's board of directors had a greater influence on the performance of the company than critical mass of two or more women.

4.2.1.2. Educational Level of Female Directors and Firm Performance

There have been few research on the relationship between education and firm performance; Erhart et al. (2003) for example, proposed a convincing explanation for this phenomenon. According to the article, diversity is examined both in terms of their characteristics and cognitive capacities. Additionally, observable characteristics such as age, gender and ethnicity are most of the time included in studies of this nature. Education level is used to illustrate unobservable characteristics in this study. According to Erhart et al. (2003), the majority of research on diversity focus exclusively on apparent characteristics, excluding the effect of unobservable factors on diversity.

Carpenter & Westphal (2001) assert that a director's educational background has a good effect on his or her capacity to contribute to the board. The authors suggest that further education entails specialized knowledge, which results in improved strategic decision-making. Certo (2003) later asserted that female directors have a greater degree of educational attainment, which helps to the legitimacy and credibility of their firms. Additionally, Arena et al (2015) revealed that the educational level of directors had an effect on board performance. The paper discovered a negative correlation between directors' educational attainment and firm performance, which they believe is caused by boardroom conflict. Females with a higher education may be expected to be more eager to demonstrate their skills and enforce their viewpoints, resulting in interpersonal conflict and a negative board composition (Petrovic, 2008). There is a possibility that the board's conflict of interest will have a negative influence on the firm's overall performance (Simons & Peterson, 2000). This is a follow-up research to the prior ambiguous findings on the effect of directors' educational degree on business performance. In this study's case, we are interested in examining the effect of education level on a sample of emerging market consumers.

4.3. Hypothesis Development

4.3.1. Board Female Inclusion, Educational Level and Firm Performance (ROA)

The majority of empirical research on gender diversity and company performance have employed three measures of diversity, namely, the proportion of female directors, the gender dummy, and the Blau-Index, as measures of diversity. Empirical data (Campbell & Minguez-Vera, 2008) on the relationship between female inclusion and corporate success has been inconclusive in both developed and developing markets. Gender diversity has been found to be associated with improved firm performance in several studies; some others include Carter et al.

(2003), Martin-Ugedo & Minguez-Vera (2014), Ngyuen et al (2015). Female representation on corporate boards of directors is associated with more effective corporate governance, according to Terjesen et al (2009). As previously observed by Adams & Ferreira (2009), gender diversity can provide greater monitoring and operate as an extra governance tool that would help firms characterized by inadequate governance practices (Gul et al., 2011; Nguyen et al. (2015),. Women's empowerment, according to Perryman et al. (2016) lowers the risk level of a company. A favorable association was shown by Nielsen & Huse (2010) between the proportion of female directors on boards of directors and board strategic control.

Conversely, female inclusion on boards have been shown to reduce shareholder value in firms with effective governance, according to Adams & Ferreira (2009), who found that applying gender quotas may result to over-monitoring in those companies. In same vein, Wellalage & Locke (2013) argued that gender diversity results in a decrease in company performance as well as an increase in the cost of doing business. In Shrader et al (1997) and Farrell & Hersch (2005), evidence indicates that here is no significant relationship between female inclusion on the boards and company performance; other studies who provided evidence in this light were conducted by Carter et al. (2010), Dale-Olsen et al (2013), and Rose (2007).

In the context of JSE listed REITs, we apply Kanter's (1977a, 1977b) critical mass theory to see if female boardroom inclusion affects firm performance. We use two dummy variables, as suggested by Liu et al. (2014) and Joecks et al. (2013), to assess the proportion of women in REIT boards. If there are any female directors on the board, the dummy Diversity 1 has a value of 1. If there are no female directors on the board, Diversity 2 is a dummy that is set to zero. We believe that a critical mass of more female directors will lead to a favorable and considerable rise in the firm's performance. Given tokenism is expected to predominate in the REIT industry, which is dominated by men, we anticipate that including a female director will have impact on decision-making. In Boulouta (2013), increased female representation in the board of directors of REITs might serve as a proxy for greater corporate social responsibility because of the REITs' unique governance structure (Harjoto et al., 2015). As a result, companies that take use of the advantages of diverse teams may see better results.

In terms of education, multiple earlier research have discovered a favorable effect of board education on business success (Bantel & Jackson, 1989; Hambrick et al., 1996; Smith et al., 1994). This demonstrates how variety may help to increase viewpoints, knowledge, and decision-making capacity. Higher education qualifications broaden knowledge, stimulate

consideration of alternatives, and hone problem-solving skills (Cox & Blake, 1991). A board with a Ph.D. becomes a source of fresh policy ideas, deeper research, and a unique viewpoint on key challenges (Westphal & Milton, 2000). Women, according to Singh et al. (2008), bring a variety of foreign viewpoints to the table. Smith et al. (2005) explore the relationship between women on boards of directors and firm performance in Denmark from 1993 to 2001 using a sample of 2500 enterprises. Their study indicates that the degree of education a woman has as a board member has a beneficial influence on a company's success.. According to Wan Yusoff (2010), Malaysian women are educated.e Numerous earlier studies have established that the completion of a degree by an employee has a favorable effect on the company's performance (Bantel & Jackson, 1989; Hambrick et al., 1996; Smith et al., 1994). In other words, this demonstrates the critical nature of a varied workforce in terms of opinion and decision-making. Enhancing problem-solving abilities with a bachelor's degree is a significant advantage of higher education (Cox & Blake, 1991). A board member with a Ph.D. may contribute novel policy ideas and in-depth research, as well as a new perspective on critical strategic issues (Westphal & Milton, 2000). According to Singh et al. (2008), women bring a fresh perspective to the boardroom. Smith et al. (2005) examined 2500 Danish firms from 1993 to 2001 to see whether there was a relationship between the number of women on the board of directors and the company's success. According to their research, having a high percentage of female board members has a good influence on a firm's success. According to Wan Yusoff (2010), Malaysia has a large number of educated women. In Malaysia, the effectiveness of a board is determined by its expertise and education credentials are critical components of a board's performance in Malaysia. With the above, the study hypothesizes a relationship among female directors, their level of education and firm performance; hence, the hypotheses is further decomposed as:

H1A: Including female directors on the board of REITs will increase the REITs performance

H1B: Including female directors on the board of REITs will not increase the REITs performance

H2A: Women’s education level as directors positively affects REITs performance

H2B: Women’s education level as directors negatively affects REITs performance

4.4. Sample and Data Sources

The initial sample includes all of the REITs listed on the IRESS Expert database. This database comprises all real estate investment trusts (REITs) whose yearly trading volume exceeds 5% of their total market capitalization. The JSE All-Shares index, which comprises listed real estate investment trusts of all sizes across South Africa serves as a helpful baseline for performance comparisons. The relationship between female representation on boards of directors and firm performance is highly responsive to the involvement of small firms on the board of directors (Cashman et al., 2012). We gathered data over the period between 2013 and 2020, during which time the nomination of women to corporate boards of directors was entirely optional. As a result of the evolution of the REITs regime, we begin the sample in 2013; we then follow the literature (Sila et al., 2016) in excluding other firms in order to prevent the special characteristics of these firms potentially biasing the results; this being consistent with Liu et al (2014) and Matsa & Miller (2013).

According to Garca-Meca et al. (2015), the boards of directors of banks are distinct somewhat from non-financial companies. Apart from that, because they are governed in a different manner, directors of financial and real estate businesses are exposed to larger liability risks than directors of non-financial organizations (Adams & Mehran, 2012). Recognizing the structural distinctions between non-financial and financial organizations, a number of studies have focused on the governance of financial institutions (e.g., Garca-Meca et al., 2015; Pathan and Faff, 2013; Garca-Meca et al., 2015; Pathan and Faff, 2015). According to Adams and Mehran (2012), the discrepancy between research on non-financial firms and studies on financial companies is explained by the peculiar dynamics of regulatory oversight of financial institutions in the United States. Also excluded from the index were real estate investment trusts (REITs) with missing or inconsistent corporate governance, ownership, or financial data, which accounted for about 23 percent of the JSE All-Shares index market capitalization in December 2020. A total of 35 REITs (REITs with women on board – 29; REITs without women on board – 6) were covered by the final unbalanced sample, which consisted of 35 REITs-year observations during the course of the research. Financial information was gathered from the IRESS Expert database as well. The IRESS Expert database was used to gather information on REIT boards that included and did not include female directors from the Johannesburg Stock Exchange's Stock Exchange News Service (SENS).

4.4.1. Measures of Performance

In empirical studies (Adams & Ferreira, 2009; Martn-Ugedo & Minguez-Vera, 2014), majority of studies have utilized either ROA, ROE, PRICE/NAV or Tobin's Q as measures of company financial performance (Garca-Meca et al., 2015; Nguyen et al., 2015). Following the findings of these research, we adopt return on assets (ROA) and funds from operations (FFOs), which is the most widely adopted measure for financial performance and operational performance respectively. The return on assets (ROA) of a company is calculated as the ratio of yearly net income to average total assets throughout a financial year. Barber & Lyon (1996) provided extensive documentation on the advantages of using return on assets (ROA) as a measure of financial performance. They claim that, in contrast to net income, return on assets (ROA) takes into account the size of the company, making it simpler to assess how well one firm is functioning in comparison to another. The FFO is a measure of cash flow generated from business operations that is often used by Real Estate Investment Trusts – REITS; the FFO of a firm is suggested by Schrand et al (2018) as a measure of operational performance

4.4.2. Measurement of independent and control variables

The major variables of interest in this study are the inclusion (gender diversity) and education levels of the board of female directors represented as *WOMENONBOARD and WOMENDIR_EDU* respectively in Table 4.1.1. In the same vein as Liu et al. (2014) and Joecks et al (2013), we analyze levels of female representation in the boardroom in accordance with the critical mass theory, using two dummy variables to measure representation (Kramer et al., 2006) and level of education. First, if there are three (3) and above female directors present in the boardroom of South African REITs, the dummy variable is set to 1; and otherwise (0 - less than 3). For level of education, we classify and set the possession of higher degrees (Postgraduate Diploma, Masters and Doctoral) to 1; and set lower educational attainments (Bachelors [Honours], Bachelors, College, Matriculation/High School) to 0. Apart from this, we also use the Shannon Index of equitability to measure and ensure that diversity is computed; The use of the Shannon indices is particularly useful in our study, because they take into account the number of gender categories, as well as the distribution of board members between them. The Shannon index is more sensitive to small changes in the gender composition of boards, given that it is calculated as a logarithm of gender diversity (Campbell & Minguez-Vera, 2008). The use of the index allows us to check for consistency and robustness in the

results. In this case, a similar hypothesis is developed as for female representation, because greater gender diversity may lead to more imagination in company strategies and hence in better firm performance. Besides, diversity may also improve the decision making of firms from different perspectives due to differences in the cognitive levels of males and females.

Table 4.1 1: Measurement of Variables

Variable name	Definition
Dependent variables	
Return on assets (ROA)	ROA is measured as the ratio of a firm's annual net income to average total assets during a financial year
Funds from Operation (FFO)	FFO is a measure of cash flow generated from business operations that is often used by Real Estate Investment Trusts – REITS
Price to Net Asset Value ratio (PRICE/NAV)	Price to Net Asset Value ratio: shows the company's share price to the net asset (or book) value per share
Return on Equity (ROE)	ROE is a measure of financial performance calculated by dividing net income by shareholders' equity
Independent variables	
Women on Board	Dummy variable that takes the value of 1 if there are three (3) and above female directors and zero if there are less than 3 female directors
Female director level of education	Dummy variable which represents the level of education of female directors on a REIT's board; for higher level of education (PhD, MSc, MBA), it is set to 1. For lower level of education (Bachelors Honours Degree, Bachelors, Diploma and High School), it is set to 0.
Shannon Index of equitability	specifies whether the diversity or equitability index is computed
Control variables	
Board size	Board size is the total number of directors
Firm size (in $000)	The value at which the shares of a company's stock
Firm age	Firm age is the natural log of the number of years a firm is listed on the exchange
Leverage	Firm debt ratio (leverage) is defined as the total debt divided by the total assets of the firm
Dividend Yield	Dividend yield: The financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage
Price to Book	Price to Book: is the ratio of the market value of a company's shares (share price) over its book value of equity
Total Assets	Total Assets: measures the efficiency of a company's assets in generating revenue or sales. It compares the dollar amount of sales (revenues) to its total assets as an annualized percentage
Market to Book Value Ratio	Market to Book value Ratio: The measure is used to equate a company's available net assets to the price at which the stock is sold
Inflation Adjusted Return	Inflation adjusted return: the rate of return that takes into account the inflation rate over the time frame. The inflation-adjusted return metric's aim is to expose the return on an investment after taking inflation into account.

The control variables for the purpose of the study are being discussed. The age of the firm, the size of the firm, and the leverage (debt) ratio of the firm are all important factors to consider.

In finance, firm age is defined as "the natural log of the number of years a firm has been publicly traded," and firm "size" is defined as "the natural log of the amount of money a company has in its bank account." Due to the fact that this study attempts to evaluate boardroom gender diversity of publicly traded REITs, especially those listed on the JSE, the age of firms that are publicly traded has been employed in this research. The debt-to-asset ratio of a company is defined as the entire amount of debt divided by the total amount of assets. To compute performance using proxies (ROA, ROE, PRICE/NAV and FFO), we utilize the OLS specification (regressions below):

$$ROA_0 = \alpha_0 + \alpha_1 * ControlVariables + \alpha_2 * WomenonBOARD + + \alpha_3 * WomenDir_EDU$$

$$PRICE/NAV_0 = \alpha_0 + \alpha_1 * ControlVariables + \alpha_2 * WomenonBOARD + + \alpha_3 * WomenDir_EDU$$

$$ROE_0 = \alpha_0 + \alpha_1 * ControlVariables + \alpha_2 * WomenonBOARD + + \alpha_3 * WomenDir_EDU$$

$$FFO_0 = \alpha_0 + \alpha_1 * ControlVariables + \alpha_2 * WomenonBOARD + + \alpha_3 * WomenDir_EDU$$

4.4.2.1. Distribution of Female Representation and their Level of Education (SA REITs Board

There are varying compositions of female representations and their level of education on 29 South African REITs (SA REITs). In Table 4.2.1, there is an average of three (3) female directors with an average level of education as Bachelors Degree. In terms of the level of education, it would be recalled that extant studies had supported that the level of education of female directors improve firm performance (Carpenter & Westphal, 2001; Certo, 2003 and Arena et al., 2015); this is in difference to other schools of thought (Simons & Peterson, 2000; Petrovic, 2008) who reckoned that the higher education attainments of female directors causes conflicts and consequently affect firm performance. The highest level of education of female directors on South African REITs is a Doctorate degree while the lowest is a Diploma. In particular, this study recognizes Ulana van Biljon, operations chief at Emira property fund; Laila Razack, Chief Financial Officer, Equites Property Fund and Ipeleng Mkhari, SA Corporate Property Fund *(she was among the first black women to be on the board of a JSE-listed property company).* These women serve as role models for future generations.

Table 4.2 1: Distribution of Female Representation and their Level of Education (SA REITs Board) – 2013 - 2020

South African REITs	Total Number of Directors	Number of Female Directors	Level of Education

Accelerate Property Fund Ltd	5	1	a. Masters Degree
Arrowhead Properties Ltd	6	1	a. Postgraduate Diploma
Capital & Regional Plc	4	2	a. Bachelors Degree b. Bachelors Degree
Delta Property Fund Ltd	11	6	a. Masters Degree b. Bachelors Degree c. Bachelors Degree (Honours) d. Bachelors Degree e. Masters Degree f. Bachelors Degree
Dipula Income Fund Ltd A	5	1	a. Bachelors Degree (Honours)
Emira Property Fund Ltd	6	3	a. Bachelors Degree b. Masters of Business Administration c. Bachelors Degree (Honours)
Equites Property Fund Ltd	12	5	a. Postgraduate Diploma b. Bachelors Degree c. Bachelors Degree (Honours) d. Doctorate e. Postgraduate Diploma
Fairvest Property Holdings Ltd	5	1	a. Bachelors Degree
Fortress Reit Ltd A	6	3	a. Bachelors Degree b. Bachelors Degree c. Bachelors Degree
Growthpoint Properties Ltd	12	6	a. Masters of Business Administration b. Bachelors Degree c. Bachelors Degree (Honours) d. Masters Degree e. Bachelors Degree (Honours) f. Bachelors Degree (Honours)
Hammerson Plc	11	4	a. MBA b. Bachelors Degree (Honours) c. Bachelors Degree d. Bachelors Degree (Honours)
Tsogo Sun Hospitality Property Fund Ltd	5	2	a. Bachelors Degree b. Bachelors Degree
Hyprop Investments Ltd	9	3	a. Bachelors Degree b. Bachelors Degree c. Bachelors Degree

Indluplace Properties Ltd	6	2	a. Diploma b. Bachelors Degree
Investec Property Fund Ltd	6	2	a. Bachelors Degree b. Bachelors Degree
Liberty Two Degrees	8	4	a. Bachelors Degree b. Bachelors Degree c. Bachelors Degree d. Doctorate Degree
Octodec Investments Ltd	7	3	a. Bachelors Degree b. Bachelors Degree c. Masters of Business Administration
Orion Real Estate Ltd	9	4	a. Masters Degree b. Postgraduate Diploma c. Bachelors Degree d. Bachelors Degree
Rdi Reit P.L.C		-	-
REBOSIS PROPERTY FUND LTD B X 2	8	4	a. Bachelors Degree b. Doctorate Degree c. Bachelors Degree d. Bachelors Degree
Redefine Properties Ltd	9	4	a. Bachelors Degree (Honours) b. Bachelors Degree c. Masters of Business Administration d. Bachelors Degree (Honours)
Resilient Reit Ltd	7	3	a. Bachelors Degree b. Masters of Business Administration c. Bachelors Degree (Honours)
Sa Corporate Real Estate Ltd	7	4	a. Masters Degree b. Masters of Business Administration c. Bachelors Degree d. Bachelors Degree
Safari Investments Rsa Ltd	5	1	a. Doctorate Degree
Spear Reit Ltd	5	2	a. Bachelors Degree (Honours) b. Masters of Business Administration
Stor-Age Property Reit Ltd	6	2	a. Bachelors Degree b. Bachelors Degree
Tower Property Fund Ltd	6	2	a. Bachelors Degree b. Bachelors Degree
Vukile Property Fund Ltd	8	3	a. Doctorate Degree b. Masters Degree

Author's Compilation (2021)

4.5. Results

4.5.1. Summary Statistics

Table 4.3.1 represents the descriptive statistics for the sample. It indicates the number of observations, the mean, standard deviation and the minimum and maximum values for each of these variables. The return on assets in this instance has a mean of 6.78 and a standard deviation of 6.97. These values are fairly close to one another which indicates that the distribution of return on assets on REITs is almost symmetrical. However, the minimum and maximum values have a range of -7.89. The median amounts to -3.95 which means that the ROA is positively skewed because the mean is greater than the median. A positively skewed distribution is desirable to investors as it would mean greater returns as compared to losses. Observing the debt-to-equity ratio, it has an average/mean of 8.41; by implication, this means that there is an average of R8.41 of debt for every R1 of equity. Theoretically, it tells us that REITs are risky because a good debt-to-equity ratio should be below 1. However, because REITs are fixed-asset heavy, it is normal for them to have a debt-to-equity ratio above 2. The return on equity for the study's sample of REITs has a minimum value of -483.65 and a maximum value of 99.11; the range between the two is quite high. This is risky because it would make it difficult to predict how much stakeholders should expect in returns. The average/mean price per share (Price/NAV) of the REITs is R5.56, with the lowest being 0.01 and the highest being R299.76. As at 2021, an average of 85% of REITs have women on their boards and they make up an average of 25.5% of board members.

In Panel C of the table below, all female directors' educational backgrounds are listed (in REITs with female directors). For example, all REITs with female directors had an average education level of 4.6. According to this data, female directors' level of education has a significant impact on the performance of REITs. These findings are in line with those of Endraswati (2018).

Table 4.3 1: Summary Statistics

	Obs	Mean	Std. Dev.	Min	Max
Panel A: Performance Variable					
RETURN ON ASSETS	35	6.780	6.974	-28.590	20.710

FUNDS FROM OPERATIONS	35	3.418	11.810	13.201	17.921
RETURN ON EQUITY	35	5.250	33.710	-483.650	99.110
PRICE/NAV	35	5.555	30.364	.0113	299.763
Panel B: Female Participation Variable					
WOMEN ON BOARD	35	.858	.348	0.000	6.000
Panel C: Female Director's Biography					
WOMENDIR_EDU	35	.046	.013	3.000	6.000
Panel D: Board And Firm Control Variables					
FIRM SIZE (in $000)	35	1.11e+10	1.56e+10	0.000	8.63e+10
DEBT-TO-EQUITY	35	8.410	40.684	.0101	424.130
PRICE-TO-BOOK VALUE	35	6.242	28.144	.0117	296.981
FIRM AGE	35	8.269	10.374	0.000	51.000
BOARD SIZE	35	8.717	2.650	2.123	13.000
DIVIDEND YIELD	35	7.021	4.810	2.429	4.831
TOTAL ASSETS	35	3.531	3.518	3.071	4.013
INFLATION ADJUSTED RETURN	35	4.610	2.819	4.231	3.193
MARKET TO BOOK VALUE RATIO	35	4.051	2.091	3.751	4.024

NOTE: The value at which the shares of a company's stock are described as *FIRM SIZE*. *FIRM AGE* is the natural log of the number of years a firm is listed on the exchange. *DEBT/EQUITY* denotes the total debt divided by the total assets of the firm. *PRICE/BOOK VALUE* is the price-to-book ratio, a metric used to make a comparison of a firm's market value to its book value. *FFO* is a measure of cash flow generated from business operations that is often used by Real Estate Investment Trusts – REITS. *PRICE/NAV* shows the company's share price to the net asset (or book) value per share. *ROE* is a measure of financial performance calculated by dividing net income by shareholders' equity. *DIVIDENDYIELD* is financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage. *TOTALASSETS* measures the efficiency of a company's assets in generating revenue or sales. It compares the dollar amount of sales (revenues) to its total assets as an annualized percentage. *MARKET TO BOOK VALUE RATIO* is used to equate a company's available net assets to the price at which the stock is sold. *INFLATION ADJUSTED RETURN* is the rate of return that takes into account the inflation rate over the time frame; its metric's aim is to expose the return on an investment after taking inflation into account. *BOARD SIZE* is the number of board members on the REIT. *RETURN-ON-EQUITY* (ROE) measures the profitability of the firm with regards to its equity. PRICE/NAV is the price per share of a firm. *Women on Board* is a dummy variable which depicts whether there is a presence of women on a REIT's board. *WOMENDIR_EDU* is a dummy variable which represents the level of education of female directors on a REIT's board; Dummy variable which represents the level of education of female directors on a REIT's board; for higher level of education (PhD, MSc, MBA, PGDiploma), it is set to 1. For lower level of education (Bachelors Honours Degree, Bachelors, Diploma and High School), it is set to 0. Significance is at 1%, 5%, and 10% level.

4.5.2. Mean-Comparison for REITs with and without three female Directors and higher level of education on Boards

The findings of the mean-comparison between REITs with three or more women on their boards of directors and REITs without three women on their boards of directors are depicted in the Table 4.4.1; also the mean values for female directors for higher level of education

versus those without are equally presented. Despite the fact that the means are very similar in value, firms with women on their boards of directors have a greater return on investment (ROI), and bigger boards of directors have a higher proportion of women. Older boards also have a higher proportion of female members than younger ones. Women-dominated boards had a greater debt-to-equity ratio and a higher return on equity than their male counterparts.

Table 4.4 1: Mean-Comparison for REITs with and without three Female Directors, and higher education levels on Boards

Variables	**Mean for Females included on Board =1 (n = 29)**	**Mean for Females not included on Board =0 (n = 6)**
WOMEN ON BOARD	1	0
RETURN ON ASSETS	6.916	6.523
FUND FROM OPERATIONS	3.103	3.812
RETURN ON EQUITY	4.738	10.725
PRICE/NAV	4.637	1.592
FIRM SIZE (in $000)	1.32e+10	1.51e+09
FIRM AGE	11.871	7.269
BOARD SIZE	9.192	6.884
DEBT/EQUITY	4.157	1.690
PRICE/BOOK VALUE	3.509	1.704
Variables	**Mean for Females with higher degrees =1 (n = 16)**	**Mean for Females without higher degrees =0 (n = 19)**
WOMENDIR_EDU	1	0
RETURN ON ASSETS	3.210	5.251
FUNDS FROM OPERATIONS	3.114	3.091
RETURN ON EQUITY	4.613	8.951
PRICE/NAV	4.102	1.420
FIRM SIZE (in $000)	1.12e+09	1.47e+09
FIRM AGE	8.130	5.152
BOARD SIZE	8.145	5.195
DEBT/EQUITY	4.113	1.341
PRICE/BOOK VALUE	3.101	1.432
DIVIDEND YIELD	4.012	2.519
TOTAL ASSETS	3.013	1.729
INFLATION ADJUSTED RETURN	4.710	2.104
MARKET TO BOOK VALUE RATIO	4.192	2.018

NOTE: The value at which the shares of a company's stock are described as *FIRM SIZE*. *FIRM AGE* is the natural log of the number of years a firm is listed on the exchange.. *DEBT/EQUITY* denotes the total debt divided by the total assets of the firm. *PRICE/BOOK VALUE* is the price-to-book ratio, a metric used to make a comparison of a firm's market value to its book value. *FFO* is a measure of cash flow generated from business operations that is often used by Real Estate Investment Trusts – REITS. *PRICE/NAV* shows the company's share price to the net asset (or book) value per share. *ROE* is a measure of financial performance calculated by dividing net income by shareholders' equity. *DIVIDENDYIELD* is financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage. *TOTALASSETS* measures the efficiency of a company's assets in generating revenue or sales. It compares the dollar amount of sales (revenues) to its total assets as an annualized percentage. *MARKET TO BOOK VALUE RATIO* is used to equate a company's available net assets to the price at which the stock is sold. *INFLATION ADJUSTED RETURN* is the rate of return that takes into account the inflation rate over the time frame; its metric's aim is to expose the return on an investment after taking inflation into account.

BOARD SIZE is the number of board members on the REIT. *RETURN-ON-EQUITY* (ROE) measures the profitability of the firm with regards to its equity. PRICE/NAV is the price per share of a firm. *Women on Board* is a dummy variable which depicts whether there is a presence of women on a REIT's board. *WOMENDIR_EDU* is a dummy variable which represents the level of education of female directors on a REIT's board; Dummy variable which represents the level of education of female directors on a REIT's board; for higher level of education (PhD, MSc, MBA, PGDiploma), it is set to 1. For lower level of education (Bachelors Honours Degree, Bachelors, Diploma and High School), it is set to 0. Significance is at 1%, 5%, and 10% level.

4.5.3. Correlation Matrix Gender for REITs Firms: Return on Assets as Proxy

In Table 4.5.1, there is a positive relationship between Return on Assets, *WOMENDIR_EDU (0.322) and WOMEN/BOARD* (0.310). This finding is also consistent with Noguera (2020), who predicts that the numbers and proportion of women directors also appear to be significantly related to the sector in which companies operate, the revenue, profit and the number of employees and other factors such as women's educational backgrounds. By implication, this emphasizes the benefits to issuing REITs with highly educated female directors.

Table 4.5 1: Correlation Matrix Gender for REITs Firms

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1	Return On Assets	1.000													
2	Firm Size	0.428*	1.000												
3	Firm Age	0.211*	0.271*	1.000											
4	Board Size	0.301*	0.413*	0.231*	1.000										
5	Debt/Equity	0.228*	0.130*	0.271*	0.341*	1.000									
6	Return On Equity	0.191*	0.221*	0.283*	0.311*	0.417*	1.000								
7	Price/Book Value	0.301*	0.452*	-0.062	0.394*	0.411*	0.401*	1.000							
8	Price/Nav	-0.102	-0.031	0.416*	-0.042	-0.091	0.301*	0.294*	1.000						
9	%Women/Board	0.411*	0.210*	0.459*	0.448*	0.310*	0.331*	0.391*	0.230*	1.000					
10	Womendir_Edu	0.219*	0.118*	0.357*	0.361*	0.381*	0.376*	0.364*	0.235*	-0.590	1.000				
11	Dividend Yield	-0.020	-0.041	-0.033	0.219*	0.418*	-0.059	-0.052	-0.059	0.021**	0.351*	1.000			
12	Total Assets	-0.017	-0.027	-0.410	-0.035	0.998*	-0.049	-0.753	0.051**	-0.071	-0.012	0.451*	1.000		
13	Inflad_Return	0.317*	-0.251	-0.254	-0.197	0.372*	0.472*	0.416*	0.414*	0.429*	0.312*	0.318*	-0.291	1.000	
14	Mbvr	0.451*	0.401*	-0.021	-0.041	-0.496	-0.651	0.407*	0.478*	-0.030	0.276*	0.349*	0.319*	-0.031	1.000

NOTE: The value at which the shares of a company's stock are described as *FIRM SIZE*. *FIRM AGE* is the natural log of the number of years a firm is listed on the exchange.. *DEBT/EQUITY* denotes the total debt divided by the total assets of the firm. *PRICE/BOOK VALUE* is the price-to-book ratio, a metric used to make a comparison of a firm's market value to its book value. *FFO* is a measure of cash flow generated from business operations that is often used by Real Estate Investment Trusts – REITS. *PRICE/NAV* shows the company's share price to the net asset (or book) value per share. *ROE* is a measure of financial performance calculated by dividing net income by shareholders' equity. *DIVIDENDYIELD* is financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage. *TOTALASSETS* measures the efficiency of a company's assets in generating revenue or sales. It compares the dollar amount of sales (revenues) to its total assets as an annualized percentage. *MARKET TO BOOK VALUE RATIO* is used to equate a company's available net assets to the price at which the stock is sold. *INFLATION ADJUSTED RETURN* is the rate of return that takes into account the inflation rate over the time frame; its metric's aim is to expose the return on an investment after taking inflation into account. *BOARD SIZE* is the number of board members on the REIT. *RETURN-ON-EQUITY* (ROE) measures the profitability of the firm with regards to its equity. PRICE/NAV is the price per share of a firm. *Women on Board* is a dummy variable which depicts whether there is a presence of women on a REIT's board. *WOMENDIR_EDU* is a dummy variable which represents the level of education of female directors on a REIT's board; Dummy variable which represents the level of education of female directors on a REIT's board; for higher level of education (PhD, MSc, MBA, PGDiploma), it is set to 1. For lower level of education (Bachelors Honours Degree, Bachelors, Diploma and High School), it is set to 0. Significance is at 1%, 5%, and 10% level.

4.5.4. Correlation Matrix Gender for REITs Firms: Funds from Operations as Proxy

Table 4.6.1 shows the correlation matrix of the independent variables employed in the model, consistent with Armstrong et al (2015), the level of education of female directors on a REIT's board is observed to be positively related with funds from operations of South African REITs. This finding is also consistent with Noguera (2020), who predicts that the numbers and proportion of women directors also appear to be significantly related to the sector in which companies operate, the revenue, profit and the number of employees and other factors such as women's educational backgrounds. By implication, this emphasizes the benefits to issuing REITs with highly educated female directors. The study is not consistent with Schrand et al (2018) who find that the percentage of women on REIT boards neither enhance nor reduce REIT performance, as measured by either the proxies of price/net asset value (market performance) and FFO per share (operating performance). In this study, Funds from operations (FFO) and the number of female directors on the boards of South African REITs (WOMEN/BOARD) are strongly (positive) correlated (r=0.116). The reasoning behind this finding is perceived to be due to the inclusion of female directors which increases the board's flexibility and decision making ability.

Table 4.6 1: Correlation Matrix Gender for REITs Firms: Funds from Operations

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1	FFO	1.000													
2	Firm Size	0.416*	1.000												
3	Firm Age	0.459*	0.382*	1.000											
4	Board Size	0.357*	0.481*	0.099	1.000										
5	Debt/Equity	0.373*	0.313*	0.219*	0.335*	1.000									
6	Return On Equity	0.041**	0.314*	0.313*	0.219*	0.418*	1.000								
7	Price/Book Value	-0.254	-0.092	0.103*	0.493*	0.998	0.410*	1.000							
8	Price/Nav	-0.0219	0.224*	0.452*	-0.062	0.394*	0.411*	0.401*	1.000						
9	%Women/Board	0.046**	0.371*	-0.031	0.416*	0.492*	-0.091	0.301*	0.302*	1.000					
10	Womendir_Edu	0.027**	0.341*	0.210*	0.459*	0.448*	0.310*	0.331*	0.391*	0.127*	1.000				
11	Dividend Yield	-0.093	0.931	0.118*	0.357*	0.361*	0.381*	0.376*	-0.023	-0.590	0.230*	1.000			
12	Total Assets	0.116*	0.203*	-0.041	-0.033	0.219*	-0.041	-0.059	-0.017	-0.041	-0.019	-0.020	1.000		
13	Inflad_Return	0.239*	-0.135	-0.104	-0.041	-0.496	0.293**	-0.083	0.319*	0.292*	0.417*	0.481*	0.394*	1.000	

14	Mbvr	0.431*	-0.738	-0.254	-0.033	0.023**	-0.651	0.407*	0.478*	-0.030	-0.076	-0.039	-0.319	-0.039	1.000

NOTE: The value at which the shares of a company's stock are described as *FIRM SIZE*. *FIRM AGE* is the natural log of the number of years a firm is listed on the exchange.. *DEBT/EQUITY* denotes the total debt divided by the total assets of the firm. *PRICE/BOOK VALUE* is the price-to-book ratio, a metric used to make a comparison of a firm's market value to its book value. *FFO* is a measure of cash flow generated from business operations that is often used by Real Estate Investment Trusts – REITS. *PRICE/NAV* shows the company's share price to the net asset (or book) value per share. *ROE* is a measure of financial performance calculated by dividing net income by shareholders' equity. *DIVIDENDYIELD* is financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage. *TOTALASSETS* measures the efficiency of a company's assets in generating revenue or sales. It compares the dollar amount of sales (revenues) to its total assets as an annualized percentage. *MARKET TO BOOK VALUE RATIO* is used to equate a company's available net assets to the price at which the stock is sold. *INFLATION ADJUSTED RETURN* is the rate of return that takes into account the inflation rate over the time frame; its metric's aim is to expose the return on an investment after taking inflation into account. *BOARD SIZE* is the number of board members on the REIT. *RETURN-ON-EQUITY* (ROE) measures the profitability of the firm with regards to its equity. PRICE/NAV is the price per share of a firm. *Women on Board* is a dummy variable which depicts whether there is a presence of women on a REIT's board. *WOMENDIR_EDU* is a dummy variable which represents the level of education of female directors on a REIT's board; Dummy variable which represents the level of education of female directors on a REIT's board; for higher level of education (PhD, MSc, MBA, PGDiploma), it is set to 1. For lower level of education (Bachelors Honours Degree, Bachelors, Diploma and High School), it is set to 0. Significance is at 1%, 5%, and 10% level.

4.5.5. OLS Estimation for REITs Board Female Inclusion, their level of education and Financial Performance

Table 4.7.1 reports on the relationship between female inclusion, their level of education and the ROA; with this, the study includes a set of control variables putatively affecting firm performance. The first group of control variables is related to board structure (board size and a dummy indicating whether females are included or not on the board of REITs). The second group of control variables captures the riskiness and growth potential of the firm (leverage, total assets, market to book value ratio, inflation adjusted return, dividend yield, firm size, firm age and price/book value). In the results, the study uses an OLS estimation to analyze the dynamic structure of the data by explaining the year-to-year variation in performance by the year-to-year variation of the different time-variant explanatory variables. At the significance level of 0.05, almost all the variables do not have a significant relationship with the year-to-year variation in REITs financial performance. In particular, variations in firm age, firm size, board size and women inclusion do not have a significant relationship with the year-to-year variations in REITs financial performance, while variations in debt/equity ratio (leverage) and price/book ratio each have a significant relationship with variations in REITs financial performance. More specifically, inclusion of females on the boards of REITs when measured as a dummy variable, the OLS estimation shows an insignificant relationship ($p < .05$) with firm performance suggesting that REITs with boards with females do not necessarily perform better than REITs with boards without females.

The education level of women directors has a coefficient value of 1.316 (positive) and a significance level of 0.0421, indicating that education level of women directors does have a positive effect on the performance of South African REITs. The value of significance level is far below 0.05 so this variable has a significant effect on REITs performance. The findings may be explained by the fact that female directors with postgraduate degrees are not limited in South Africa; this is validated by recent data (Person et al., 2014), which indicate that South Africa needs to expand its knowledge economy.

This will require additional researchers, as well as addressing current inequities between race and gender. In all of these, the proportion of female South Africans with a higher education is around 40% greater than the proportion of male South Africans with a higher education. This finding is consistent with those of Smith et al. (2005) and Wan Yusoff (2010).

Table 4.7 1: OLS Estimation for REITs Board Female Inclusion and Financial Performance – Multivariate Analysis on Return on Assets

VARIABLES	Coef.	Std. Err.	T	P-value
RETURN ON ASSETS				
WOMEN ON BOARD (1/0)	1.533	1.003	1.53	0.128
WOMENDIR_EDU (1/0)	1.316	0.841	1.31	0.042
FIRM SIZE (in $000)	-2.98e-11	1.70e-11	-1.75	0.081
FIRM AGE	.026	.027	0.94	0.348
BOARD SIZE	-.046	.105	-0.44	0.659
DEBT/EQUITY	-2.679	.183	-14.63	0.041
PRICE/BOOK VALUE	3.823	.251	15.18	0.021
MBVR	0.026	0.027	0.417	0.410
TOTAL ASSETS	1.201	0.481	1.029	0.002
DIVIDEND YIELD	1.535	1.003	1.53	0.102
INFLAD_RETURN	-2.38e-11	1.28e-11	-1.39	0.041
CONSTANT	2.424	1.175	2.06	0.040
Observations	35	35	35	35

NOTE: The value at which the shares of a company's stock are described as *FIRM SIZE*. *FIRM AGE* is the natural log of the number of years a firm is listed on the exchange.. *DEBT/EQUITY* denotes the total debt divided by the total assets of the firm. *PRICE/BOOK VALUE* is the price-to-book ratio, a metric used to make a comparison of a firm's market value to its book value. *FFO* is a measure of cash flow generated from business operations that is often used by Real Estate Investment Trusts – REITS. *PRICE/NAV* shows the company's share price to the net asset (or book) value per share. *ROE* is a measure of financial performance calculated by dividing net income by shareholders' equity. *DIVIDENDYIELD* is financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage. *TOTALASSETS* measures the efficiency of a company's assets in generating revenue or sales. It compares the dollar amount of sales (revenues) to its total assets as an annualized percentage. *MARKET TO BOOK VALUE RATIO* is used to equate a company's available net assets to the price at which the stock is sold. *INFLATION ADJUSTED RETURN* is the rate of return that takes into account the inflation rate over the time frame; its metric's aim is to expose the return on an investment after taking inflation into account. *BOARD SIZE* is the number of board members on the REIT. *RETURN-ON-EQUITY* (ROE) measures the profitability of the firm with regards to its equity. PRICE/NAV is the price per share of a firm. *Women on Board* is a dummy variable which depicts whether there is a presence of women on a REIT's board. *WOMENDIR_EDU* is a dummy variable which represents the level of education of female directors on a REIT's board; Dummy variable which represents the level of education of female directors on a REIT's board; for higher level of education (PhD, MSc, MBA, PGDiploma), it is set to 1. For lower level of education (Bachelors Honours Degree, Bachelors, Diploma and High School), it is set to 0. Significance is at 1%, 5%, and 10% level

4.5.6. OLS Estimation for REITs Board Female Inclusion, their level of education and Financial Performance using FFO

Table 4.8.1 presents an OLS estimattion on the association between female inclusion, education level, and funds from operations (FFO); the study also includes a set of control factors that may impact business performance. The first set of control variables is concerned with board structure (board size and a dummy indicating whether females are included or not on the board of REITs). The second set of control variables reflects the firm's riskiness and potential for growth (leverage, firm size, firm age, total assets, market to book value ratio, inflation adjusted return, dividend yield, and price/book value). In the results, the study uses an OLS estimation to analyze the dynamic structure of the data by explaining the year-to-year variation in

performance by the year-to-year variation of the different time-variant explanatory variables. At the significance level of 0.05, almost all the variables do have a significant relationship with the year-to-year variation in REITs financial performance.

The education level of women directors has a significance level of 0.370 when using FFO as a proxy for operating performance, showing that education level of women directors has a significant effect on the performance of South African REITs. The findings, like Returns on Asset (ROA), may be explained by the fact that female directors with postgraduate degrees are not scarce in South Africa; this is supported by recent findings (Person et al., 2014), which show that South Africa needs to develop its knowledge economy. This will necessitate more researchers, as well as addressing present racial and gender disparities.

Table 4.8 1: OLS Estimation for REITs Board Female Inclusion, their level of education and Financial Performance using FFO

VARIABLES	Coef.	Std. Err.	T	P-value
FUNDS FROM OPERATIONS				
WOMENDIR_EDU (1/0)	1.031	0.414	1.11	0.370
WOMEN ON BOARD (1/0)	1.128	0.411	1.07	0.483
FIRM SIZE (in $000)	-1.8e-11	1.160e-11	-0.91	0.212
FIRM AGE	0.311	0.371	0.82	0.037
BOARD SIZE	-.210	.116	-0.37	0.404
DEBT/EQUITY	0.031	0.187	0.110	0.193
MBVR	0.391	0.027	0.510	0.321
TOTAL ASSETS	1.201	0.481	1.029	0.030
DIVIDEND YIELD	0.026	0.027	0.417	0.410
PRICE/BOOK VALUE	2.671	0.185	1.71	0.291
INFLAD_RETURN	-2.679	.183	-14.63	0.102
CONSTANT	2.109	1.310	3.11	0.310
Observations	35	35	35	35

NOTE: The value at which the shares of a company's stock are described as *FIRM SIZE*. *FIRM AGE* is the natural log of the number of years a firm is listed on the exchange.. *DEBT/EQUITY* denotes the total debt divided by the total assets of the firm. *PRICE/BOOK VALUE* is the price-to-book ratio, a metric used to make a comparison of a firm's market value to its book value. *FFO* is a measure of cash flow generated from business operations that is often used by Real Estate Investment Trusts – REITS. *PRICE/NAV* shows the company's share price to the net asset (or book) value per share. *ROE* is a measure of financial performance calculated by dividing net income by shareholders' equity. *DIVIDENDYIELD* is financial ratio (dividend/price) which indicates how much a firm pays out in dividends per year in relation to the stock price, and calculated as a percentage. *TOTALASSETS* measures the efficiency of a company's assets in generating revenue or sales. It compares the dollar amount of sales (revenues) to its total assets as an annualized percentage. *MARKET TO BOOK VALUE RATIO* is used to equate a company's available net assets to the price at which the stock is sold. *INFLATION ADJUSTED RETURN* is the rate of return that takes into account the inflation rate over the time frame; its metric's aim is to expose the return on an investment after taking inflation into account. *BOARD SIZE* is the number of board members on the REIT. *RETURN-ON-EQUITY* (ROE) measures the profitability of the firm with regards to its equity. PRICE/NAV is the price per share of a firm. *Women on Board* is a dummy variable which depicts whether there is a presence of women on a REIT's board. *WOMENDIR_EDU* is a dummy variable which represents the level of education of female directors on a REIT's board; Dummy variable which represents the level of education of female directors on a REIT's board; for higher level of education (PhD, MSc, MBA, PGDiploma), it is set to 1. For lower level of education (Bachelors Honours Degree, Bachelors, Diploma and High School), it is set to 0. Significance is at 1%, 5%, and 10% level

4.5.7. Robustness Test: Shannon Index of Equitability for REITs Board Female Inclusion, their level of education and Financial Performance using FFO

The findings in Table 4.9.1. demonstrate that REITs with female directors perform comparably to companies without female directors when measured using the ROA and FFO proxies. According to the findings, a firm boardroom with a higher proportion of female directors is more valuable. This is in line with a study by Johl et al. (2015) that discovered that the return on assets for 700 publicly traded companies in Malaysia was positively correlated with the participation of women. Similar findings were made by Taghizadeh & Saremi (2013), who discovered that female directors improved the performance of 150 publicly traded companies in 2008. The outcomes are also in line with research from the US, where it was discovered that having female directors increases a company's profitability (Adams & Ferreira, 2009; Erhardt et al., 2003; Farrell & Hersch, 2005; Stigring & Lyxell, 2011) and value (Srinidhi et al., 2011).

Table 4.9.1. Robustness Test: Shannon Index of Equitability for REITs Board Female Inclusion, their level of education and Financial Performance using FFO

Variables	ROA_REITsFD	ROA_REITsnFD	FFO_REITsFD	FFO_REITsnFD
FD_Shan	0.131*** (0.037)	0.049** (0.031)	0.132*** (0.131)	0.162*** (0.039)
WomenEDU_Shan	0.117*** (0.022)	0.037** (0.041)	0.218*** (0.103)	0.116*** (0.028)
Constant	0.129*** (0.014)	0.141*** (0.012)	0.078*** (0.013)	1.026*** (0.047)
Controls	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
Observations	35	35	35	35
Adjusted R^2	0.005	0.006	0.002	0.010

NOTES: FD_Shan is the alternative measure for percentage of REITs with female directors compared to REITs without female directors. WomenEDU_Shan is the alternative measure for REITs with educated female directors (higher degrees) compared to REITs female directors with higher degress.. ROA_REITsFD is return on assets from REITs with female directors; ROA_REITsnFD is return on assets from REITs without female directors; FFO_REITsFD is funds from operations from REITs with female directors; FFO_REITsnFD is funds from operations from REITs without female directors. **, *** indicate significance at 5% and 1% level, respectively. Robust standard errors in parenthesis.

4.6. Conclusion

This study contributes to the growing body of research on REIT corporate governance by revealing that investors are paying more attention to the level of education in their investment decisions; unlike gender diversity. With particular attention paid to the REIT industry, the study reveals on the relationship between gender diversity and female directors' level of education in boardrooms and business financial success.

This study is the first to evaluate the relationship between female inclusion, level of education of female directors and the performance of listed real estate investment trusts (REITs) on the Johannesburg Stock Exchange (JSE) from 2013 to 2020. The presence of three (3) and above female directors on South African REITs board of directors increased from 3.6 percent in 2013 to 9.7 percent in 2015 (This represents a significant increase from the 3.6 percent in 2013. Despite the fact that the real estate industry has typically been controlled by males, there has been a progressive increase in the number of women on corporate boards of directors in recent years); even with this, there was no significant impact on performance of South African REITs being recorded. These results do not align with most of extant studies (Carter et al., 2010; Campbell & Mnguez-Vera, 2008; MartnUgedo & Minguez-Vera, 2014); the study perceives the results are unique due to the absence of quota rules in South Africa (Coe et al., 2019).

With the uniqueness in the results on female representation, the study then investigated the impact their level of education may have financial performance of REITs. For the first time in the context of SA REITs, the study finds a significant impact on performance. The results are consistent with Carpenter & Westphal (2001); by implication, REIT regimes especially in emerging markets are recommended to appoint female directors with higher degrees. Apart from being a remarkably diversified country, South Africa is regarded as a leader on the African continent and among rising countries in terms of women's participation on boards (Willows & van der Linde, 2016; Siboni, et al., 2016). This title should be supported by a board representation that exceeds the existing 18.78%. The South African cabinet enacted the Women Empowerment and Gender Equality Bill in August 2012, stating that "all entities must, within their scope of responsibility, establish ways to achieve at least 50% representation and meaningful involvement of women in decision-making processes" (Moyo & Dhliwayo, 2019). Pro-active steps should be taken to rectify this and promote women representation further.

In terms of the influence of gender-diverse teams on return on assets (ROA), the findings suggest that REIT investors do not necessarily perceive a critical mass of female participation in executive roles as a favorable investment variable when making investment decisions. For funds from operations (FFO), it is significant. Because the beneficial effect of female directors has no relationship with investor views, it is also likely that the REIT-specific performance metric ROA and FFO are more suitable performance measures in the context of REITs gender diversity than other performance measures. A future study might broaden the scope of the diversity analysis to include female involvement at the middle managerial level. It would be fascinating to investigate the impact of women in middle managerial roles on financial success in the future. A study of the link between performance, a REIT's corporate social responsibility ranking, and female representation might be of interest, as well. An inquiry of this nature would provide more information on the interdependencies that exist between these processes. Furthermore, further research of additional diversity characteristics, such as ethnicity, religion, age, and education, would be beneficial to the literature on real estate corporate governance in general and in particular. A limitation of the study is that while the model uses an interaction between two variables (Women Board Members * Educational level), it does not separate out the independent effect of educational level.

CHAPTER FIVE

SYNOPSES OF THE RESEARCH ENDEAVOR

5.1. Background

While research on REIT performance has been performed from a range of perspectives, empirical data on REIT performance in emerging markets remains rare. According to this thesis' central argument, South African REITs exhibit a broad range of performance. As a whole, this hypothesis has increased the study's understanding of REITs which has been made possible through the identification of the underlying critical factors of SA REIT performance. The three essays are the first of their type on South African real estate investment trusts.

5.2. Summary of Main Findings

The first essay establishes the relationship between economic policy and SEO underpricing. The empirical work provides evidence that BEE compliant REITs underprice their SEOs higher than less compliant REITs. The rationale behind this is found in the degree of information asymmetry; thus, the study recommended a recalibration and effective integration of the BEE policy among relevant stakeholders; apart from this, the study also recommended higher incentivisation towards BEE compliant REITs.

The second essay provides, for the first time, empirical evidence highlighting empirical examination on earnings management among internally and externally managed REITs around Secondary Equity Offerings. The empirical accounting literature claims that internal management of a firm constrains earnings management, while others argue in favour of internal management. Using a sample of listed REITs for the 2013 - 2020 time period, the study examines the relationship between management structures and real earnings management. The study does not find aggressive practices of activity-based earnings management in internally managed REITs; the results provide the first empirical evidence that indeed, levels of activity-based earnings management is influenced by management structure. This focus on real activity-based earnings management suggests new avenues for research on management structures of REITs. The results offer some insights for policy makers interested in promoting legislation to ensure strong corporate governance in their nation.

The third essay presents an empirical analysis on the examination of female inclusion on boards of REITs, their level of education and financial performance. The study examined the relationship between female inclusion on firm boards and financial performance in a South African REIT context by applying an ordinary least squares (OLS) approach to a unique panel dataset of 35 South African REITs over the period 2013–2020. The study also find evidence of an insignificant relationship between gender diversity and REITs financial performance whereas, the study finds a significant relationship between the level of education of REITs female directors and performance; by implication, the results does not just show that a REIT's likelihood of having a woman on the board of directors does not necessarily increase financial and operating performance (measured by ROA and FFO respectively), it also reveals that having female directors with higher education degrees has a significant impact on the performance of REITs.

5.3. Practical Implications

The findings of the first essay imply that Government is therefore aware of the impact policy interventions play when REITs raise financing through SEOS. With these, highly compliant BEE REITs will need to be more strategic when making BEE compliance decisions as this is shown in this study to impact the underpricing of SEOs.

Although the existing literature tends to support external managers against earnings management practices around SEOs, in the second essay, our results prove otherwise. These contrary research results are likely due to the fact that investors are observed to be unsuspicious of the ill-fated credibility of certifications of financial statements from these REITs in the study sample. This means there is a need for investors to be exposed to certified financial statements by reputable underwriters. These findings have significant implications, as investors cannot rely on these statements for enhanced investment decision making. These results suggest that policy makers should resolve to ensure that financial statements of REITs be certified and validated by the relevant stakeholders before they are being released to investors.

Contrary to previous studies that find economic impacts from including females on boards of firms, the results in the third essay suggest that firm performance is not necessarily increased when females are included on boards of South African REITs; apart from this, it suggests that REITs should include more females with higher education degrees on their boards as this will increase financial performance. The study can think of a practical implication of this

finding. Despite these findings, the study reckons that gender-diverse boards have a positive effect on firm performance under South Africa's present corporate governance environment. There may be a diminishing return on investment as South African corporate governance improves. For now, REITs with inadequate corporate governance should consider recruiting more female directors to their boards. Aside from that, male dominated businesses, such as the REIT industry, have often responded to the request for gender board diversity by appointing one or two female directors to their boards, which the findings of this article demonstrate is insufficient. The findings of this study imply that governments and investors should advocate for REITs to appoint a considerable number of women directors to their boards, rather than just token women directors. Investors and authorities should also be mindful that internal and external variables might favor or hinder the number of women directors reaching critical mass on REIT boards.

Additional data, for example, suggest that the degree of education of female directors has a beneficial influence on both financial and operating success. This research adds to the evidence that the degree of education of female directors is 'excellent' for REITs in South Africa. This is consistent with prior results of REIT governance standards shifting in response to changes in stock exchange requirements brought about by legislative changes (Jolin, 2021; Ahmad, et al., 2019; Abd-Mutalib, et al., 2018).

5.4. Limitations and Future Research

No research is without limitations and this study is no exception. This section highlights the limitations of each of the essays, together with the recommendation for further research. Across the three essays, data inconsistency and limitation prevented us from extending the investigation to include other measures of the related variables. For future consideration, it would be interesting to expand the current research to cover the alternative measures of firm performance. The study has deliberately restricted the scope of the second essay to using the modified jones model in estimating earnings management; this was due to data limitation. Therefore, an interesting extension to the current study would be to explore alternative estimation proxies.

Although the study establishes an unpopular evidence in the third essay, future research could probe deeper into the driving factors behind the impacts on firm performance. Apart from this, future studies should consider broader ethnic representation at the board level and not just the issue of female representation. It will be interesting to see unique findings

particularly from South Africa, a widely diverse nation. A weakness of this essay is the small sample size. A lot of inconsistencies are observed within the listed South African REITs. It would be interesting to expand the sample to cover other emerging market REITs. The study leaves these challenging thoughts for future research.

Conclusively, the three essays have examined the performance of listed REITs in South Africa. The findings from all three essays present unique stories as some share similarities with other emerging markets and others being inconsistent due to various factors/variables. The findings have diverse implications which are beneficial to relevant stakeholders whether in literature or in practice. The study has also presented first of its kind findings; hopefully, future studies can consolidate on the insights therein.

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