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Female directorships and its relationship to the financial performance of the Top 40 JSE listed companies

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration

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Abstract

Mixed findings exist in the field of research into the presence of women in management positions, and on the boards of companies, and the relationship between gender equity and financial performance. Gender equality is such a contentious issue globally, that a specific UN sustainable development goal (Goal 5) is aimed at addressing this. This study focused primarily on the representation of female directors on the boards of the Top 40 companies listed on the JSE. In recent years, the JSE has implemented gender policy disclosure requirements aimed at highlighting the problem of inequality in the boardroom. Though there has been minimal progress over the years, by 2019 only 27% of directors serving on the boards of the Top 40 JSE-listed companies are female.

Through the quantitative analysis performed, the study examined the difference between boards where 20% or more female directors are present and boards with less than 20% female directors, and their relation to financial performance which is defined by the

dependent variables of annual share-price growth, annual revenue growth and return on equity. It was concluded that there is no difference in annual share-price growth and return on equity where boards have 20% or more female directors. However, a statistically significant difference is noted on annual revenue growth where 20% or more female directors are present on the board of the JSE Top 40 companies between 2015 and 2019. Furthermore the introduction of the gender disclosure policy requirement by the JSE could have influenced the growth in female directors after 2017.

Keywords

Female directors; JSE Top 40 companies; Financial performance; Return on Equity; Annual revenue growth; Annual share-price growth

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Contents

Chapter 1: Introduction to research problem

Definition of problem and purpose

1.1 Research problem

"Despite some encouraging progress in recent years, the under-representation of women on corporate boards and in management positions remains a challenge for the EU member states. This under-representation means that potential[ly] highly-skilled and needed human resources remain untapped" (European Women on Boards Gender Diversity Index, 2019). Unfortunately, the under-representation of women on boards does not occur only in the EU, but is so pervasive throughout the world that the UN Sustainable Development Goal 5 is aimed at "gender equality and empower[ing] all women and girls" (United Nations Sustainable Development Goals, 2020) to address such challenges.

To contextualise this in South Africa, in 2017 women comprised 51% of the total population, however only made up 44.1% of the employed workforce (Businesswomen's Association of South Africa report, 2017). Moreover, the 2017 Census indicated that only 20.7% of directors are women and that women only account for 11.8% of the top leadership level in organisations (Businesswomen's Association of South Africa report, 2017). It should be obvious from this that women in South Africa are poorly represented on company boards.

From the 1st January 2017, the Johannesburg Stock Exchange (JSE) implemented a policy necessitating listed companies to implement a gender policy at board level and report this policy in their integrated annual reports (Business Engage Association NPC, 2018). This policy was introduced to address the lack of gender-diverse boards. It is a non-voluntary regulation imposed on listed companies. This policy implementation supported the recommendation of the King Code of Corporate Governance for board diversity.

The findings of the Business Engage Association NPC report (2018) indicated that several companies listed on the JSE still do not have a single female board member. While the

report of the Business Engage Association NPC, (2018) focused on determining the number of women on the boards of JSE-listed companies, it failed to determine the impact female directorships have on the financial performance of JSE-listed companies.

The Companies Act of South Africa (Republic of South Africa, 2008) defines the board of directors as those charged with the management of the business and its affairs with the authority and powers to perform functions on the company boards, the directors thus have a critical role by exercising their managerial powers to create value for stakeholders. The Companies Act further recommends a composition of at least one director for a private company, and a minimum of three directors in the case of a public or non-profit company (Republic of South Africa, 2008). The Act, however, is silent on the specific demographics of the Board. This speaks to the lack of legislative interventions to address the lack of gender diversity on corporate boards in South Africa.

The King IV Report on Corporate Governance for South Africa (2016) aims to improve the governance of companies and bridge governance gaps, such as the lack of diversity which has not been adequately covered by the companies Act of South Africa. The report further builds on the Companies Act definition of a board of directors, to include the term "governing bodies". A governing body in terms of King IV Report is the "structure that has the primary accountability of governance and performance of the organisation" (King IV Report on Corporate Governance for South Africa, 2016). Principle 7 of the report specifically deals with board composition and recommends that "boards should comprise the appropriate balance of knowledge, skills, experience, diversity and independence for it to discharge its governance role and responsibilities objectively and effectively" (King IV Report on Corporate Governance for South Africa, 2016).

Diversity in the interpretation of this principle includes: "different fields of knowledge, skills, expertise, experience, age, culture, race and gender" (King IV Report on Corporate Governance for South Africa, 2016). Of interest in this study, is diversity in the form of gender. Further to note is, that although The King Code of Corporate Governance is globally well-known and its governance principles practiced by companies throughout the world, non-compliance with the Code incurs no legal consequences.

The exact nature of the impact of board gender diversity on firms' financial performance still lacks solid and conclusive empirical evidence (Sani, Abubakar, Aliyu, & Sule, 2019). Furthermore, given the cultural history of South Africa and the legacy of apartheid, (Gyapong, Monem, & Hu, 2016) found it appropriate to investigate the impact of female directors on firm value. The legacy of apartheid has resulted in the South African government instituting policies aimed at extinguishing the effects of apartheid (Gyapong et al. (2016).

Female directorship is relevant in terms of company performance since companies with female CEOs or those with female representation on their boards "are more likely to report: better business outcomes, increased productivity and profits, an ability to retain and attract talent, stronger company reputation, and greater creativity, innovation and openness" (European Women on Boards Gender Diversity Index, 2019).

In other parts of the world, gender diversity on boards remains relevant. According to one report (2020 Women on Boards Gender Diversity Index, 2019), it was found that 20.4% of the boards of Russell 3000 index companies in the US, included women, representing an increase from 17.7% in 2018. The 2020 Women on Boards Gender Diversity Index (2019) also indicates that the big companies generally lead this transformation, as opposed to the smaller companies. This statistic is largely in line with the statistic of 20.7% of directors being women (Businesswomen's Association of South Africa, 2017). Similarly, in Europe, the (European Women on Boards Gender Diversity Index, 2019) found that 33% of boards on the STOXX Europe 600 companies comprise women.

1.2 Purpose statement

The stance taken by the King IV Report on board composition, as well as the introduction of the disclosure of listed companies' gender policy in their integrated reports, highlights the need for and relevance of this study. Insight is needed to determine the effectiveness of these regulations aimed at increasing female representation on the boards of corporates. Furthermore, the slow adoption of gender equality policies requires this research to further drive the need of these policies. The purpose of the research was to explore the relationship between female directorships and the financial performance of the JSE Top 40 listed companies'. Understanding the effect of female directorships on financial performance remains to be explored. For the purposes of this study, financial performance has been defined as growth in share price, annual revenue growth, and return on equity.

Given the poor representation of women reflected in the 2017 Census that indicated that only 20.7% of directors are women, and that women only account for 11.8% of the top leadership in organisations (Businesswomen's Association of South Africa, 2017), a percentage threshold of 20% will be applied to determine the relationship between female directorships on the financial performance of the Top 40 companies listed on the JSE. It should, however, be noted that the Business Case for Change, (2019) reports that organisations only reap the benefits of gender equity once female representation at board level exceeds 30%. The research will enable the researcher to test for differences on financial performance where female directors exceed the 20.7% threshold shown by the 2017 Census outcome. For the purposes of this research, a 20% female directorship threshold has been applied.

Research conducted by the International Labour Office (The Business Case for Change, 2019), indicates that gender diversity at board levels improves organisational performance and that businesses could benefit from "higher profitability and productivity, increased ability to attract and retain talent, greater creativity, innovation and openness, enhanced reputation and the ability to gauge consumer interest and demand." The Business Case for Change (2019) report also mentions that three out of four businesses experience an increase in profit between 5% and 20% by increasing gender representation at the top levels in the organisation. At the same time, this study aims to contribute to achieving

“gender equality and empower[ing] all women and girls” as envisaged by the UN Sustainable Development Goal 5 (United Nations Sustainable Development Goals, 2020). Few studies in this field have investigated the effect of financial performance in terms of share-price growth and annual revenue. This is thus the first factor that distinguishes this study from other studies. Furthermore, the researcher has not encountered a recent study investigating the effect, if any, of the introduction of gender policy disclosure requirements driving an increase in female directors on the boards of the JSE Top 40 top companies and its effect on the financial performance of these companies. This therefore demonstrates a business need for the study.

This study also tests the upper-echelon theory and critical-mass theory as in the respective studies of Adusei, Akomea, & Poku (2017) and Brahma, Nwafor, & Boateng, (2020). The upper-echelon theory states that “organisational outcomes, strategic choices and performance levels are predicted by managerial background characteristics” (Hambrick & Mason, 1984). In Hambrick & Mason (1984), these managerial characteristics are defined as “age, tenure at the organisation, functional background, education, socio-economic background and financial position”. This theory is often used in prediction tests. This study provides insight as to whether women contribute positively to organisational outcomes — in this context, the financial performance of the organisation.

In terms of the critical-mass theory, we tested whether increased female presence on the board, in this case female representation in excess of 20%, has a difference on an organisation’s financial performance. South African studies, such as those conducted by Mans-Kemp & Viviers (2015), failed to analyse the relationship between the presence of women directors and financial performance once a given threshold has been breached.

In order to answer the research problem of whether female directorships impact financial performance. The present study aims to establish the relationship of female directorships to share-price growth, annual revenue growth, and return on equity

The implementation of policies and regulations by the JSE and the King Code of Corporate Governance was aimed at addressing poor gender diversity on boards, as also highlighted by the UN Sustainable Development Goal 5 (United Nations Sustainable Development Goals, 2020); thus this research also aims to understand this problem and whether the mechanisms introduced to address the problem of lack of gender diversity is as effective as it was intended to be.

In order to clarify and test the mixed findings in the literature, the hypotheses of this study are that there is a difference and significant relationship between the presence of female directors and financial performance, especially in the context where a given threshold has been breached. The sectors covered by the Top 40 companies listed on the JSE include: Financials, Health Care, Materials, Consumer Discretionary, Consumer Staple, Energy, and Telecommunications. On the basis of the reviewed literature from which it appears that the Financials sector, which has been tested often throughout the world, has more gender diverse boards than the other sectors.

The hypotheses tested by this study are therefore as follows:

Share price:

H0: JSE The annual share-price growth of Top 40 JSE listed company boards with 20% or more female directors is no different from that of the Top 40 JSE listed company boards with less than 20% female directors.

H1: The annual share-price growth of Top 40 JSE-listed company boards with 20% or more female directors is different from that of the Top 40 JSE listed company boards with less than 20% female directors.

Annual revenue growth:

H0: The annual revenue growth of Top 40 JSE-listed company boards with 20% or more female directors is no different from that of Top 40 the JSE Top 40 listed company boards with less than 20% female directors.

H1: The annual revenue growth of Top 40 JSE-listed company boards with 20% or more female directors is different from that of Top 40 JSE-listed company boards with less than 20% female directors.

Return on Equity:

H0: The annual return on equity of Top 40 JSE-listed company boards with 20% or more female directors is no different from that of the Top 40 JSE-listed company boards with less than 20% female directors.

H1: The annual return on equity of Top 40 JSE-listed company boards with 20% or more female directors is different from that of Top 40 JSE-listed company boards with less than 20% female directors.

The dependent variable of growth in share price provides insight into the market's perception in the event of increased female directors on the boards of Top 40 JSE-listed companies. This could reveal the prospective impact female presence on boards has on the financial performance of these companies. The remaining variables, annual revenue growth and return on equity, provide an internal view on the impact of female directors on company performance.

The study has been conducted on the Top 40 JSE-listed companies between 2015 and 2019. The listing of companies was obtained from Bloomberg, as the researcher has access to this resource through the researcher's organisation. The researcher has noted that the sample over selected years varies in size between 40 and 43, but this is due to certain companies being dual-listed. Secondary data has been gathered on these

companies by inspecting their board composition as set out in their integrated annual reports. These reports were obtained from the respective companies' websites as it is a JSE requirement to publicly publish these statements. In addition to integrated annual reports, databases such as Timbukone, Marketline, Bloomberg and Osiris were used to obtain data on share-price growth, annual revenue growth, and return on equity. These databases were used since they are available to the researcher through the researcher's educational institution. The Mann-Whitney U statistical test were conducted to test for differences between female directorships more than or less than 20% and share-price growth, annual revenue growth, and return on equity.

1.3 Need for the study and academic rationale

Though strides have been made in increasing female representation on corporate boards, it is still not enough given that an SDG has been dedicated to address gender inequality. Though gender inequality is wide-spread, findings from studies such as the Post & Byron (2015) study involving a meta-analysis of the connection between women on boards and firm financial performance, noting a positive relationship between the presence of women directors on corporate boards and monitoring and strategy involvement in the organisation.

Dang & Nguyen (2018) in their study state that the question remains whether or not female representation on corporate boards increases the firm value or value creation. There is a need in a South African business context to determine whether the presence of female directors on boards contribute to firm value. There is a social need to know whether the country is making strides in combatting gender inequality in the workplace. A need exists to determine the effectiveness of the JSE gender policy regulations as studies such as the study conducted by Labelle, Francoeur, & Lakhal, (2015) reveal a positive relationship between gender diversity and firm performance in countries where a voluntary approach has been encouraged. This study will therefore build on the knowledge of Labelle et al. (2015) and provide insight from a South African perspective, since few recent studies have been conducted in this field.

The research conducted in this field, often defined financial performance in terms of either Tobin's Q and Return on Assets as noted in the studies by Pucheta-Martínez, Bel-Oms, & Olcina-Sempere (2018), Gyapong et al. (2016) and Owen & Temesvary (2018). The present research therefore provides an alternate perspective on analysing the impact on financial performance by reviewing variables such as share-price growth, annual revenue growth, and return on equity, thus providing an accounting and market lens on financial performance.

Given the lack of sectorial analysis in this field of research, there is a need to determine whether certain sectors are at the forefront in increasing female representation on their boards. This presents opportunities for further research in order to determine why certain sectors have more gender-diverse boards than others.

This paper sought to contribute to highlighting the problem of gender inequality in the boardroom of the Top 40 JSE- listed companies. Based on the statistical tests performed, it was noted that there is no difference on annual share-price growth and return on equity where boards have 20% or more female directors. However, a statistically significant difference is noted on annual growth where 20% or more female directors are present on the board of the JSE Top 40 companies between 2015 and 2019. Though policies have been implemented and strides have been made over the past five years, given the large population of women in South Africa, it is still not acceptable to have 27 % female board representation.

The following chapters will explore the current body of knowledge in this field of research, detail the hypotheses tested by the researcher, and the methodology applied. Thereafter, the results of the statistical tests are discussed, followed by an exposition of the conclusion of the study.

Chapter 2: Literature review

Introduction

Notwithstanding the revision of the King Code of Corporate Governance, as well as the introduction of gender policy disclosure by companies listed on the JSE, given that these policies and regulations have been introduced to address the problem of inadequate gender diversity on boards in South Africa, it would be worthwhile to investigate whether the same results have been achieved in a South African context as set out in the study by Reguera-Alvarado, de Fuentes, & Laffarga (2017) who found that the regulations provide the framework to implement the recommendations of good governance,

Few studies conducted also explore instances where a certain threshold of female directorship has been breached and its effect on financial performance. Pucheta-Martínez et al. (2018) examined the effect of female directors on firm value and found that when female directorships on a board exceed the threshold of 11.76%, firm value is negatively affected. The dependent variables relating to firm value in Pucheta-Martínez et al. (2018) was defined as Tobin's-Q, a market-related metric. The population included non-financial companies listed on the Madrid Stock exchange between 2004 and 2013 Pucheta-Martínez et al. (2018). This population is in contradiction with the populations researched by other studies in this field, many of which included the all industries on various countries stock exchanges. It therefore warrants and investigation as to whether financial performance is affected when female directorships on a company board exceed a certain threshold, in this case, 20% however within a more local context.

Furthermore, the literature varied in the means used to measure financial performance and firm value. The sample population per study varied from companies listed on various countries' stock exchanges to specific listed companies in certain industries such as financial institutions. There is no recent specific South African literature, and literature is often focused on the rest of Africa, Europe and the United States of America and not South Africa specifically.

An opportunity, therefore, exists to explore the relationship between female directorships and financial performance, which is defined as annual revenue growth, return on equity, and share-price growth in a South African context.

The studies reviewed do not provide insight as to whether certain sectors are more compliant in terms of their adherence to gender policy disclosure. An opportunity, therefore, exists to explore whether certain sectors are more compliant and are more gender diverse than others. This could perhaps reveal further areas of research which will be confirmed through the analysis of the statistical test performed in this study.

This literature review depicts the diverse research findings on the impact of female directorships on financial performance. The literature presents mixed views on the impact of female directors on financial performance. One exception was the study by Adusei et al. (2017), that found that boards with female directors above 50% of the total board composition, impacted financial performance negatively. The dependent variables across the literature have most commonly been identified as Tobin's Q, Return on Assets, or Return on Equity. Most notably, the literature reveals the view that financial performance can be analysed through either an accounting or a market view. This study incorporates both those views by the inclusion of the growth in share price as a dependent variable representative of market-based financial performance, and annual revenue growth and return on equity as the dependent variables analysing financial performance from an accounting point of view.

2.1 Theoretical bases

The literature reviewed revealed that board gender diversity has been often analysed using the agency theory, resource-dependency theory, token-status theory, the stakeholder theory, gender-role theory, upper-echelons theory and the resource-based view of the firm. For this research, the researcher will view the impact of gender diversity of boards, in a South African context, with the theoretical lens of the upper-echelons theory and the critical-mass theory.

Upper-echelons theory

The upper-echelons theory states that “organisational outcomes, strategic choices and performance levels are predicted by managerial background characteristics” (Hambrick & Mason, 1984). In Hambrick & Mason (1984) these managerial characteristics are defined as “age, tenure at the organisation, functional background, education, socio-economic background and financial position”.

The analysis of this theory in light of the research — establishing the link between female directorships and financial performance — provides insight into whether a more gender-diverse board of directors impacts the organisational outcomes. In this instance, those organisational outcomes, specifically performance, have been defined as return on equity, growth in share price, and annual revenue growth.

Hambrick & Mason (1984) suggest that organisational outcomes are reflective of the background, more specifically, values and cognitive bases of managers in organisations.

The relevance of this to the study at hand is that it reveals the impact of female directors’ values and cognitive bases on the organisational outcomes, which is the financial performance of the organisation in the context of this study. The study has thus challenged the upper-echelons theory as noted in the study by Adusei et al. ((2017) of board and management gender diversity and financial performance of microfinance institutions.

Critical-mass theory

The literature indicates that the implementation of legislative or regulatory mechanisms to increase board gender diversity provides mixed results. The critical-mass theory purports that “three or more females on a corporate board represents a voice” (Brahma et al. (2020).

The implementation of mechanisms to increase the presence of women directors on corporate boards increases the risk of women being solely appointed due to their gender. The literature offers mixed reviews as to the number or specific threshold of female directors in relation to the financial performance of organisations.

This study, therefore, challenges the critical-mass view by analysing whether 20% or more female directors on the board or less than 20% female directors on the board has a difference on an organisation's financial performance.

These two theories, therefore, provide an encapsulated view of the link female directors have to share price, annual revenue growth, and return on equity.

2.2 Board gender diversity and financial performance

Samples of studies reviewed

Of the literature reviewed, many studies focused on using listed companies as samples in their studies. The study by Mans-Kemp & Viviers (2015) covered a sample of 1542 JSE-listed companies for 2002 to 2012. In the study conducted by Post & Byron (2015) an analysis of the impact of women on boards on firm financial performance was conducted by the analysis of a sample of 140 studies.

Another study conducted on South African companies included a sample of 245 South African JSE-listed firms in the period 2008 to 2013 (Gyapong et al., 2016). This sample differs from the present study as it focuses on all of the companies listed on the main board as opposed to the present study which focuses on the Top 40 companies only.

A global view on this field of study is offered by a study conducted by Tersjen, Couto, & Francisco (2016) on 3876 public companies in 47 countries, with South Africa included as a sample item. In Denmark and Norway, a study was conducted by Marinova, Plantenga, & Remery (2016) on 102 Dutch and 84 Danish firms of which at least 40% had one woman serving on the board. The sample population revealed that the average share of women on boards was only 5.4% (Marinova et al. (2016). In contrast to Mans-Kemp & Viviers (2015), the study neglected to evaluate the average percentage of female representation on the boards of the JSE listed companies in the period under review.

Adusei et al. (2017) focused on investigating the impact of board and management diversity on the financial performance of microfinance institutions. The population in the study included 494 microfinance institutions, covering 76 countries in the world, and spanned the period of 2010 to 2014 (Adusei et al. (2017). Another study focusing on financial institutions is the study of Owen & Temesvary (2018) which included a sample of 90 US banks over the period of 1999 to 2015 (Owen & Temesvary, 2018). In the study conducted by Manyaga, Muturi, & Oluoch (2020), the board gender diversity of 34 commercial Kenyan Banks between the periods 2008 to 2017 was analysed.

Offering a US view on the lack of gender diverse boards, the study by Conyon & He (2017) involved the analysis of firm performance and board gender diversity of 3000 US firms between 2007 and 2014.

The study by Shehata, Salhin, & El-Helaly (2017) in contrast to other studies, included a sample of 34 978 UK small and medium-sized enterprises (SMEs) over the period of 2005 to 2013. Also offering a different view, and a sector-specific view is the study of Usman (2018) of 12 building-materials companies listed on the Nigerian Stock Exchange. The study conducted by Hoobler, Masterson, Nkomo, & Michel (2017) included a sample of 78 studies, including 117 639 companies. This study offered a meta-analysis of the business case for women leaders (Hoobler et al. (2017).

In Sani et al. (2019), a population of 400 non-financial listed companies in Nigeria was studied over the period 2012 to 2016. Information such as board composition and financial ratios was extracted from the listed companies' annual reports (Sani et al. (2019). The Papangkorn, Chatjuthamard, Jiraporn, & Chueykamhang (2019) study analysed a sample 1 951 firms between 1997 and 2014, found on the Institutional Shareholder Services database.

A recent UK study of board gender diversity and firm performance by Brahma et al.. (2020) focused on a sample of 100 UK FTSE listed firms between 2005 and 2016. To provide an African perspective, Chijoke-Mgbame, Boateng, & Mgbame (2020) conducted a study on a sample of 77 firms listed on the Nigerian Stock Exchange between 2008 and 2016.

To offer a study with the perspective of women directors as part of top management teams of companies, Fernando, Jain, & Tripathy (2020), using data from ExecuComp and Compustat, conducted a study of 2 635 US firms, analysing gender-diverse boards and its impact on firm performance.

Theories

Post & Byron (2015) tested the upper-echelons theory with the primary study variables of female board representation and firm financial performance amongst others.

The Gyapong et al. (2016) study builds on the cognitive development theory and maintains that cognitive differences can be seen in the decision-making manner of men and women (Gyapong et al., 2016). It also builds on the token-status theory which women have little no representation on the board (Gyapong et al., 2016).

The study by Tersjen et al. (2016) is premised on the resource-dependency theory, agency theory, and the gender-role theory. Interestingly, in the analysis of the gender-role theory, it describes how the behavioural norms of women and men differ when communicating and influencing others (Tersjen et al., 2016).

Research conducted by Adusei et al. (2017) is underpinned by the resource-based view of the firm, thus implying that gender diversity at board level should positively influence firm performance. Adusei et al. (2017) maintain that female directors react differently from their male counterparts to questioning.

The theories challenged by Shehata et al. (2017) include the stakeholder theory, agency theory and the contingency theory. Shehata et al. (2017) hold the view that a company's performance is impacted by two roles – a monitoring role and a resources role.

Usman, (2018) further builds on the agency theory and suggests that the stakeholder theory underpins the agency theory and therefore explained his research in terms of these two theories. The study by Sani et al. (2019) built on the agency and resource dependency theory. With the interpretation of the agency theory, the theoretical background revealed the influences of gender diversity on the capacity of the board as well as decision-making capabilities Sani et al. (2019). The interpretation of the resource-dependence theory found linkages between women and improved independence of the board (Sani et al., 2019).

The study by Manyaga et al. (2020) postulates that, in terms of the stakeholder theory, having more women directors on the board results in the board feeling pressured to meet stakeholder expectations and thus results in further improved financial performance.

The study by Brahma et al. (2020) analysed the impact of female directors through the lens of the critical-mass theory. This study found that where there are three or more women on the board of directors of an organisation, this leads to a significant increase in firm performance.

Financial performance

The study measured financial performance through the interpretation of accounting ratios, such as net profit margin, return on equity, return on assets, earnings per share and net profit margin (Mans-Kemp & Viviers, 2015). The financial performance of firms was categorised by Post & Byron (2015) between accounting-based measures and market-performance measures. Accounting returns in this study were defined as return on assets, return on equity and return on invested capital (Post & Byron, 2015). An alternative approach suggested by Post & Byron (2015) defines market performance measures as Tobin's Q, stock performance and shareholder returns. Stock performance in a South African context relates to share-price performance and shareholder returns relates to return on equity.

Firm value according to Gyapong et al. (2016) is interpreted as Tobin's Q since the authors felt that measures such as return on assets, and return on equity are short-term measures as opposed to Tobin's Q which the authors view as a long-term measure.

In the study by Marinova et al. (2016) the firm performance was defined as Tobin's Q, similar to studies conducted by Tersjen et al. (2016), Gyapong et al. (2016), Shehata et al. (2017) and, most recently, Brahma et al. (2020). However, firm performance was only measured in terms of a market-based measure in Marinova et al. (2016)'s study. In contrast, Adusei et al. (2017) measured financial performance with accounting-based measures only, return on assets and a ratio of revenue divided by operational expenses. A similar revenue to expense ratio was used as a measure of financial performance by Owen & Temesvary (2018) and also included return on assets as well as ratios focused on risk appetite and pay equity as measures.

Financial performance in the Conyon & He (2017) study was analysed according to Tobin's Q and Return on Assets (Conyon & He, 2017). Furthermore, firm performance has been defined as Return on Assets by Shehata et al. (2017). Once again, there are differing views on the measurement of financial performance between market-based and

accounting-based measures.

In the study by Shehata et al. (2017), market-related indicators, such as Tobin's Q, were found not to be relevant, hence the use of return on assets was used as a dependent variable instead as the only measure of financial performance.

Of the literature reviewed, few studies analysed firm financial performance by analysing sales as a measure. The study by Hoobler et al. (2017) offered a meta-analysis of female leadership, defined as women in top management or board of directors positions, or as CEOs, and its effect on financial performance.

Firm performance as studied by Green & Homroy (2018) applied return on assets as a measure of firm performance. Inferences can also be drawn from the study of Martin-Ugedo, Minguez-Vera, & Palma-Martos (2018) who included the dependent variables of return on equity and return on assets in their study.

Financial performance in terms of Usman's study (2018) was evaluated according to accounting ratios, such as return on assets and return on equity, similar to Mans-Kemp & Viviers (2015).

Financial performance in the present study of Compton, Kang, & Zhu (2019) and the dependent variable was defined as Tobin's Q or Return on Assets – thus providing a market and accounting perspective in terms of performance (Compton, Kang, & Zhu, 2019). The measurement of performance with such a view is shared by other researchers such as Tersjen et al. (2016).

Similar studies such as that of Chijoke-Mgbame et al. (2020), also focused on accounting-based and stock-based or, more accurately, market-based measures (Papangkorn et al., 2019). Multiple dependent variables were analysed by Papangkorn et al. (2019) such as: Return on Assets; EBIT over total assets; EBITDA over total assets; Tobin's Q and market-to-book ratio. An overlap of these ratios with the other literature reviewed thus far can be

noted.

In the recent study by Brahma et al. (2020) variables identified included Tobin's Q and Return on Assets again, including both an accounting and a market-based view on financial performance. In the study by Fernando et al. (2020), firm performance was defined by Tobin's Q and Return on Assets as in much of the literature reviewed in this chapter.

Threshold

In support of the threshold argument for higher female representation on corporate boards, the findings of Post & Byron (2015) in support of this proves that boards with higher female representation tend to have higher accounting returns, but not significantly higher market-performance rates Offering support to this argument, when Adusei et al. (2017) performed threshold analysis, their study revealed that where there were 50% or more women on boards and management, enhanced financial performance was noted (Owen & Temesvary, 2018). However, in banks, where the threshold of female board representation was between 13% and 17%, better performance of banks was noted.

Views/Findings

The study by Mans-Kemp & Viviers, (2015) revealed a positive relation between impact on earnings per share and female and black directors. Contrasting with these findings were those of Post & Byron (2015) which revealed mixed reviews of the relationship between women on boards and the financial performance of firms. The Post & Byron (2015) study revealed that boards with higher female representation tend to have higher accounting returns, but that it is not significantly related to market performance.

Adding to the mixed reviews in this field of study are the views of Adams, de Haan, Terjesen, & van Ees (2015). Adams et al. (2015) interestingly note that the mixed findings

of literature in this field are an effect of differences in measures of performance, methodologies, time horizons and variables.

Gyapong et al. (2016) found that financial value is positively impacted by gender and ethnic diversity on boards. The study indicated that the biggest impact on a company's value was noted where boards had more than three female directors (Gyapong et al. (2016).

Though the study of Tersjen et al. (2016) focuses primarily on board diversity, the study revealed that firm performance is enhanced where boards have more female directors serving on them (Tersjen et al. (2016), but the study contradicts the finding of Post & Byron, (2015) in relation to market performance.

As with other European studies on a possible link between board gender diversity and firm performance, the study conducted by Marinova et al. (2016) revealed that board gender diversity had no effect on firm performance. Again, adding to the mixed views, Adusei et al. (2017) found that gender-diverse boards affect financial performance in a negative manner.

The Conyon & He (2017) USA study found improved firm performance with the presence of females on the board of directors of the company. Interestingly, the study revealed that the presence of women directors on high-performing firms has a more significant impact than in lower-performing firms (Conyon & He, 2017). This presents a possible area for the researcher to explore. This study adds to the mixed reviews of literature but notes that a positive correlation between the companies financial performance and board gender diversity does exist (Conyon & He, 2017).

Providing a view on the impact of female directors on financial performance of SMEs, (Small to Medium Enterprises) the study by Shehata et al. (2017) revealed a significant negative association between gender and age diversity and firm performance In support of the mixed views of the impact of gender-diverse boards on firm performance, Green & Homroy (2018) found that there is a minimal economic impact when evaluating the impact of gender-diverse boards.

The results from Hoobler et al. (2017) reveal that female leadership impact firm performance, most notably sales performance and suggests that a positive influence on sales is noted. This is the only study encountered by the researcher where sales performance has been used as a measure of performance. Financial performance was assessed by means of both accounting and market-based measures. Accounting-based measures used in the study include: return on assets, return on equity, return on capital, and return on investment (Hoobler et al. (2017). The market-based measures include: Tobin's Q, stock performance and market capitalisation (Hoobler et al. (2017). The findings of Hoobler et al. (2017) align with those of Post & Byron (2015) that note a positive impact on firm performance where woman serve on the board as a directors.

Other studies, such as those of Green & Homroy (2018) and Owen & Temesvary (2018), yielded inconclusive results. On the other hand, Owen & Temesvary (2018) found that when a threshold of female participation on a board exists, a positive effect is noted, however, this positive effect is only noted in banks with strong capital structures.

Findings by Martin-Ugedo et al. (2018) add to the mixed findings in this field with their conclusion that, in cases where publishing companies have female CEOs, those companies demonstrate greater returns than others. On the other hand, Usman (2018) found that gender diversity of boards had a negative and limited impact on financial performance, which is somewhat similar to the findings of Manyaga et al. (2020). These researchers had narrowed their research to specific sectors.

Another contrasting finding in this field of research is that of Sani et al. (2019), that gender diversity does affect the financial performance of companies. The findings of the study by

Compton et al. (2019) show that where there is female representation on a firm's board of directors, the financial performance of the firm improves.

The findings of the study by Papangkorn et al. (2019) on female directors and firm performance during the recession period, add to the mixed reviews in this area of the literature. Notably different from other studies, Papangkorn et al. (2019) chose to focus on a specific period, the great recession in 2008, and analysed the relationship between female directors and firm performance in this period compared with other normal periods. Papangkorn et al. (2019) investigated periods outside the recession, where statistical results revealed that having female directors on a board does not improve the value of firm performance and that there is in fact a significant negative relationship between firm performance and female directors.

Another conflicting view of the impact of a gender-diverse board on financial performance, is the study of Manyaga et al. (2020). The researchers' findings indicated that a gender-diverse board impacted the return on equity for commercial banks negatively, but also that the influence of a gender-diverse board is statistically significant, contrary to his expectations (Manyaga et al. (2020). Brahma et al. (2020) most recently, concluded that a gender-diverse board has a positive and significant influence on the financial performance of firms. Interestingly, the effect is more significant where three or more women are serving on a board. The recent study by Chijoke-Mgbame et al. (2020) concluded that female directors had a positive and significant influence on firm performance. Furthermore, boards comprising two or more women directors showed stronger financial performance (Chijoke-Mgbame et al., 2020). This adds to the mixed views from literature as to the effects of women directors on financial performance.

The study conducted by Fernando et al. (2020) concluded that the proportion of women in the top management team is positively and significantly correlated to Tobin's Q and Return on Assets, showing that gender diversity is positively related to firm performance.

Conclusion

The study by Mans-Kemp & Viviers (2015) raised the concern of how board diversity can be improved in companies listed on the JSE. The researchers were motivated to show that further research would be necessary to determine the relationship between board diversity and financial performance metrics that are market-related (Mans-Kemp & Viviers, 2015).

It would be interesting to explore the response of JSE-listed companies to the revisions made in the King IV Report as well as the JSE listing regulations, considering that such studies as Mans-Kemp & Viviers (2015) highlighted concerns regarding the board gender diversity of JSE-listed companies.

The findings in the present study contrast with the findings in Manyaga et al. (2020) and thus indicate that board gender diversity may differ from sector to sector. It furthermore presents another possible area to explore – perhaps certain sectors have a shortage of skilled females, or perhaps there are social and cultural factors influencing the appointment of women as directors.

Motivating the test for prediction in the present study, this study will either prove or disprove the findings of Post & Byron, (2015) of higher accounting returns in cases where female representation is higher when measuring this in terms of accounting returns – return on equity in this context. It will be beneficial for this study to analyse whether a similar predicted outcome exists in the case of the market performance, where Post & Byron (2015) noted that higher female board representation is not significantly related to this market performance measure.

Adams et al. (2015) point to the mixed findings of literature in this field, and it is important to note this in the context of this study. Several factors, as noted by Adams et al. (2015), such as measures of performance, methodologies, time horizons, and differing variables, could impact this study.

What is interesting to note is that only 16% of the sample population probed by Gyapong, et al (2016). had boards where three or more female directors were present (Gyapong et al., 2016). Given the findings by Gyapong et al. (2016), this prompts the question of

whether boards in South Africa are gender diverse even after revisions made to the King Report and JSE listing regulations. Also, whether these interventions addressed the challenge of gender diversity in South Africa adequately and whether the situation has improved over the past few years. Furthermore, the study could provide insight in terms of how South Africa fares on a global level in its attempts to tackle the challenge of gender-diverse boards.

Additionally, other studies evaluated the effect of the presence of female CEOs on firms' financial performance as in Martin-Ugedo et al. (2018). The study conducted by Li, Sok, Kang, & Zhu (2020) concentrates on the relationship between female board representation and financial performance and whether the relationship is affected by firms being located in different locations, it offers valuable insight and builds on the findings of the literature on the relationship between female directors and firms' performance.

2.3 Board gender diversity and the impact of regulations aimed at addressing diversity challenges

The researcher has reviewed literature analysing the impact of mechanisms aimed at increasing board gender diversity. The literature reveals mixed findings on the impact of such mechanisms.

The study by Isidro & Sobral (2015) mentions the introduction of a minimum 40% quota of females on corporate boards to address the under-representation of females on boards of companies listed on the European stock exchanges. It is important to note that the regulation is legally binding by the European Commission (Isidro & Sobral, 2015). Of the literature reviewed, few mechanisms implemented are legally binding. Norway was the first country to introduce gender-equity quotas in 2002, with a minimum quota of 40% female representation at director level (Chengadu & Scheepers, 2017).

Similarly, Isidro & Sobral (2015) provide a mixed view as well and state that no evidence can be found to confirm that higher female representation on the board directly affects the

firm's value, despite evidence confirming the indirect positive effects on firm performance. The study included a sample of 16 large European firms over the period of 2010 to 2012 and identified Tobin's Q and Return on Assets as the variables defining firm value (Isidro & Sobral, 2015) with no effect noted on Tobin's Q but a positive effect on Return on Assets. Once again, firms' performance was analysed using accounting and market-based measures.

In determining whether increasing board gender diversity is effectively achieved by regulation or not, the study by Labelle et al. (2015) included a sample of 1 691 firms from 17 countries with firm performance defined as return on assets (Labelle et al. . 2015). Labelle et al. (2015) found a positive relationship between board gender diversity and firm performance in countries using a voluntary approach. The inverse being negative in countries applying the regulatory approach (Labelle et al. (2015). Adding to the mixed views, Adams et al. (2015) noted that in the studies examined, several concluded that gender quotas had a negative effect on firm performance.

In Spain, a study was conducted on 125 non-financial listed firms on the Madrid stock exchange throughout the period 2005 to 2009 (Reguera-Alvarado et al. (2017). The results demonstrated that, where regulations have been introduced to address the social and labour injustices women have historically experienced, an increase of 98% of the number of woman on boards has been witnessed (Reguera-Alvarado et al. (2017). The study also found that compulsory regulations provide the framework to implement the recommendations of good governance (Reguera-Alvarado et al., 2017). This is contrary to the findings of the Labelle et al. (2015) study.

Building on the aforementioned literature, on a global level, Bennouri, Chtioui, Nagati, & Nekhili (2018) conducted a study on 394 French firms between 2001 and 2010 to investigate the relationship between female directorship and firms' financial performance. The metrics used to measure financial performance included, return on equity, return on assets and Tobin's Q (Bennouri et al. (2018). The study noted a positive impact on return on assets and return on equity, however, it noted an opposite effect on Tobin's Q (Bennouri et al. (2018). The study further determined that financial performance was influenced by the attributes of the women directors, specifically their monitoring

capabilities (Bennouri et al. (2018). The period investigated included no introduction of policies requiring a specific quota of women on the boards of these French firms (Bennouri et al. (2018).

In support of the findings of Brahma et al. (2020), Pucheta-Martínez et al. (2018) present evidence suggesting that, as opposed to instituting policies aimed at increasing the presence of female directors on boards, gender quotas should instead be recommended; this aligns with the findings of Brahma et al. (2020) of an improvement in female representation on the boards of companies in the UK. It furthermore supports the findings of Labelle et al. (2015) who found a positive relationship between female directors and firm performance where a voluntary approach had been followed.

Similarly, in the study by Nekhili, Gull, Chtioui, & Radhouane (2020) the success of gender quota legislation should not be premised on the increase in the number of female directorships on the board of a company, but rather on boosting the appointment of independent female directors. What therefore remains to be explored are perhaps the strategies aimed at appointing women directors on boards of companies and not the introduction of policies and regulations aimed at increasing this demographic representation on boards of JSE-listed companies.

The researcher believes that it is important to note the risk of implementing mechanisms of a social or political in nature to address the lack of female representation on boards — token representation (Green & Homroy, 2018). Green & Homroy (2018) further mention that the economic implications of a gender-diverse board become unclear in politically or socially regulated situations.

Another consideration in considering the effectiveness of such mechanisms is whether mechanisms are voluntary or involuntary. Brahma et al. (2020), in a study that focuses on FTSE 100 firms in the UK, mentions that a voluntary approach has been followed in the UK, which has seen the rise of women on boards in the UK. Brahma et al. (2020) explain the reasoning behind the voluntary approach as seeking to encourage a significant shift in organisational culture thus discouraging token representation, as stated in (Green &

Homroy, 2018).

Conclusion

The literature offers mixed views on the effectiveness of mechanisms such as legislated gender quotas and formal regulations aimed at increasing female board representation. Given the tendency by literature to favour a voluntary approach to increasing female representation on corporate boards, the researcher has an opportunity to explore, in a South African context, whether the gender policy disclosure requirement implemented by the JSE in 2017, has had any impact on the representation of women.

Chapter 3: Research hypotheses

3.1. Annual Share price growth

JSE-listed Top 40 company boards with 20% or more female directors will have higher annual share price growth than JSE-listed Top 40 companies with less than 20% female directors.

H0: JSE Top 40 listed companies' boards of directors with at least 20% female directors will experience no or negative growth in share price.

H1: JSE Top 40 listed companies' boards of directors with at least 20% female directors will experience positive impact on growth in share price.

Analysing financial performance by means of share price provides a view of shareholder sentiment, and demonstrates that shareholder sentiment is better when 20% or more women directors serve on the board. This offers an external view of the impact of female board representation.

The annual share-price growth ratio is calculated as follows:

$$= (Current\ year\ share\ price / previous\ year\ share\ price) - 1$$

3.2 Annual revenue growth

JSE-listed Top 40 company boards with 20% or more women directors will have higher annual revenue growth than JSE-listed Top 40 companies with less than 20% female directors.

H0: JSE Top 40 listed companies' boards of directors with at least 20% female directors will experience no or negative growth in annual revenue growth.

H1: JSE Top 40 listed companies' boards of directors with at least 20% female directors will experience positive impact on annual revenue growth.

An alternate analysis of financial performance from an internal point of view is offered by the evaluation the impact of women directorships on annual revenue growth.

The annual revenue growth ratio is as follows:

$$= (Current\ year\ revenue / previous\ year\ revenue) - 1$$

3.3 Return on equity

JSE-listed Top 40 company boards with 20% or more women directors will have a higher return on equity than JSE-listed Top 40 companies with less than 20% female directors.

H0: JSE Top 40 listed companies' boards of directors with at least 20% women directors will experience no or negative growth in return on equity.

H1: JSE Top 40 listed companies' boards of directors with at least 20% women directors

will experience positive impact on growth of equity.

Return on equity is widely quoted in literature as an accounting measure of financial performance. The analysis of women directorships' link to such a measure thus offered an internal lens on financial performance.

The return on equity ratio is calculated as follows:

$$= (Net\ income/shareholders\ \ equity) - 1$$

Each of the above hypotheses will be tested on the JSE Top 40 listed companies, and further analysed per sector to establish whether certain sectors are at the forefront of establishing gender-diverse boards and adhering to the gender policy requirements. Limited studies have been conducted on determining the impact of female directorships where given thresholds have been breached. The literature indicates the lack of such a study in a South African context. Further gaps noted in the literature, is the timelines study by various researchers. The most recent study in a South African context conducted by Mans-Kemp & Viviers (2015) lacks insight into the impact of JSE regulations on female board representation.

The research questions to be answered, following the review of literature in this field and the research objectives outlined in Chapter 1, are as follows:

1. Is there a difference in the financial performance of JSE Top 40 listed companies between 2015 and 2019 with the presence of 20% or female directors on the board?

Chapter 4: Research Methodology

4. Choice of methodology

4.1 Philosophy

The researcher aimed to establish whether the financial performance of JSE Top 40 companies with 20% or more female directors is significantly different from that of companies with less than 20%. This has been achieved by using descriptive statistics and analysing the data yielded by the statistics.

The study focused on the boards with female directors of JSE Top 40 companies because there is a presumption that these companies adhere to policies and regulations and therefore it is more likely that female directorship representation on the boards of these companies exceeds 20%. Few studies reviewed have investigated the impact of differences of the percentage threshold of female directors on a corporate board. The study conducted by Isidro & Sobral (2015) provides some insight into such a threshold, which in that study, was a mandatory gender quota imposed by the European Commission.

This choice of philosophy was supported by the study conducted by Adusei et al. (2017) that evaluated the impact of board gender diversity on the financial performance of 12 micro-finance institutions.

Scotland (2012) defines positivist epistemology as cases where researchers are objective and venture into the world impartially, with the intention of discovering absolute knowledge concerning an objective reality. The positivist methodology is aimed at clarifying relationships and methods which often generate quantitative data (Scotland, 2012).

The researcher has been independent and meaning has been obtained from objects as opposed to obtaining it from the conscience of the researcher. This study explored how different financial performance can be when female directorships breach a percentage threshold, in this case, 20%.

The threshold has been informed by statistics from the Businesswomen's Association of South Africa (2017), 2020 Women on Boards Gender Diversity Index (2019) and European Women on Boards Gender Diversity Index, (2019), which consider female representation on boards in a South African, North American and European context.

Interpretivists recognise that value-free knowledge is impossible and requires interpretivists to assert their beliefs upon deciding the area of research, how to research and interpret the data (Scotland, 2012). The methods employed by interpretivists provide insight into behaviour, explanations to actions from the participants' point of view and do not seek to control research participants (Scotland, 2012). Interpretivism usually produces highly contextualised qualitative data and the knowledge produced by the research has limited transferability (Scotland, 2012).

4.2 Approach

For this research question, a deductive approach was adopted, prompting the researcher to apply a framework with anticipation that certain core concepts were already present in the data.

Across a wide range of the existing literature, various theories have been analysed by researchers. With the data available, Sani et al. (2019) tested the resource-dependence theory, agency theory and gender theory. Other researchers, such as Reguera-Alvarado et al. (2017) evaluated the influence of board gender on financial performance in terms of the agency theory, resource-dependency theory and the stakeholder theory. Pucheta-Martínez et al. (2018) explored the effects of female directors on boards and firm value in terms of the agency theory and gender theory.

The literature reviewed in this field of study, also often revealed the analysis of the upper-echelons theory by (Hambrick & Mason, 1984) and the critical-mass theory purported in Brahma et al. (2020) where “three or more females on a corporate board represents a voice”.

This study was analysed through the lens of the upper-echelons theory as suggested in the study by Post & Byron (2015) and the critical-mass theory as per the study by Brahma et al. (2020). The application and development of these theories were found to be lacking in a South African context where they could be invaluable since the researcher believes that extending research in this field will contribute to highlighting the problem of inequality within the boardrooms of the top performing companies in South Africa.

These theories have thus been analysed through an economic lens by an evaluation of whether JSE Top 40 companies with 20% or more female directors have significantly different results from those without women directors, in terms of the difference in annual share-price growth, annual revenue growth, and return on equity financial ratios.

For this purpose the researcher applied a deductive approach and this quantitative research is in line with previous studies that also tested hypotheses such as:

Hypotheses 1: Annual share-price growth

JSE-listed Top 40 company boards with 20% or more female directors will have a higher annual share-price growth than JSE-listed Top 40 companies with less than 20% female directors.

H0: JSE-listed Top 40 Company boards with 20% or more female directors, annual share-price growth is no different than Top 40 JSE-listed Company boards with less than 20% female directors.

H1: JSE-listed Top 40 Company boards with 20% or more female directors annual share-price growth is different to Top 40 JSE-listed Company boards with less than 20% female directors.

Hypotheses 2: Annual revenue growth

JSE-listed Top 40 company boards with 20% or more female directors will have higher annual revenue growth than JSE-listed Top 40 companies with less than 20% female directors.

H0: JSE-listed Top 40 Company boards with 20% or more female directors, annual revenue growth is no different than Top 40 JSE-listed Company boards with less than 20% female directors.

H1: JSE-listed Top 40 Company boards with 20% or more female directors annual revenue growth is different to Top 40 JSE-listed Company boards with less than 20% female directors.

Hypotheses 3: Return on equity

JSE-listed Top 40 company boards with 20% or more female directors will have higher return on equity than JSE-listed Top 40 companies with less than 20% female directors.

H0: JSE-listed Top 40 company boards with 20% or more female directors return on equity is no different than Top 40 JSE-listed company boards with less than 20% female directors.

H1: JSE-listed Top 40 Company boards with 20% or more female directors return on equity is different to Top 40 JSE-listed Company boards with less than 20% female directors.

4.3 Methodological choices

The mono-method of research involves the solidification of the study on a single research paradigm or, as stated in Schmitt & Stults (1982), correlations among traits measured by a single method. The mono-method can be applied in either quantitative or qualitative studies.

Based on the limited time frame and the type of study required, the researcher intends applying the mono-method for this quantitative study. Quantitative studies usually involve the investigation of subject matters which are observable and measurable (Antwi & Kasim, 2015). For this reason, the researcher chose to embark on a quantitative study to investigate female directorships and the difference certain thresholds have on financial performance of the Top 40 JSE-listed companies. The methodological choice is supported by literature such as Reguera-Alvarado et al. (2017), which performed a quantitative study and performed statistical analyses to determine the influence of board gender diversity on financial performance.

Descriptive statistics were also used to analyse the data from the study conducted by Tersjen et al. (2016). Similarly, the more recent study by Chijoke-Mgbame et al. (2020) applied descriptive statistics with the main variables of Return on Assets and Tobin's Q tested in the study.

4.4 Purpose of research design

Saunders & Lewis (2012) define descriptive studies as studies aimed at constructing accurate representations of persons, events or situations, also involving secondary data being reanalysed. As pointed out by Nguyen, Ntim, & Malagila (2020), many studies in this field of research are descriptive, drawing on single perspectives only.

For this study, the aim is to create an accurate representation of the relationship between female directorships and the financial performance of the JSE Top 40 listed companies by noting differences in financial performance where the 20% threshold for female directors has been breached. Therefore, a descriptive study research design will be followed by analysing the following four variables – annual share-price growth, annual revenue growth, and return on equity. This quantitative study was conducted over time, specifically between 2015 and 2019, and the hypotheses stated in chapter 3 have been tested by applying statistical techniques.

4.5 Strategy

Considering the different strategies available, this study will involve the application of experimental research strategy. Saunders & Lewis (2012) define this strategy as a theoretical hypothesis, but more precisely as a study to identify the trends between variables and whether a modification in one independent variable results in a modification in a dependent variable.

The study will enable the researcher to assess how, in cases where the number of female directors exceeds 20% of the board, financial performance is impacted, by the statistical analysis of annual share-price growth, return on equity, and annual revenue growth. As the intention is to test for differences in financial performance between JSE Top 40 companies with female directorships exceeding 20% and JSE Top 40 companies with less than 20% female directors, an experimental research strategy will, therefore, be applied

in this study.

4.6 Time horizon

Longitudinal studies involve the assimilation and compilation of data over a period of years (Blake et al. (2019).

For the purposes of this research, a longitudinal study has been performed over the period from 2015 to 2019. This will provide some insight into the impact of the JSE listing requirement of board gender diversity disclosure in integrated reports. The study involved the analysis of changes to the variables over a period of a time.

The timeline, 2015 to 2019, is motivated by studies such as Green & Homroy (2018), in which case the researcher explained that the sample period was chosen to obtain better coverage and consistency of data. Although Green & Homroy (2018) covered a period of ten years, the researcher for the present study chose five years, given the limited time available to complete the research as well as to obtain observations on the impact of the implementation of the JSE gender policy regulations.

4.7 Techniques and procedures

The technique employed in this study was secondary data collection. The researcher obtained data on JSE Top 40 listed companies from these companies' integrated annual reports. The share price, annual revenue growth and return on equity information, were contained in these companies' integrated reports. However, share prices were obtained from Bloomberg and Timbukone, and return on equity from Timbukone, Osiris and Marketline.

The integrated reports also provide information on board composition, which enabled the

researcher to distinguish between male and female board representation.

The researcher determined how many women are serving on each company's board by inspection of the integrated annual reports. Thereafter, the researcher calculated the number of female directors as a percentage of the total board membership to determine the percentage of female directors in each company. Year-on-year calculations were also performed on revenue and share prices to determine the annual revenue and annual share-price growth.

Given the literature review as indicated in Chapter 2, most studies used secondary data obtained from companies' integrated annual reports as well as databases, such as Thompson Reuters (Sani et al. (2019).

Proposed research methodology and design

4.8 Population

The population for this study is defined as the Top 40 companies listed on the Main Board of the Johannesburg Stock Exchange throughout the period of 1 January 2015 to 31 December 2019, because the researcher believed that reasonable inferences could be made from these companies and it is reasonable to assume that these companies are at the forefront of creating more gender-diverse boards. Furthermore, as mentioned above, Green & Homroy (2018) covered a ten-year period to ensure better coverage and consistency of its data. Although the period of this study differs, the same motivation applies. Additionally, the timeline selected is influenced by the limited research time frame, the introduction of the JSE gender-policy regulations in 2017 as well as enabling the researcher to make more meaningful contributions in terms of analysing financial performance over longer period as opposed to a shorter period.

The study focused on the boards with women directors of the JSE Top 40 companies as there is a reasonable presumption that these companies adhere to policies and regulations and thus there is a greater probability that female directorship on the boards

of these companies would exceed 20%.

The securities traded on the Main Board ranges from exchange-traded funds, exchange-traded notes, warrants and stocks of the Top 40 JSE- listed companies.

The researcher aimed to provide insight into the impact of the introduction of regulations by the JSE as well the King Code of Corporate Governance with regard to the gender diversity of boards. The researcher envisioned that it would be instructive to establish whether the percentage of female representation on boards has grown or dwindled since the introduction of such regulations, and the impact of the introduction of female directors on the financial performance of these companies.

Furthermore, the research has indicated the effect of a given threshold of female representation on boards on financial performance. For the purposes of this study, the threshold applied was 20%, a threshold informed by the statistics from Businesswomen's Association of South Africa (2017), 2020 Women on Boards Gender Diversity Index (2019) and European Women on Boards Gender Diversity Index (2019), that all report a representation of women on boards of companies of more than 20%.

The research has also provided insight into whether the policies and requirements introduced by the JSE and King Code of Corporate Governance have yielded the desired results – increased female representation on boards. The research has also indicated the possibility of introducing alternate measures aimed at addressing the poor representation of women on boards of listed companies.

4.9 Unit of analysis

The unit of analysis was the board of directors of the Top 40 JSE-listed companies between 1 January 2015 and 31 December 2019.

4.10 Sampling method and size

A simple sampling method has been applied in the study as defined by Taherdoost, (2018) to ensure that every item in the population has an equal chance of being selected in the sample. The sample and population are thus the same.

The population included all JSE Top 40 listed companies between 1 January 2015 and 31 December 2020. No Top 40 JSE-listed companies were excluded during this period. The population spanned the following sectors: Financials, Health Care, Materials, Consumer Discretionary, Consumer Staple, Energy and Telecommunications. Please refer to **Appendix 1**: JSE Top 40 Listed Companies 2019 for a listing setting out the various sectors.

This period includes the introduction of the JSE gender policy disclosure requirement in 2017 and revisions to the King Code of Corporate Governance. The sample selected will be tested from 2015, as the literature indicates that, although similar tests have been performed on this population, these tests have been performed on data dating back to 2012 such as in the study by Mans-Kemp & Viviers (2015).

The researcher was aware that the Top 40 JSE-listed companies' population will differ annually, as it is based on the financial performance of the top-performing companies for the corresponding financial year. The Mann-Whitney U test used to analyse the data assumes that the data is not normally distributed. As such, the researcher left the data unaltered the data year on year. The population has been limited to the Top 40 JSE- listed companies as it is inferred that these companies would have adopted company-wide policies aimed at encouraging female representation their boards.

The financial and board demographic data were collected from electronic databases such as Timbukone, Bloomberg, Osiris, Marketline and through analysis of the annual integrated reports of the sample selected.

4.11 Measurement instrument

The approach followed in the context of this study with respect to statistical tests, is the Mann-Whitney U Test. The Mann-Whitney U Test is often performed to test for differences between two independent groups; the dependent variable is either continuous or ordinal and not normally distributed. The Mann-Whitney Test is reflective of a T-test as indicated by Chen, Leung, & Evans (2018). This test was performed to examine the difference between JSE-listed Top 40 companies with female directors in excess or below 20% with regard to annual share-price growth, annual revenue growth and return on equity.

According to Edmonds & Kennedy (2017) validity is defined by how accurately the outcome of a study is answered by the proposed research question. Edmonds & Kennedy (2017) further state that validity of a measurement tool means that it measures what it was intended to measure. Four types of validity research designs exist with respect to quantitative studies: internal, external, construct and statistical conclusion (Edmonds & Kennedy, 2017).

Measuring the validity and reliability of a formative measure is not appropriate in this study. Thus the validity of the financial performance construct has been validated through theoretical reasoning Petter et al. (2007) through comparison to other literature in the field. Also, the researcher has not applied Cronbach's Q to determine reliability in this study as "internal consistency or reliability is unimportant because measures are examining different facets of the construct" (Petter et al., 2007).

Statistical analysis in this study has enabled the researcher to provide insight in terms of female directorships and its impact on financial performance, with specific focus on female representation of more than 20% on boards of the Top 40 JSE-listed companies during 2015 and 2019. This correlates with the study performed by Bennouri et al. (2018) that measured the presence of women on the boards of French companies through an expression of a percentage of women on those boards. The percentage is further motivated by statistics from Businesswomen's Association of South Africa 2017, (2020),

Women on Boards Gender Diversity Index (2019) and European Women on Boards Gender Diversity Index (2019) that all report a more than 20% representation of women on the boards of companies.

4.12 Data gathering process

In this study, the researcher analysed data obtained through the inspection of publicly-available annual integrated reports of the Top 40 JSE-listed companies between 2015 and 2019. The data extracted from these reports relate to the board composition and the gender policy disclosure as per the JSE Regulations.

Secondary data on annual share-price growth, return on equity and annual revenue growth were obtained from sources such as Timbukone, Osiris, Marketline and Bloomberg. Additional secondary data were gathered from the JSE Top 40 companies integrated annual reports which are mandatory in terms of the JSE Listings Regulations and are publicly available. Specifically, board composition, detailing gender and experience, was obtained by scrutiny of Top 40 JSE-listed companies' annual integrated reports and Timbukone.

The table below provides a graphical representation of the sources from which data were gathered:

Independent variable	Dependent variable	Dependent variable	Dependent variable
Female directors	Annual revenue growth	Share Price	Return on Equity
Annual integrated Reports - Listed Companies websites. Timbukone.	Annual integrated Reports - Listed Companies websites. Through inspection of Consolidated Annual Financial Statements.	Bloomberg and Timbukone	Marketline, Osiris and Timbukone

Databases such as Timbukone, Bloomberg, Osiris and Marketline were used to obtain data relating to share price, return on equity and annual revenue growth, given the

credibility of these sources. These databases have been used in existing literature such as the studies by Brahma et al. (2020) and Chijoke-Mgbame et al. (2020). The data captured were verified for reasonability upon inspection of the companies (independent variables) and dependent variables, annual share price, annual revenue and return on equity year-on-year. No companies were excluded from the dataset. Data were double-checked through re-inspection of annual integrated reports to confirm that the variables had been correctly captured by the researchers. As the Mann-Whitney test is a non-parametric test, the presence of outliers does not influence this test.

4.13 Analysis approach

The JSE listing obtained was sorted according to those companies with 20% or more female board representation. Thereafter, several statistical tests and techniques were used in the study through the use of SPSS and Microsoft Excel. The hypotheses in this study evaluated whether a significant difference exists between the mean share price, annual revenue growth, and return on equity between companies with female board representation.

The foundation of the study was the use of descriptive statistics which included the consideration of either T-tests, correlation or regression analysis. Given that the test is aimed at testing whether or not there is a difference in financial performance if female director representation on a board is either below or above 20%, a T-test was applied. As there are two groups of independent variables – JSE Top 40 company boards with less than 20% female directors and JSE Top 40 company boards with more than 20%, and three dependent variables, annual share-price growth, annual revenue growth and return on equity, the Mann-Whitney U Test was applied in the statistical analysis of each hypothesis.

Ratio data were collected to test the various hypotheses. Financial performance is defined by the inclusion of market ratios (share price) and accounting ratios (return on equity and annual revenue growth).

The above ratios defining financial performance were calculated as follows and the Mann-Whitney U Test in SPSS was applied to analyse each of the variables:

Annual share-price growth

$$= (Current\ year\ share\ price / previous\ year\ share\ price) - 1$$

Annual revenue growth

$$= (Current\ year\ revenue / previous\ year\ revenue) - 1$$

Return on equity

$$= (Net\ income / shareholders\ \ equity) - 1$$

It should be noted that this is the only dependent variable not using year-on-year analysis.

4.14 Quality controls

In quantitative research, the proposed quality controls are those that relate to the validity and reliability of data (Petzer, 2019). Validity as defined by Edmonds & Kennedy (2017) is the extent to which the result answers the research question and a distinction can be made between internal and external validity. Internal validity relates to causal inferences and external validity relates to the degree to which generalisations can be made about populations (Edmonds & Kennedy, 2017).

Edmonds & Kennedy (2017) state that the following process should be followed to produce valid and reliable results. The researcher has, therefore, applied the same process to

achieve valid and reliable results. It is as follows: “state the problem, formulate the hypothesis, design the experiment, make observations, interpret data, draw conclusions and accept or reject the hypotheses” (Edmonds & Kennedy, 2017). External validity has been achieved by the selection of appropriate sampling procedures.

To further ensure proper data capturing, the VLOOKUP tool in Microsoft Excel was employed to match year-on-year data of companies to ensure quality data capturing and the accuracy.

4.15 Limitations

The research is limited to the Top 40 South African companies listed on the JSE for the full period between 2015 and 2019. There are companies listed on the JSE Alt-X as well, which have been excluded from the study, thus limiting the findings of female board representations and its impact on financial performance. In the sample, certain industries were only represented by one company.

The study was limited to the Top 40 South African companies listed on the JSE to also provide insight as to the whether the gender policy regulations instituted by the JSE has yielded the expected results – increased female representation on the boards of companies.

Furthermore, the statistical tests performed were limited only to the 20% threshold. This limits the findings of this study as further research contributions could be made if other threshold percentage alternatives were tested as well.

Chapter 5: Results

5.1 Introduction

This chapter outlines the results of the statistical tests performed, a description of the sample obtained, the results on reliability and validity of the data, the data transformations and statistical results per hypotheses.

The purpose of this study was to test for differences between the independent variables, JSE Top 40 companies with 20% or more female directors and JSE Top 40 companies with less than 20% female directors, and the dependent variables — annual share-price growth, annual revenue growth, and return on equity of the Top 40 JSE-listed companies between 2015 and 2019.

5.2 Description of the sample obtained

To understand the tables below, descriptions of the various industries are necessary.

The Consumer Discretionary Industry can be viewed as the industry offering non-essential goods and services to consumers.

The Consumer Staple Industry can be classified as companies that produce household products.

The Energy Industry – solely comprising Sasol — relates to companies producing or selling energy or energy-related products.

The Financial Industry can be described as those companies offering financial services to consumers.

The Health-care Industry comprises companies offering medical equipment, manufacturing of pharmaceuticals, provision of medical services and insurance.

The Industrials Industry, solely comprising the Bidvest Group, relates to companies that manufacture or distribute capital goods, engineering, construction, electrical equipment, general industries and transportation.

The Telecommunications Industry includes companies that provide telecommunication services enabling the transmission of information.

Many women directors identified in the period of 2015 to 2019, served on the boards as non-executive directors.

The variables in the statistical analysis are as follows:

Hypotheses	Independent variable	Dependent variable
Hypotheses 1	JSE Top 40 Companies boards of directors with at least 20% female directors	Annual share price growth
Hypotheses 1	JSE Top 40 Companies boards of directors with less than 20% female directors	Annual share price growth
Hypotheses 2	JSE Top 40 Companies boards of directors with at least 20% female directors	Annual revenue growth
Hypotheses 2	JSE Top 40 Companies boards of directors with less than 20% female directors	Annual revenue growth
Hypotheses 3	JSE Top 40 Companies boards of directors with at least 20% female directors	Return on equity
Hypotheses 3	JSE Top 40 Companies boards of directors with less than 20% female directors	Return on equity

Table 5.1 List of Top 40 JSE companies between 2015 and 2019

All companies listed below were included in the statistical tests.

2015			2016			2017			2018			2019		
No.	Company	Sector	No.	Company	Sector	No.	Company	Sector	No.	Company	Sector	No.	Company	Sector
1	Absa Group Ltd	Financials	1	Absa Group Ltd	Financials	1	Absa Group Ltd	Financials	1	Absa Group Ltd	Financials	1	Absa Group Ltd	Financials
2	Anglo American PLC	Materials	2	Anglo American PLC	Materials	2	Anglo American PLC	Materials	2	Anglo American PLC	Materials	2	Anglo American PLC	Materials
3	Anglo American Platinum Ltd	Materials	3	AngloGold Ashanti Ltd	Materials	3	AngloGold Ashanti Ltd	Materials	3	AngloGold Ashanti Ltd	Materials	3	Anglo American Platinum Ltd	Materials
4	Aspen Pharmacare Holdings Ltd	Health Care	4	Aspen Pharmacare Holdings Ltd	Health Care	4	Aspen Pharmacare Holdings Ltd	Health Care	4	Aspen Pharmacare Holdings Ltd	Health Care	4	AngloGold Ashanti Ltd	Materials
5	Brait SE	Financials	5	Brait SE	Financials	5	BHP Group PLC	Materials	5	BHP Group PLC	Materials	5	Aspen Pharmacare Holdings Ltd	Health Care
6	BHP Group PLC	Materials	6	BHP Group PLC	Materials	6	Bid Corp Ltd	Consumer Staples	6	Bid Corp Ltd	Consumer Staples	6	BHP Group PLC	Materials
7	British American Tobacco PLC	Consumer Staples	7	Bid Corp Ltd	Consumer Staples	7	British American Tobacco PLC	Consumer Staples	7	British American Tobacco PLC	Consumer Staples	7	Bid Corp Ltd	Consumer Staples
8	Bidvest Group Ltd/The	Industrials	8	British American Tobacco PLC	Consumer Staples	8	Bidvest Group Ltd/The	Industrials	8	Bidvest Group Ltd/The	Industrials	8	British American Tobacco PLC	Consumer Staples
9	Capital & Counties Properties PLC	Financials	9	Bidvest Group Ltd/The	Industrials	9	Cie Financiere Richemont SA	Consumer Discretionary	9	Cie Financiere Richemont SA	Consumer Discretionary	9	Bidvest Group Ltd/The	Industrials
10	Cie Financiere Richemont SA	Consumer Discretionary	10	Cie Financiere Richemont SA	Consumer Discretionary	10	Capitec Bank Holdings Ltd	Financials	10	Clicks Group Ltd	Consumer Discretionary	10	Cie Financiere Richemont SA	Consumer Discretionary
11	Capitec Bank Holdings Ltd	Financials	11	Discovery Ltd	Financials	11	Discovery Ltd	Financials	11	Capitec Bank Holdings Ltd	Financials	11	Clicks Group Ltd	Consumer Discretionary
12	Discovery Ltd	Financials	12	Fortress REIT Ltd	Financials	12	Fortress REIT Ltd	Financials	12	Discovery Ltd	Financials	12	Capitec Bank Holdings Ltd	Financials
13	Fortress REIT Ltd	Financials	13	Fortress REIT Ltd	Financials	13	Fortress REIT Ltd	Financials	13	FirstRand Ltd	Financials	13	Discovery Ltd	Financials
14	Fortress REIT Ltd	Financials	14	FirstRand Ltd	Financials	14	FirstRand Ltd	Financials	14	Growthpoint Properties Ltd	Financials	14	FirstRand Ltd	Financials
15	FirstRand Ltd	Financials	15	Gold Fields Ltd	Materials	15	Gold Fields Ltd	Materials	15	Investec Ltd	Financials	15	Gold Fields Ltd	Materials
16	Growthpoint Properties Ltd	Financials	16	Growthpoint Properties Ltd	Financials	16	Growthpoint Properties Ltd	Financials	16	Investec PLC	Financials	16	Growthpoint Properties Ltd	Financials
17	Investec Ltd	Financials	17	Impala Platinum Holdings Ltd	Materials	17	Investec Ltd	Financials	17	Life Healthcare Group Holdings Ltd	Health Care	17	Impala Platinum Holdings Ltd	Materials
18	Investec PLC	Financials	18	Investec Ltd	Financials	18	Investec PLC	Financials	18	Mondi Ltd	Materials	18	Investec Ltd	Financials
19	Intu Properties PLC	Financials	19	Investec PLC	Financials	19	Intu Properties PLC	Financials	19	Mondi PLC	Materials	19	Investec PLC	Financials
20	Mediclinic International RF Pty Ltd	Health Care	20	Intu Properties PLC	Financials	20	Life Healthcare Group Holdings Ltd	Health Care	20	Mr Price Group Ltd	Consumer Discretionary	20	MultiChoice Group	Consumer Discretionary
21	Mondi Ltd	Materials	21	Life Healthcare Group Holdings Ltd	Health Care	21	Mediclinic International PLC	Health Care	21	MTN Group Ltd	Consumer Discretionary	21	Mondi PLC	Materials
22	Mondi PLC (Euros)	Materials	22	Mediclinic International PLC	Health Care	22	Mondi Ltd	Materials	22	Nedbank Group Ltd	Financials	22	Mr Price Group Ltd	Consumer Discretionary
23	Mr Price Group Ltd	Consumer Discretionary	23	Mondi Ltd	Materials	23	Mondi PLC	Materials	23	Naspers Ltd	Consumer Discretionary	23	MTN Group Ltd	Consumer Discretionary
24	MTN Group Ltd	Consumer Discretionary	24	Mondi PLC (Euros)	Materials	24	Mr Price Group Ltd	Consumer Discretionary	24	NEPI Rockcastle PLC	Financials	24	Nedbank Group Ltd	Financials
25	Nedbank Group Ltd	Financials	25	Mr Price Group Ltd	Consumer Discretionary	25	MTN Group Ltd	Consumer Discretionary	25	Netcare Ltd	Health Care	25	Naspers Ltd	Consumer Discretionary
26	Naspers Ltd	Consumer Discretionary	26	MTN Group Ltd	Consumer Discretionary	26	Nedbank Group Ltd	Financials	26	Old Mutual Ltd	Financials	26	NEPI Rockcastle PLC	Financials
27	Netcare Ltd	Health Care	27	Nedbank Group Ltd	Financials	27	Naspers Ltd	Consumer Discretionary	27	PSG Group Ltd	Financials	27	Old Mutual Ltd	Financials
28	Om Residual UK Ltd	Financials	28	Naspers Ltd in $M	Consumer Discretionary	28	NEPI Rockcastle PLC	Financials	28	Redefine Properties Ltd	Financials	28	Prosus NV	Consumer Discretionary
29	PSG Group Ltd	Financials	29	Netcare Ltd	Health Care	29	Om Residual UK Ltd	Financials	29	Remgro Ltd	Financials	29	Redefine Properties Ltd	Financials
30	Redefine Properties Ltd	Financials	30	Om Residual UK Ltd	Financials	30	Redefine Properties Ltd	Financials	30	RMB Holdings Ltd	Financials	30	Remgro Ltd	Financials
31	Reinet Investments SCA	Financials	31	Redefine Properties Ltd	Financials	31	Remgro Ltd	Financials	31	Reinet Investments SCA	Financials	31	RMB Holdings Ltd	Financials
32	Remgro Ltd	Financials	32	Reinet Investments SCA	Financials	32	Resilient REIT Ltd	Financials	32	Sappi Ltd	Materials	32	Standard Bank Group Ltd	Financials
33	RMB Holdings Ltd	Financials	33	Remgro Ltd	Financials	33	RMB Holdings Ltd	Financials	33	Standard Bank Group Ltd	Financials	33	Shoprite Holdings Ltd	Consumer Staples
34	Rand Merchant Investment Holdings Ltd	Financials	34	RMB Holdings Ltd	Financials	34	Reinet Investments SCA	Financials	34	Shoprite Holdings Ltd	Consumer staples	34	Sanlam Ltd	Financials
35	Abi Sab Group Holding Ltd	Consumer staples	35	Sappi Ltd	Materials	35	Sappi Ltd	Materials	35	Sanlam Ltd	Financials	35	Sasol Ltd	Energy
36	Standard Bank Group Ltd	Financials	36	Standard Bank Group Ltd	Financials	36	Standard Bank Group Ltd	Financials	36	Sasol Ltd	Energy	36	SPAR Group Ltd/The	Consumer Staples
37	Shoprite Holdings Ltd	Consumer Staples	37	Shoprite Holdings Ltd	Consumer Staples	37	Shoprite Holdings Ltd	Consumer Staples	37	SPAR Group Ltd/The	Consumer staples	37	Sibanye Stillwater Ltd	Materials
38	Sanlam Ltd	Financials	38	Sanlam Ltd	Financials	38	Sanlam Ltd	Financials	38	Tiger Brands Ltd	Consumer staples	38	Tiger Brands Ltd	Consumer Staples
39	Steinhoff International Holdings NV	Consumer Discretionary	39	Steinhoff International Holdings NV	Consumer Discretionary	39	Steinhoff International Holdings NV	Consumer Discretionary	39	Foschini Group Ltd/The	Consumer Discretionary	39	Foschini Group Ltd/The	Consumer Discretionary
40	Sasol Ltd	Energy	40	Sasol Ltd	Energy	40	Sasol Ltd	Energy	40	Truworths International Ltd	Consumer Discretionary	40	Vodacom Group Ltd	Telecommunications

5.3 Descriptive Statistics

Table 5.2: Industry Annual Distribution

Industry annual distribution was calculated using Microsoft Excel. The number of companies in the relevant industry was divided by 40, thus representing the JSE Top 40 companies. The industry annual distribution was calculated as a percentage of the total JSE Top 40 companies.

Industry Annual Distribution					
Industry	**2015**	**2016**	**2017**	**2018**	**2019**
Consumer Discretionary	13%	13%	11%	12%	18%
Consumer Staples	8%	6%	9%	12%	15%
Energy	3%	3%	3%	3%	3%
Financials	55%	56%	49%	45%	44%
Health Care	8%	6%	9%	6%	3%
Industrials	3%	3%	3%	3%	3%
Materials	13%	13%	17%	19%	12%
Telecommunications					3%
Grand Total	**100%**	**100%**	**100%**	**100%**	**100%**

Given the understanding of the population, the above sample was based on the Top 40 JSE-listed companies between 2015 and 2020. The above table indicates that, on average, 44% to 55% of the Top 40 companies are from the dominant Financials Industry in the period under review. This is expected, since South Africa has in the last decade largely become a service-based economy. Other dominating industries include the Consumer Discretionary Industry and the Materials Industry.

Table 5.3: Industry Female Percentage

Industry female percentage was calculated using Microsoft Excel. This represents female board representation per industry. The average number of female directors per board of the JSE Top 40 companies was calculated per industry.

Industry Female Percentage					
Industry	**2015**	**2016**	**2017**	**2018**	**2019**
Consumer Discretionary	14%	13%	12%	22%	27%
Consumer Staples	17%	14%	18%	21%	27%
Energy	23%	23%	27%	33%	33%
Financials	16%	19%	22%	23%	25%
Health Care	21%	32%	27%	30%	30%
Industrials	28%	28%	46%	47%	38%
Materials	22%	26%	23%	23%	37%
Telecommunications					17%
Growth rate p.a	**17%**	**20%**	**22%**	**25%**	**27%**

The above table indicates that the percentage growth rate of women directors serving on the boards of the JSE Top 40 listed companies has been growing from 2015 to 2019, at a rate of between 17% and 27%.

A trend of improvement is noted in the industry female percentage, except for the Industrials Industry. Since 2017, on average, all industries, except for the Telecommunication Industry, show female board representation as above 20%.

The Consumer Discretionary Industry experienced a decline in the percentage female board representation in 2017; however, an improvement in the industry female percentage has been noted.

The Consumer Staples Industry experienced a decrease in industry female percentage, but improved notably in the years following.

The Energy and the Financials Industry are the only two industries showing an increasing trend in industry female percentage across the period.

The Health-care Industry noted a sharp increase in 2016 as did the Industrials Industry between 2017 and 2018. The Materials Industry showed a notable improvement in 2019.

Table 5.4: Average board size

Average Board Size					
Industry	**2015**	**2016**	**2017**	**2018**	**2019**
Consumer Discretionary	16	14	15	13	15
Consumer Staples	16	12	13	11	11
Energy	13	13	15	15	15
Financials	14	14	13	13	14
Health Care	13	11	11	10	10
Industrials	18	13	13	15	13
Materials	11	12	11	11	12
Telecommunications	0	0	0	0	12
Grand Total	**13**	**11**	**11**	**11**	**13**

The overall average board size from 2015 to 2019 ranged from 11 to 13 board members. The highest number of board members was noted in the industrials industry, this was one company, the Bidvest Group.

Table 5.4: Industry Annual Share Price Growth

Industry annual share-price growth was calculated using Microsoft Excel. The average annual share-price growth in the relevant industry was calculated using the AVERAGE function in Microsoft Excel.

Industry Annual Share Price Growth					
Industry	**2015**	**2016**	**2017**	**2018**	**2019**
Consumer Discretionary	23.7%	-14.4%	11.2%	-15.8%	-16.5%
Consumer Staples	39.1%	-6.5%	13.1%	-33.9%	4.0%
Energy	-2.7%	-4.9%	7.3%	-0.7%	-28.6%
Financials	17.0%	-2.5%	33.6%	-8.3%	8.1%
Health Care	-15.1%	-8.1%	-7.7%	-47.2%	-11.6%
Industrials	8.0%	-44.8%	20.3%	-5.2%	-1.0%
Materials	-11.8%	13.3%	12.0%	10.3%	23.3%
Telecommunications					-12.7%
Grand Total	**14.9%**	**-5.2%**	**16.5%**	**-13.5%**	**-2.4%**

The annual share-price growth has been erratic over the period of the study, however, the period from 2015 to 2017 displays on average positive annual share-price growth.

The Consumer Discretionary Industry only noted share-price growth improvements in 2015 and 2017.

The Consumer Staples Industry noted annual share-price improvements in 2015, 2017 and 2019.

The Energy sector displayed positive annual share-price growth only in 2017 and suffered a significant decline in 2019.

The financials industry showed an improvement in annual share-price growth every alternate year, but the most evident growth was witnessed in 2017.

The health care industry declined over the entire period, with the most notable decline in 2018.

The Industrials Industry has also been largely inconsistent, with the most significant decline noted in 2016.

The Materials Industry has been the only industry in the sample displaying positive annual share-price growth from 2016 onwards. The Telecommunications Industry, a newcomer to the population, experienced a decline of 12.7% in 2019.

Table 5.5: Industry Annual Revenue Growth

Industry annual revenue growth was calculated using Microsoft Excel. The average annual revenue growth in the relevant industry was calculated using the AVERAGE function in Microsoft Excel.

Industry Annual Revenue Growth					
Industry	**2015**	**2016**	**2017**	**2018**	**2019**
Consumer Discretionary	-53.0%	14.1%	-12.0%	5.9%	9.3%
Consumer Staples	7.5%	13.7%	-3.1%	4.4%	6.6%
Energy	-8.6%	-6.7%	-0.3%	5.3%	12.2%
Financials	3.9%	55.4%	38.1%	13.0%	8.8%
Health Care	14.5%	5.1%	19.7%	-0.3%	1.5%
Industrials	-56.7%	-23.0%	4.0%	8.4%	0.2%
Materials	-9.6%	-17.9%	13.5%	12.2%	4.7%
Telecommunications					4.3%
Grand Total	**0.3%**	**50.4%**	**35.7%**	**12.0%**	**8.5%**

The table above indicates that the overall annual revenue growth for the Top 40 JSE-listed companies was positive between 2015 and 2019. The sector displaying the most consistent positive growth, was the Financials sector. Other sectors showed notable improvements in annual revenue growth from 2017 onwards.

5.4 Statistical analysis

The Mann-Whitney U Test was applied to test for differences of female directorships, on the financial performance of the Top 40 JSE-listed companies. This test applies to two independent samples, one group containing those companies with 20% or more female directors and the other group containing those companies with less than 20% female directors.

Observations of outliers were noted, but given that the Mann-Whitney test is a non-parametric test, there was no requirement to remove these outliers from the respective samples.

The descriptors in the statistical test are the following:

Independent variable	
More than 20% female directors	1
Less than 20% female directors	2

5.4.1 Hypotheses 1:

H0: JSE-listed Top 40 Company boards with 20% or more female directors annual share-price growth is no different than Top 40 JSE-listed Company boards with less than 20% female directors.

H1: JSE-listed Top 40 Company boards with 20% or more female directors annual share-price growth is different to Top 40 JSE-listed Company boards with less than 20% female directors.

Table 5.6: Mann-Whitney U test for variable annual share-price growth

Ranks

	Female Percentage	N	Mean Rank	Sum of Ranks
Annual Share price growth	1	108	102.27	11045.50
	2	92	98.42	9054.50
	Total	200		

Table 5.6.1 Ranks – Annual share-price growth

The mean rank for Top 40 JSE-listed Company boards with 20% or more females, 102.27, indicates that these companies have higher annual share-price growth than those boards with less than 20% female directors.

Test Statistics[a]

	Annual Share price growth
Mann-Whitney U	4776.500
Wilcoxon W	9054.500
Z	-.469
Asymp. Sig. (2-tailed)	.639

a. Grouping Variable: Female Percentage

Table 5.6.2 Test statistics – annual share-price growth

The test statistics shows that the p-value of the two-tailed test is 0.639, which is greater than 0.05. This means that H0 cannot be rejected and the researcher concludes that there is insufficient statistical evidence to conclude that there is a significant difference in the annual share-price growth between companies with more than, or less than 20% female directors serving on the board.

Conclusion on Hypothesis 1

There is no difference in annual share-price growth between boards of the JSE Top 40 companies where there are at least 20% female directors or less than 20% female directors.

The findings of this study are in line with the findings of Mans-Kemp & Viviers (2015). The findings contained in chapter 2 which contradict the findings of this study include the studies of Gyapong et al. (2016), Tersjen et al. (2016), Conyon & He, (2017), Compton et al. (2019) and Chijoke-Mgbame et al. (2020).

5.4.2 Hypotheses 2:

H0: JSE-listed Top 40 company boards with 20% or more female directors annual revenue growth is no different from Top 40 JSE-listed company boards with less than 20% female directors.

H1: JSE-listed Top 40 Company boards with 20% or more female directors annual revenue growth is different from Top 40 JSE-listed Company boards with less than 20% female directors.

Table 5.7: Mann-Whitney U test for variable annual revenue growth

Ranks

	Female Percentage	N	Mean Rank	Sum of Ranks
Annual Revenue Growth	1	108	88.56	9564.00
	2	92	114.52	10536.00
	Total	200		

Table 5.7.1 Ranks – annual revenue growth

The mean rank for Top 40 JSE-listed company boards with 20% or more females, 88.56, indicates that these companies have lower annual revenue growth than those boards with less than 20% female directors.

Test Statistics[a]

	Annual Revenue Growth
Mann-Whitney U	3678.000
Wilcoxon W	9564.000
Z	-3.162
Asymp. Sig. (2-tailed)	.002

a. Grouping Variable: Female Percentage

Table 5.7.2 Test statistics – annual revenue growth

The test statistics shows that the p-value of the two-tailed test is 0.002, which is less than 0.05, which means that the researcher can reject H0 and conclude that a statistical significant difference is noted between annual revenue growth and JSE Top 40 Company boards with more than 20% females.

Conclusion on Hypotheses 2

JSE Top 40 companies boards with 20% or more female directors have different annual revenue growth from JSE Top 40 company boards with less than 20% female directors.

As indicated in chapter 2, few studies examined the impact of revenue and its relationship to female board directors. The researcher's findings of this study are in line with the existing literature encountered by the researcher. The findings contained in chapter 2 which align with the findings of this study include the study of Adusei et al. (2017).

5.4.3 Hypotheses 3:

H0: JSE-listed Top 40 Company boards with 20% or more female directors return on

equity is no different than Top 40 JSE-listed Company boards with less than 20% female directors.

H1: JSE-listed Top 40 Company boards with 20% or more female directors return on equity is different to Top 40 JSE-listed Company boards with less than 20% female directors.

Table 5.8: Mann-Whitney U test for variable return on equity

Ranks

	Female Percentage	N	Mean Rank	Sum of Ranks
ROE	1	108	103.29	11155.50
	2	92	97.22	8944.50
	Total	200		

Table 5.8.1 Ranks – return on equity

The mean rank for Top 40 JSE-listed Company boards with 20% or more females, 103.29, indicates that these companies have return on equity than those boards with less than 20% female directors.

Test Statistics[a]

	ROE
Mann-Whitney U	4666.500
Wilcoxon W	8944.500
Z	-.739
Asymp. Sig. (2-tailed)	.460

a. Grouping Variable: Female Percentage

Table 5.8.2 Test statistics – return on equity

Table 5.8.2 shows that the p-value of the two-tailed test 0.460, which is also greater than 0.05, which means that the researcher cannot reject H0 and conclude that no difference is noted on return on equity where more than 20% or more females serve on the boards of a Top 40 JSE-listed company. The difference is not statistically significant.

Conclusion on Hypothesis 3

There is no difference in return on equity between boards of the JSE Top 40 companies where there are at least 20% female directors or less than 20% female directors.

The statistical test results from Mans-Kemp & Viviers (2015) reveal that no significant relationship between board diversity and return on assets and return on equity was noted. The findings of the study of Mans-Kemp & Viviers (2015) for this measure, align with the findings of this study.

Table 5.9: P-values by all the values of female directorship

Dependent Variable	P- Value
Annual share price growth	0.639
Annual revenue growth	0.002
Return on Equity	0.460

Table 5.9 shows that female directors on the boards of JSE Top 40 listed companies between 2015 and 2019 had the greatest impact on the annual revenue growth variable as opposed to the other two variables, return on equity and annual share-price growth thus proving that a statistically significant relationship exists.

5.5 Tests for validity and reliability

The data relating to listing of Top 40 JSE companies and annual share price was obtained from Bloomberg and Timbukone. These are credible sources of financial information. Data relating to annual revenue and board composition, was obtained directly from the JSE Top 40 company websites, specifically, the annual integrated reports. Data relating to return on equity was obtained from Marketline and Timbukone. The data relating to each variable was cross-checked through comparison of the data from different databases.

In the study conducted by Brahma et al., (2020) Bloomberg was used as a data source for the collection of data regarding board composition. Similarly, in the study conducted by Chijoke-Mgbame et al., (2020) collected its financial data from Bloomberg as well as the respective companies' annual reports. The data used in this study has been obtained from valid and reliable sources providing face validity and reliability.

Formative constructs are those constructs which are formed by indicators Roberts & Thatcher (2009) and describe the construct (Petter, Straub, & Rai, 2007). The financial performance construct in this study is defined by annual share price growth, annual revenue growth and return on equity. All being indicators.

Measuring the validity and reliability of a formative measure is not appropriate in this study. Thus the validity of the financial performance construct has been validated through theoretical reasoning Petter et al., (2007) through comparison to other literature in the field. Also, the researcher has not applied Cronbach's Q to determine reliability in this study as "internal consistency or reliability is unimportant because measures are examining different facets of the construct" (Petter et al., 2007).

5.6 Chapter Summary

Most of the companies in the Top 40 of the JSE are financial services with only one, the telecommunication company, in the Top 40 in 2019. The women on the boards of the Top 40 JSE companies increased every year between 2015 and 2019. Overall, the share-price

growth increased only in 2015 and 2017 and declined in the other years. Overall, the annual revenue growth only increased in 2015 and 2019.

The most significant finding from this chapter is the outcome of the Mann-Whitney U test for annual revenue growth, which indicated that JSE Top 40 company boards with 20% or more female directors have a different annual revenue growth from the JSE Top 40 companies boards with less than 20% female directors.

Chapter 6: Discussion of results

6.1 Overview

In chapter 1, the researcher indicated that the research objective was to determine whether 20% or more female directors on boards of Top 40 JSE-listed companies impact financial performance. An additional objective was to determine whether the mechanism of gender policy disclosure implemented by the JSE, has influenced the representation of women directors on the boards of the JSE Top 40 companies.

This chapter will focus on the findings of this study, per hypotheses tested. The findings of these tests will be discussed and compared to other studies covered in Chapter 2. Also, the researcher will highlight the implications of these findings and identify any reasons for differences in views between this study and other studies covered in Chapter 2.

6.2 Results of descriptive statistics

The descriptive statistics reveal that 20% or more female directors have no impact on annual share-price growth and return on equity, but that a significant statistical difference is noted with annual revenue growth and female directors. The p-values on the annual revenue growth, 0.002, in comparison with the p-values on annual share-price growth, 0.639, and return on equity, 0.460, indicate that the most impact of female directors is on annual revenue growth.

The results of this study add to the mixed views in this research field of whether female directorships do have an impact on the financial performance of companies – especially when a female directorship threshold has been breached. Various descriptive statistics noted in the literature covered in chapter 2 lead to differences in the outcomes of the various studies which will further be discussed per hypothesis.

6.2.1 Hypothesis 1:

H0: JSE-listed Top 40 Company boards with 20% or more female directors annual share-price growth is no different than Top 40 JSE-listed Company boards with less than 20% female directors.

H1: JSE-listed Top 40 Company boards with 20% or more female directors annual share-price growth is different to Top 40 JSE-listed Company boards with less than 20% female directors.

The statistical tests reveal that female director have no difference in annual share-price growth between JSE Top 40 companies with more than 20% female directors or less than 20% female directors. In the comparison of findings between literature and this study, the researcher has taken the view of annual share-price growth as a market measure, aligning this to another well-explored measure, Tobin's Q.

Studies aligning in support of this study's findings

The results of the study align with the results noted in the study by Post & Byron (2015). The meta-analysis conducted by Post & Byron (2015) reveal that there is no relationship between female board representation and market performance. Market performance in this study was measured by Tobin's Q, stock performance and shareholder returns (Post & Byron, 2015). Stock performance and annual share-price growth are the measures of financial performance which the researcher has compared in this study as well as the findings of the findings of Post & Byron (2015). However, Post & Byron (2015) analysed the impact of female directors on market performance by grouping these three dependent variables, Tobin's Q, stock performance and shareholder returns.

The study conducted by Marinova et al. (2016), like Gyapong et al. (2016), defined firm performance using Tobin's Q. The findings of Marinova et al. (2016) align with the findings of this study. Given the significance of the financial industry in terms of descriptive

statistics on the Top 40 JSE-listed companies, it would be expected that the exclusion of banks and insurance companies as in the population in the study of Marinova et al. (2016) would contribute to reasons for differences in the studies, however, the findings still align to the findings of this study.

Somewhat aligning with the findings of the present study is the study conducted by Papangkorn et al. (2019), which concluded that there is a negative correlation between females serving as directors on boards and Tobin's Q. However, the correlation has been noted as not statistically significant (Papangkorn et al. (2019).

Studies contrasting with the findings of this study

In contrast to this study's findings, the study by Gyapong et al. (2016) concluded that if two or more women are present on the board of a company, gender diversity has the greatest impact on firm performance. Firm performance as defined by Gyapong et al. (2016) was measured by Tobin's Q.

Further contrasting the findings of the present study, are the findings of Tersjen et al. (2016) that concluded that a positive relationship exists between the percentage of female directors and Tobin's Q. Adding to this view is the study by Conyon & He (2017) who also concluded that the representation of females on corporate boards have a positive and statistically significant relationship with Tobin's Q. The study by Conyon & He (2017) offered a perspective from a developing country.

In the hypotheses tested by Compton et al. (2019) relating to financial performance before and after the appointment of women directors to the board, the findings reveal that, on boards where women directors are present, the value of the firm improves by 5.7% of assets. Once again, the study Compton et al. (2019) contrasts with the views of the study at hand.

In the study conducted by Brahma et al. (2020), the independent variables in relation to diversity were grouped according to three categories, diversity 1, diversity 2 and diversity 3. Diversity 1 denotes, one female board member, diversity 2, two female board members and diversity 3, three female board members (Brahma et al. (2020). It is important to note these different categories as Tobin's Q was measured in relation to these groups. The findings of the study of Brahma et al. (2020) reveal that where three or more female directors serve on the board of a company, this leads to a significant increase in firm performance. Once again, the study by Brahma et al. (2020) contrasts the findings of the study at hand.

Another contrasting finding to the present study is the study by Chijoke-Mgbame et al. (2020) that found that female board representation has a positive and statistically significant relationship with Tobin's Q.

Overall, the literature in relation to Hypothesis 1, offers mixed findings which is consistent with the views expressed by the researcher in chapter 2.

In terms of the research question where financial performance is denoted by annual share-price growth, no difference is noted in annual share-price growth where 20% or more female directors are on the board of a Top 40 JSE-listed Company.

6.2.2 Hypothesis 2:

H0: JSE-listed Top 40 Company boards with 20% or more female directors annual revenue growth is no different than Top 40 JSE-listed Company boards with less than 20% female directors.

H1: JSE-listed Top 40 Company boards with 20% or more female directors annual

revenue growth is different from Top 40 JSE-listed Company boards with less than 20% female directors.

As indicated in chapter 2, few studies investigated the impact of revenue and its relationship to the presence of female board directors. Given the views in the literature regarding the measuring of financial performance from both and accounting and market-based perspective, annual revenue growth in this study offered a different accounting-based measure.

The results of this hypothesis indicated that JSE Top 40 companies boards with 20% or more female directors have different annual revenue growth from JSE Top 40 companies boards with less than 20% female directors.

Studies in support of the findings of this study

The few studies that considered an element of the impact of female directors on financial performance, include the studies by Adusei et al. (2017) and Hoobler et al. (2017). In the study by Adusei et al. (2017), the accounting measure including revenue as a variable was the variable denoted by OSS – "operational self-sufficiency, defined as portfolio revenues divided by operational expenses". The findings of gender diversity in relation to the financial performance noted by Adusei et al. (2017) reveal a positive but statistically insignificant relationship with OSS.,

Hoobler et al. (2017) analysed female leadership in relation to sales and found that, female leadership does impact sales. This aligns with the findings of the present study which found that annual revenue growth is impacted by JSE Top 40 companies' boards with female directors in excess of 20%.

In terms of the research question where financial performance is denoted by annual revenue growth, a difference is noted in annual revenue growth where 20% or more

female directors are on the board of a Top 40 JSE-listed company.

6.2.3 Hypotheses 3:

H0: JSE-listed Top 40 Company boards with 20% or more female directors return on equity is no different than Top 40 JSE-listed Company boards with less than 20% female directors.

H1: JSE-listed Top 40 Company boards with 20% or more female directors return on equity is different to Top 40 JSE-listed Company boards with less than 20% female directors.

In chapter 2, the researcher highlighted the use of both accounting-based measures and market-based measures to measure the impact of female directors on financial performance. This hypothesis denotes financial performance measured by an accounting-based measure. There is no difference in return on equity between boards of the JSE Top 40 companies where there are at least 20% female directors or less than 20% female directors.

Studies in support of the findings of this study

The study by Mans-Kemp & Viviers (2015), provided a South African context to the analysis of the impact of the presence of women directors on financial performance. As stated in chapter 2, financial performance was tested using both accounting-based and market-based measures which included return on assets, return on equity, earnings per share, total shareholders return, market-value added, dividend yield and net profit margin (Mans-Kemp & Viviers, 2015). The statistical test results from Mans-Kemp & Viviers (2015) reveal that no significant relationship between board diversity and return on assets and return on equity was noted. The findings of the study of Mans-Kemp & Viviers (2015) for this measure, align with the findings of this study.

Another study which analysed the impact of financial performance through the analysis of board gender on return on equity was that of Usman (2018), which concluded that board gender is negatively and insignificantly related to return on equity. Thus, increase female representation on the boards of the sample companies, has little impact on the financial performance of these companies (Usman, 2018). In a more recent study, Manyaga et al. (2020), concluded that board gender diversity has a significant but negative influence on return on equity as a performance measure.

Studies contrasting the findings of this study

As indicated above, many studies in this field of research categorised financial performance in terms of accounting-based measures and market-based measures with Post & Byron (2015) concluding in their study that corporate boards with female directors have higher accounting returns. Building on and supporting the findings of Post & Byron (2015), Martin-Ugedo et al. (2018) in their study analysed financial performance in terms of two measures, return on assets and return on equity, concluded that where organisations are managed by women, these organisations show higher accounting returns (Martin-Ugedo et al., 2018). This is in contrast to the findings of the present study.

6.3 Theoretical findings

The present study chose to analyse the presence female directors and its relationship to the financial performance of companies through the theoretical lenses of the upper--echelon theory and the critical-mass theory. As the statistical results reveal that no impact on annual share-price growth and return on equity has been found, this disproves the theory for one element, i.e. the presence of women at managerial level. The upper-echelon theory states that “organisational outcomes, strategic choices and performance levels are predicted by managerial background characteristics” (Hambrick & Mason, 1984). Thus performance levels are not different with respect to the dependent variables,

annual share-price growth and return on equity.

Furthermore, the findings of this study do not disprove the critical-mass theory as the threshold is too low to measure a meaningful impact.

However, a statistically significant relationship is noted for the one dependent variable – annual revenue growth. This thus proves the upper- echelon and critical mass theories in line with (Kanter, 1977) and (Hambrick & Mason, 1984).

6.4 Reasons for differences

The researcher will elaborate on the differences in the findings of this study in comparison to the studies and literature covered in chapter 2.

6.4.1. Hypothesis 1: Annual share-price growth

The findings of this study are in line with the findings of Mans-Kemp & Viviers (2015). The findings contained in chapter 2 which contradict the findings of this study include the studies of Gyapong et al. (2016), Tersjen et al. (2016), Conyon & He (2017), Compton et al. (2019) and Chijoke-Mgbame et al. (2020). The researcher will unpack the literature to determine the reasons for differences between the findings of this study and other studies.

Firstly, one of the main reasons for the differences in this study from other studies, is the sample being analysed. This study specifically focused on the JSE Top 40 listed companies. The study of Mans-Kemp & Viviers (2015) focused on all of the JSE Top 40 companies with specific inclusion criteria. These criteria included the following: the exclusion of the oil and gas, basic materials and financials industries as Mans-Kemp & Viviers (2015) argue that the disclosure of these companies' financial statements differ materially from other industries. To meet the listing requirement for the Mans-Kemp &

Viviers (2015) study, the researchers considered both the FTSE global classification system and the industry classification benchmark. Further criteria stipulated the inclusion of those companies in the sample population in the year that these companies were delisted.

Although the findings regarding the impact of the presence of female directors on boards on the return on equity is consistent with the findings in this study, the findings of the study by Mans-Kemp & Viviers (2015) could have been different had the financial industries industry been included. As shown in the table below, the financials industry accounts for between 44% and 55% of the industry annual distribution as indicated in **Table 5.2.**

Given the findings of hypothesis 1 in relation to the study by Gyapong et al. (2016), the reasons for differing with the Gyapong study are:

Firstly, the dataset was hand-collected. The data in this study were obtained from reputable sources such as Bloomberg, Timbukone and Marketline. Furthermore, the dataset of Gyapong et al. (2016) included all firms listed on the JSE Stock exchange and not only the Top 40 companies as outlined in this study.

The second difference in views is the time horizon. This study analysed financial performance over five years, between 2015 and 2019, whereas Gyapong et al. (2016) analysed financial performance over a period of six years between 2008 and 2013. Though, unlike Mans-Kemp & Viviers, (2015), there were no specific exclusions of industries from the dataset of Gyapong et al. (2016).

The reasons for differences between the findings of this study and the study by Tersjen et al. (2016) can be traced back to the respective datasets. The dataset analysed by Tersjen et al. included 3 876 listed companies from 47 countries in 2010. Firstly, this study is country specific – it focuses on South Africa's top-performing listed entities. Secondly, the number of observations is far higher and the observations only relate to one year, 2010.

The contrasting findings of Conyon & He (2017) are also influenced by the difference in the dataset analysed. Conyon & He, analysed 3 000 US publicly-listed firms between 2007 and 2014. Once again, although the firms are listed as in the Conyon & He, study, the differences are due to the observations regarding firms and the time horizon of the study. Interestingly, Conyan & He study's time horizon included the impact of the global financial crisis.

As highlighted earlier, the study by Compton et al. (2019) contrasted the findings of the present study with respect to annual share-price growth hypotheses. One of key differences is the locational differences that were included in the study by Compton et al. (2019). This study does not include the impact of locational differences. The time horizon of the study is also longer than this study. The study by Brahma et al. (2020) like all the above studies, was conducted over a longer period, twelve years In this case.

A key reason for differences in the findings between this study and Chijoke-Mgbame et al. (2020) is the exclusion of financial firms which on the basis of the regulation of these firms. As highlighted in the table above, the financials industry has consistently been the most dominating industry in the Top 40 companies listed on the JSE for the past five years.

6.4.2 Hypothesis 2: Annual revenue growth

The researcher's findings of this study are in line with the existing literature encountered by the researcher. The findings contained in chapter 2 which align with the findings of this study includes the study of Adusei et al. (2017). The researcher has unpacked the literature to determine the reasons for alignment between the findings of this study and other studies.

This study, as mentioned before, included all industries of the Top 40 JSE-listed companies. In comparison, the study by Adusei et al. focused on micro-finance institutions

specifically. In addition, the study also covered 76 countries (Adusei et al. (2017).

A further contributing factor is the threshold used to analyse the impact of female director impact. This study applied the threshold of 20% as opposed to Adusei et al. which applied a threshold of 50%.

6.4.3 Hypothesis 3: Return on equity

To the researcher's knowledge, there are no findings in support of the study at hand. However, the findings referred to in chapter 2 which contradict the findings of this study include the studies of Martin-Ugedo et al. (2018) and Post & Byron, (2015). The researcher has thus unpacked the literature to determine the reasons for differences between the findings of this study and other studies.

The only studies noting different findings in comparison to this study are the studies by Martin-Ugedo et al. (2018) and Post & Byro (2015).

The first reason for difference in the study by Martin-Ugedo et al. (2018) from this study, is the independent variable, CEO GENDER. In this study, the independent variable is denoted by female directors. Furthermore, the study focused on Spanish publishing firms and spanned over one year (2013).

Over the years, the only noted female CEO in South Africa was Maria Ramos (ABSA CEO). Given the significant differences in dataset, time horizon and location, differences in findings are expected.

As mentioned earlier in this study, the study by Post & Byron (2015) included an analysis

of 140 studies. Furthermore, adding to the reasons for differences is the grouping of return on equity as an accounting-based measure with other accounting-based ratios.

6.4.4 Other possible reasons for differences

Position

Possible reasons for no impact noted per the hypotheses tested, is the female directors position to influence the strategic direction of the business. Whilst collecting the data, the researcher noted that up until 2019, Maria Ramos was the only female CEO on the Top 40 JSE-listed companies.

Many female directors noted over the period of 2015 to 2019, served on the board as a non-executive director. It is important to note that non-executive directors are not directly involved in the day-to-day operations of these companies, thus these directors do not have the platform to exert direct influence on the strategic direction of these companies.

The researcher further noted that often the same women serve on multiple boards. Noting the position and the repetition of the same women as non-executive directors on the boards of the Top 40 JSE-listed companies gives rise to the question of whether there are sufficient skilled females to serve as board members on these companies.

Other considerations include the relevance of the glass-ceiling theory and its implications in this field of study. Furthermore, the tenure served by these directors on boards, could also have implication on future research.

Skills

As mentioned in chapter 1 in 2017 women comprised 51% of the total population, however only made up 44.1% of the employed workforce in South Africa (Businesswomen's Association of South Africa, 2017) report. Though women are in abundance in this country it raises the question of whether the female population have the necessary skills to serve on the boards of these top-performing companies.

Over the years, the researcher has noted that the materials industry, specifically the mining companies, introduce more technically skilled females (engineers) as directors on their boards.

Another lens to view the skills element in terms of female directors is whether these females have the necessary industry knowledge to make meaningful contributions to these Top 40 listed companies.

Financial performance

Generally, the term financial performance is subjective and can be noted across the literature in the field of research. Most notably, financial performance has been categorised according to either accounting-based measures or market-based measures.

Depending on the measure used to define the study, various factors may influence the outcome of the measure. For example, annual revenue growth. Revenue, by nature, is different per sector, it could be obtained by the sale of goods or the provision of services. Furthermore, revenue might be influenced by external factors such as exchange rates or commodity pricing exposure depending on the industry a company finds itself in.

Other macro-economic factors influencing revenue, could be the disposable income of the consumer in the target market. Volume effects could also be influenced by population growth driving the number of consumers in a market. The current economic climate in a country could also influence the ability of companies to generate revenue.

These variables relating to just annual revenue, depict the subjective nature of financial performance. It is thus problematic to relate it directly to female directors.

Chapter 7: Conclusion

No further studies on the relationship between female directors and financial performance in South Africa has been conducted since the study by Mans-Kemp & Viviers in 2015. This study offers a more recent view on whether the boards of the Top 40 JSE-listed companies have made strides in increasing female presence on these boards and the impact of their presence on financial performance.

It is important for research to be conducted in this field given the United Nation's focus on addressing gender inequality at a global level. Specifically, the UN Sustainable Development Goal 5: "gender equality and empower all women and girls" aims at addressing this challenge.

Chapter 1 contextualised the contribution of women in South Africa — in 2017 women comprised 51% of the total population, however they only made up 44.1% of the employed workforce in South Africa (Businesswomen's Association of South Africa, 2017) report.

Bearing this in mind, it is notable that the 2017 Census indicated that only 20.7% of directors are women and that women only account for 11.8% of the top leadership level in organisations (Businesswomen's Association of South Africa, 2017) report. Though women are in abundance, women in South Africa are poorly represented on company boards.

From a legislative perspective, the Companies Act of South Africa 2008 makes provisions for company board composition, but is silent on gender demographics with regard to the boards of companies. This speaks to the lack of legislative interventions to address the lack of gender diversity on corporate boards in South Africa.

To reiterate the importance of a board and the directors serving on the board, the Companies Act of South Africa defines the board of directors as those charged with the

management of the business and its affairs and has the authority and powers to perform functions in the company (Republic of South Africa, 2008). Boards thus have a critical role to create value for stakeholders by exercising their powers and management.

To encourage good governance of companies, the King IV Report on Corporate Governance for South Africa (2016) report, aims to improve governance of companies and bridge governance gaps such as the lack of diversity which has not been adequately covered by the companies Act of South Africa.

The King IV Report on Corporate Governance for South Africa (2016) further builds on the Companies Act definition of a board of directors, to include the term “governing bodies”. A Governing Bodiy in terms of King IV Report is the “structure that has the primary accountability of governance and performance of the organisation” (King IV Report on Corporate Governance for South Africa, 2016). Though provisions have been made in the King IV Report on Corporate Governance for South Africa (2016) in terms of board demographics, it is important to note that non-compliance with the King IV Report on Corporate Governance bears no legislative consequences.

This study therefore shows, that positive impact is noted on annual revenue growth where JSE Top 40 companies have boards which comprise 20% or more women. Furthermore, given the introduction of the JSE gender policy disclosure requirements in 2017, an improvement in female board representation has been noted across industries, as shown in Table 5.3.

7.1 The impact of female directors and financial performance

The researcher can conclude that whereas 20% or more women served on boards as directors of JSE Top 40 companies between 2015 to 2019, the only impacte noted is on annual revenue growth. No impact is noted on annual share-price growth, or return on equity.

The introduction of the gender disclosure policy by the JSE since 2017, has seen an increase in Industry Female Percentage as denoted in **Table 5.3**.

The financials industry is single-handedly the most significant industry in the Top 40 companies listed on the JSE as per **Table 5.2.** Thus, the banking regulations implemented in this industry could be considered an influencing factor in terms of female board representation.

The results of this study, add to the mixed views on whether female directors impact firm financial performance. In terms of testing for differences on annual share-price growth where boards have 20% or more females, no difference has been noted per hypotheses 1. In terms of testing for differences on annual revenue growth, where boards have 20% or more females, a significant difference has been noted per hypothesis 2. In terms of testing for differences on return on equity, where boards have 20% or more women members, no difference has been noted per hypothesis 3.

7.2 Implications for management or other stakeholders

Although strides have been made in terms of increasing female board representation on JSE Top 40 listed companies, female board representation of 27% by 2019 is still low.

The implications of this study raise questions as to whether legislative mechanisms should be introduced to increase female representation on boards of companies more aggressively. It will require a deep dive into the benefits of voluntary and involuntary mechanisms to discern whether this is the right approach.

Another area to be investigated, would be the appointment process. Enterprises need to evaluate their appointment process of women as managers and directors, and consider whether these processes are enablers of barriers to female managerial appointment.

Furthermore, it is important to identify whether any biases are present throughout the recruitment or appointment process.

The lack of impact on the dependent variable, share price, flags possible room for stakeholder pressures on these Top 40 companies. Consumers perhaps underestimate the effect of what the pressure exerted on these companies could yield. This also brings attention to the question whether consumers recognise poor representation of women as directors on the JSE Top 40 companies.

7.3 Limitations of the research

The research is limited to the Top 40 South African companies listed on the JSE. There are companies listed on the JSE Alt-X as well, which have been excluded from the study, thus limiting the findings of female board representations and its impact on financial performance. In the sample selected, certain industries were represented by only one company.

The study has been limited to the Top 40 South African companies listed on the JSE to also provide insight as to the whether the gender policy regulations instituted by the JSE have yielded the expected results – increased female representation on boards of companies.

Furthermore, it allowed assessment of the compliance of these companies with regulations such as these. Time limitations have reduced the scope of the study and not allowed for a detailed study on the impact of female directorships on the financial performance of Top 40 JSE-listed companies.

7.4 Suggestions for further research

Given the importance of gender equality on a global level, it would be valuable to extend the research beyond five years, an furthermore, extending the sample size to include all JSE-listed companies.

Other considerations that may be valuable could be deeper investigation into the demographics of the female directors such that a more insightful analysis can be done in terms of female directors' background and experience. Another factor to consider would be the average tenure of female directors serving on a board.

In terms of analysing financial performance, consideration should be given to macro-economic factors and their impact on the market-based or accounting-based measures used to analyse financial performance.

Considering the glass-ceiling theory, another area of further research would be to understand the appointment process of female directors on boards as opposed to its male counterparts. Directorship is often regarded as the most senior level in the organisation and a leadership position, thus having a woman present or not present on the board signifies her career progression (Adams, 2016). This supports the need for further research to understand the appointment process of female directors on the boards of the Top 40 JSE-listed companies.

An alternate lens to understanding the appointment process would be to understand from the present female directors serving on these boards of the JSE Top 40 companies, if they had the prerogative to decide which firm, perhaps based on financial performance, to serve on as a board director. This will provide further insight into the barriers faced by females on their path to female directorship appointment.

Another area of possible research would be to analyse the effect of legislating policies aimed at increasing gender diversity on these boards, as it appears that there are

insufficient nudges by regulatory bodies to address this inequality.

In terms of position – perhaps extending the sample data distinguishing between those female directors who serve in an executive capacity on non-executive capacity, may provide further insight into the understanding of the impact of female directors in the JSE Top 40 companies.

Another factor affecting the impact female directors may have on financial performance would be the tenure served on the board. As mentioned earlier, given the appropriate position and platform to exert influence on the strategic direction the company's financial performance may be positively impacted.

Additionally, analysing whether the same group of women serve as board members on the JSE Top 40 companies also presents an area for future research and could provide insight to the token theory argument in a South African context.

There is an argument that perhaps certain industries require more technically skilled individuals. However, as mentioned in chapter 1, South Africa's population is made up of 51% females as per the (Businesswomen's Association of South Africa, 2017). It would be valuable to further delve into the qualification of the females serving as directors on the Top 40 JSE-listed companies. To gain a deeper understanding of the common qualifications of females serving on these boards and perhaps identify which qualifications are more prevalent in certain industries. Additionally, researchers could explore testing higher percentage thresholds, testing the entire JSE population and extend the testing to cover a period extending from 6 to 10 years.

The term financial performance remains subjective throughout existing literature. To understand the direct company impacts on female directorship, a deeper understanding of the various industries and companies is required. Perhaps studies focusing on specific

industries are warranted given the depth required to understand the operating environment of these organisations.

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9. Appendices

Appendix 1: JSE Top 40 Listed Companies 2019

Table: Author's own

No.	Company	Sector
1	Absa Group Ltd	Financials
2	Anglo American PLC	Materials
3	Anglo American Platinum Ltd	Materials
4	AngloGold Ashanti Ltd	Materials
5	Aspen Pharmacare Holdings L	Health Care
6	BHP Group PLC	Materials
7	Bid Corp Ltd	Consumer Staples
8	British American Tobacco PLC	Consumer Staples
9	Bidvest Group Ltd/The	Industrials
10	Cie Financiere Richemont SA	Consumer Discretionary
11	Clicks Group Ltd	Consumer Discretionary
12	Capitec Bank Holdings Ltd	Financials
13	Discovery Ltd	Financials
14	FirstRand Ltd	Financials
15	Gold Fields Ltd	Materials
16	Growthpoint Properties Ltd	Financials
17	Impala Platinum Holdings Ltd	Materials
18	Investec Ltd	Financials
19	Investec PLC	Financials
20	MultiChoice Group	Consumer Discretionary
21	Mondi PLC	Materials
22	Mr Price Group Ltd	Consumer Discretionary
23	MTN Group Ltd	Consumer Discretionary
24	Nedbank Group Ltd	Financials
25	Naspers Ltd	Consumer Discretionary
26	NEPI Rockcastle PLC	Financials
27	Old Mutual Ltd	Financials
28	Prosus NV	Consumer Discretionary
29	Redefine Properties Ltd	Financials
30	Remgro Ltd	Financials
31	RMB Holdings Ltd	Financials
32	Standard Bank Group Ltd	Financials
33	Shoprite Holdings Ltd	Consumer Staples
34	Sanlam Ltd	Financials
35	Sasol Ltd	Energy
36	SPAR Group Ltd/The	Consumer Staples
37	Sibanye Stillwater Ltd	Materials
38	Tiger Brands Ltd	Consumer Staples
39	Foschini Group Ltd/The	Consumer Discretionary
40	Vodacom Group Ltd	Telecommunications

Appendix 2: Ethical Clearance

MastersResearch2020 <MastersResearch2020@gibs.co.za>
to me

Dear Candice van der Ventel,

Please be advised that your application for Ethical Clearance has been approved.
You are therefore allowed to continue collecting your data.
We wish you everything of the best for the rest of the project.

Ethical Clearance Form

Kind Regards

Appendix 3: Copyright Form

Gordon Institute of Business Science
University of Pretoria

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

22.1 COPYRIGHT DECLARATION FORM

Student details			
Surname:	van der Ventel	Initials:	C
Student number:	19391979		
Email:	19391979@mygibs.co.za		
Phone:	0723998299		
Qualification details			
Degree:	MBA	Year completed:	2020
Title of research:	GIBS		
Supervisor:	Dr Sonja Fourie		
Supervisor email:	sonja@customersciencelab.com; sfourie@tiscali.co.za		

Access

A.	My research is not confidential and may be made available in the GIBS Information Centre and on UPSpace.

I give permission to display my email address on the UPSpace website

Yes	X	No	

B.

	My research is confidential and may NOT be made available in the GIBS Information Centre nor on UPSpace.

Please indicate embargo period requested

Two years		Please attach a letter of motivation to substantiate your request. Without a letter embargo will not be granted.
Permanent		Permission from the Vice-Principal: Research and Postgraduate Studies at UP is required for permanent embargo. Please attach a copy permission letter. Without a letter permanent embargo will not be granted.

Copyright declaration

I hereby declare that I have not used unethical research practices nor gained material dishonesty in this electronic version of my research submitted. Where appropriate, written permission statement(s) were obtained from the owner(s) of third-party copyrighted matter included in my research, allowing distribution as specified below.

I hereby assign, transfer and make over to the University of Pretoria my rights of copyright in the submitted work to the extent that it has not already been affected in terms of the contract I entered into at registration. I understand that all rights with regard to the intellectual property of my research, vest in the University who has the right to reproduce, distribute and/or publish the work in any manner it may deem fit.

Signature: 	Date: 29/11/2020
Supervisor signature: 	Date: 30/11/2020

Appendix 4: Certification of additional support

25. APPENDIX 6 CERTIFICATION OF ADDITIONAL SUPPORT

(Additional support retained or not - to be **completed by all students)**

Please note that failure to comply and report on this honestly will result in disciplinary action

I hereby certify that (please indicate which statement applies):

- ***I DID NOT RECEIVE*** *any additional/outside assistance (i.e. statistical, transcriptional, and/or editorial services) on my research report:*

  .....

- ***I RECEIVED*** *additional/outside assistance (i.e. statistical, transcriptional, and/or editorial services) on my research report*

  Yes

If any additional services were retained– ***please indicate below which:***

☐ ***Statistician***

☐ ***Transcriber***

☒ ***Editor***

☐ ***Other (please specify:……..)***

Please provide the name(s) and contact details of all retained:

NAME: SJJ Van den Berg

EMAIL ADDRESS: sjjvdberg@gmail.com

CONTACT NUMBER: 072 724 2514

TYPE OF SERVICE: Editorial

NAME: .....

EMAIL ADDRESS: .....

CONTACT NUMBER: .....

TYPE OF SERVICE: .....

NAME: .....

EMAIL ADDRESS: .....

CONTACT NUMBER: .....

TYPE OF SERVICE: .....

I hereby declare that all *statistical write-ups and thematic interpretations of the results for* **my study were completed by myself without outside assistance**

NAME OF STUDENT: Candice van der Ventel

.....

SIGNATURE: 

.....

STUDENT NUMBER:

19391979

.....

STUDENT EMAIL ADDRESS:

19391979@mygibs.co.za

.....

Appendix 5: Plagiarism Declaration Form

ANNEXURE B – Declaration of originality

DECLARATION OF ORIGINALITY

UNIVERSITY OF PRETORIA

The Department of ..... places great emphasis upon integrity and ethical conduct in the preparation of all written work submitted for academic evaluation.

Academics teach you about referencing techniques and how to avoid plagiarism; it is your responsibility to act on this knowledge. If you are at any stage uncertain as to what is required, you should speak to your lecturer before any written work is submitted.

You are guilty of plagiarism if you copy something from another author's work (e.g. a book, an article or a website) without acknowledging the source and pass it off as your own. In effect you are stealing something that belongs to someone else. This is not only the case when you copy work word-for-word (verbatim) but also when you submit someone else's work in a slightly altered form (paraphrase) or use a line of argument without acknowledging it.

Students who commit plagiarism will not be given any credit for plagiarised work. The matter may also be referred to the Disciplinary Committee (Students) for a ruling. Plagiarism is regarded as a serious contravention of the University's rules and can lead to expulsion from the University.

The declaration which follows must accompany all written work submitted while you are a student of the Department of ..... No written work will be accepted unless the declaration has been completed and submitted.

Full names and surname of student: Candice van der Ventel

Student number: 19391979

Topic of work: Female directorships and its relationship to the financial performance of the Top 40 JSE Listed companies

Declaration

1. I understand what plagiarism is and am aware of the University's policy in this regard.

2. I declare that this Research Project (e.g. essay, report, project, assignment, dissertation, thesis, etc) is my own original work. Where other people's work has been used (either from a printed source, Internet or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.

SIGNATURE

30/11/2020

DATE