Gordon Institute of Business Science
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The impact of board nationality, gender and race diversity on company performance.

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Abstract

Controversy lingers in academic circles surrounding the merit that diversity brings to an organisation's board directorate construct, particularly the influence it has on firm performance. Director fiduciary responsibilities prescribe the provision of direction and governance, representative of and accountable to, company shareholders and its stakeholders. The question then avails itself, "if the extent of board diversity, in respect to human and social capital, facilitates enriched decision-making through varied experience and backgrounds to proficiently serve their constituency, and if positive, have organisations reaped the improved benefits owing to the positive effect expected of diversity through desegregation?"

This research report was conducted with the intention of understanding the effects of board composition diversity on company performance. The research commenced with a robust interrogation of literature exemplifying diversity, in particular, that of board diversity and its impact on company performance. A quantitative methodology was employed in the evaluation of company performance relative to the level of diversity of the board. The ratios, Return on Assets (ROA), Return on Equity (ROE) and Tobin's q, were employed to assess both financial and market performance across 130 companies listed on the Johannesburg Stock Exchange, for the 2014 financial year. The attributes of diversity in this analysis embodied nationality, gender and race.

The findings show that board diversity has an impact on company performance and that the full benefits thereof have not yet been realised. Diversity is an enabler of company performance yet the status quo of homogenous board directorates is evident in the minimal female representation on company's boards within South Africa, demonstrating the slow adoption of change. Quotas imposed upon companies impede the benefits of diversity as in certain instances, this is seen as window dressing and is not embraced in the spirit in which it was intended. This paper, however, does not paint a picture of doom and gloom but instead shows diversity as being positive and encourages the early adoption thereof, specifically within a South African context.

Keywords

Diversity, Race, Gender, Nationality, Performance.

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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Chapter 1 – Introduction to the research problem

1.1. Introduction

Twenty years into a post-apartheid democracy, South Africa is still grappling with many challenges and complexities in transforming into a multi-racial society. These challenges are true to the corporate context too, thus it is critical to understand how the various demographic and geographic differences could be successfully combined in a board construct and exploited to achieve an optimised corporate performance, whilst simultaneously fostering an inclusive corporate landscape, to the benefit of all South Africans.

Company boards of directors are tasked with guiding an organisation to success, through the decisions it as a board takes. If a group is homogeneous in nature, it excludes potentially valuable insights into the subject in question (Lückerath-Rovers, 2013; Mahadeo, Soobaroyen, & Hanuman, 2012).

1.2. Research motivation

The motivation for this research, is in encouraging the accelerated introduction of diversity through a robust study of companies, their boards and their performance, to demonstrate the value of diversity at a board level. For this study, it was deemed reasonable to evaluate companies listed on the Johannesburg Stock Exchange (JSE) due to the significant impact that such companies have on the South African economy. Further, lessons learned can not only be applied to listed companies but all companies that trade in South Africa.

Globally, the implementation of diversity to the boards of companies has been relatively slow (Zainal, Zulkifli, & Saleh, 2013); this phenomenon is particularly true in South Africa (Seekings, 2008). Understanding the effect of board transformation by those companies who have already embraced diversity, could lead other companies, if positive, to accelerate the diversification adoption process, and realise the benefits of a diverse board. Such a finding would have considerable ramifications for South Africa as well as its economy and society.

Evidence of performance enhancements associated with diversity of corporate boards has been found in previously conducted research (Andrevski, Richard, Shaw, & Ferrier, 2014; Campbell & Vera, 2010; Cheong & Sinnakkannu, 2014; Du Plessis, O'Sullivan, & Rentschler, 2014; Gul, Srinidhi, & Ng, 2011; Julizaerma & Sori, 2012; Liu, Wei, & Xie, 2014; Nguyen, Locke, & Reddy, 2015; Rose, Munch-Madsen, & Funch, 2013; Srinidhi, Gul, & Tsui, 2011; Ujunwa, 2012), and this would suggest that broader diversification should result in a positive outcome. Black & Kim (2012) state that board structure reforms, pertaining to outside directors and audit committees, positively affect firm market values and a firm's performance.

Listed companies are obliged to conform to relevant legislation, promoting transparency. This allows for a standardised analysis of company performance and facilitates the evaluation required as defined in South Africa's King Code of Governance Principles 2009 (King III Code). Good governance ultimately emanates in earnings quality (Srinidhi et al., 2011).

Atanasov & Black (2015) affirm that the incentive for imposed legislation is stimulating reform and advocating the accelerated adoption of board diversification. This enables earlier realisation of the advantages stemming from that reform (Black & Kim, 2012).

If the structure of the board of directors could be altered from the status quo of a predominantly homogenous composition to a more diverse construct, it stands to reason that there would be a broader pool of human capital with broader experience, and multiple points of reference upon which to draw from, stimulating improved decision making, a catalyst for enhanced performance (Mahadeo et al., 2012).

The analysis and interpretation of comparative ratios used to assess a company's performance, specifically in relation to, and with a focus on the diversity composition of the board of directors of the companies in question, will in essence provide some evidence to either confirm or negate the probability that a diverse board does in fact give rise to a positive influence on company performance.

1.3. Human capital

In organisations where the human capital is truly diverse, the variety in the points of reference and decision considerations are greatly amplified, as has been confirmed in numerous previous studies (Campbell & Vera, 2010; Crook, Todd, Combs, Woehr, & Ketchen, 2011; Johnson, Schnatterly, & Hill, 2013). It stands to reason that with a broader experience base, be it in industry, climate, context or the like, a more extensive set of information could be exploited to enrich the decision making process.

1.4. Decision making

A listed company's board of directors are entrusted with driving the performance of their specific companies. As a clear driver, company performance has a significant footprint that touches on many forms of stakeholder interests and objectives. The decisions and direction taken by these boards are thus critical if a company is to accomplish all of its objectives, most notably prosperity and sustainability.

Improved decision making proficiencies are shown to have a positive impact on an organisation in value-added company performance. A board structure with a diverse configuration facilitates effective and improved decision-making (Carter, D'Souza, Simkins, & Simpson, 2010; Ntim, 2015; Srinidhi et al., 2011).

1.5. Diversity

If decisions are made by a homogeneous group of individuals, it poses the question as to whether the human capital in question, has the various points of reference to make those critical decisions in the most effective way possible (Lückerath-Rovers, 2013; Mahadeo et al., 2012; B. B. Nielsen & Nielson, 2012). If there is a limited amount of experience and exposure within a team, it could present a risk in terms of limited points of reference or experiences within the scope of the decision at hand.

1.5.1. Nationality

Nationality diversity brings with it a profusion of experience and knowledge of various institutional and economic environments. Considering business activities frequently encompass the global economy, nationality diversification intersperses the understanding of different operating environments and their citizenship (Jhunjhunwala & Mishra, 2012), arguably intensifying competitiveness and company performance.

Nationality diverse teams support enhanced complex task solving and formulation of additional yet innovative solutions. Strategic decision making is epitomised by highly complex, uncertain and often unique situations in which nationality diversity undoubtedly intensifies the comprehension and quality of those strategic decisions resultant in shaping company performance (B. B. Nielsen & Nielson, 2012).

1.5.2. Gender

Academics have long debated the behavioural differences between males and females in executive leadership roles. Gender dissimilarities in a leadership context may be significant given that these differences may bring balance to board decision making, guidance and governance (Du Plessis, Saenger, & Foster, 2012).

Gender diversity when supported may enhance board working relationships and ultimately contribute to board effectiveness. Jonsen, Maznevski, & Schneider (2010) state that knowing an individual's gender is not necessarily indicative of that person's management style and should be considered accordingly.

Studies in various countries have found a positive relationship between female board representation and company performance (Campbell & Vera, 2010; Du Plessis et al., 2014; Gul et al., 2011; Julizaerma & Sori, 2012; Liu et al., 2014; Nguyen et al., 2015; Srinidhi et al., 2011) and this should promote gender inclusion within South Africa's corporate board constructs.

1.5.3. Race

Racial diversity affords an abundance of experience adding to human and social capital (Haynes & Hillman, 2010) and the financially unrecognised pool of intellectual property (Maditinos, Chatzoudes, Tsairidis, & Theriou, 2011), which in its own right must contribute to the value of a corporation. In previous studies a company's performance has shown to a have positive correlation to racial diversity (Cheong & Sinnakkannu, 2014; Ujunwa, 2012).

If managerial racial diversity impacts firm performance via competitive intensity and enhances the capacity in formulating innovative competitive actions (Andrevski et al., 2014), it stands to reason that large growth opportunities and intensified organisational performance can be attained. However, given the legislated implications of quotas in South Africa, caution must be taken not to appoint directors merely as window dressing as the resultant board diversity will have no impact on company value (Ahern & Dittmar, 2012).

1.6. Company performance

The performance of the aforesaid listed companies were interrogated, based on their published financial statements for the 2014 financial year, publication of such financial statements being a mandated requirement to be listed on the JSE. This data were processed via standardised statistical tests, and analysed to determine if a board diversity construct positively impacts on the overall company performance. The measures of analysis were Return on Equity (ROE), Return on Assets (ROA) and Tobin's q, to determine that performance.

Using the various aforesaid measures companies were evaluated through their financial statements to determine if diversity has a positive effect on the company's overall accounting-based and market-based performance. If proven, it would illustrate that an accelerated move to diversity would be beneficial for an organisation.

1.7. Research objective

The essence of this research was to explore whether the diversity of a listed company's board of directors has a positive influence on the organisation's performance. The fact that people bring their own decision making framework, which is based on their specific experiences of business, environment and personal aspects, should add a greater depth of experience, when combined with other people's dissimilar experiences, in providing a synergy of knowledge (Levrau & Van den Berghe, 2013). Therefore, the robustness of these decisions when contemplated within a boardroom setting, derives better decisions (B. B. Nielsen & Nielson, 2012).

The propensity of South African companies to diversify its management, particularly its board of directors, has been relatively slow (Zainal et al., 2013). If it could be demonstrated that an inclusive and diverse board had a positive impact on a company's performance, it would indicate the need to accelerate this process to realise the benefits thereof in South Africa.

Numerous previous studies have established the positive outcomes of diversity (Andrevski et al., 2014; Campbell & Vera, 2010; Cheong & Sinnakkannu, 2014; Du Plessis et al., 2014; Gul et al., 2011; Julizaerma & Sori, 2012; Liu et al., 2014; Mcmahon, 2011; Nguyen et al., 2015; Rose et al., 2013; Srinidhi et al., 2011; Ujunwa, 2012), and aimed to demonstrate that true broad based diversity, increases the probability of optimised financial performance. Although diversity assumes many forms (Embrick, 2011; Kramar, 2012; Mahadeo et al., 2012; B. B. Nielsen & Nielson, 2012; Podsiadlowski, Gröschke, Kogler, Springer, & van der Zee, 2013), the primary driver of this research will be focused on three specific variables that is, nationality, gender and race, which will then in turn be triangulated and analysed through a multiple regression.

1.8. Conclusion

The aim of the research sought to determine if the diversity structure of a board of directors of a listed company, specifically diverse in terms of nationality, gender and race, indicates a higher measure of performance in comparison to those

boards which do not conform to that combination of diversity, and to provide further evidence that an accelerated incorporation of diversity into the board would be beneficial to the firm, its performance, as well as South Africa, its economy, its objectives and its citizens.

The following chapter will review literature from the body of knowledge specific to the topics revealed in this chapter with the intention of enriching the existing knowledge contained therein.

Chapter 2 – Literature review

2.1. Introduction

The previous chapter provided the context for the importance of this research as well as the critical importance to the South African context. It outlined the intended subject of analysis given the complexities which present themselves in South Africa, and with an intention to accelerate the current slow adoption of board diversity into the corporate makeup of South African companies.

The purpose of this chapter was to encapsulate all relevant studies previously undertaken in this field of study. The literature review commenced with a vigorous interrogation into these core elements to build a meticulous comprehension of the body of knowledge upon which this study was built.

The chapter thus begins with a review of a company's board construct and its leadership. Diversity is then defined and an interrogation of each relevant dimension of diversity, being nationality, gender and race, thereafter completed. Finally, the chapter concludes with an investigation of the appropriateness of the measurements to be used, being those of accounting-based performance, that is, Return on Equity (ROE) and Return on Assets (ROA), as well as market-based performance, specifically Tobin's q.

2.2. Boards of directors

To comprehend the effect of board diversity on a firm's performance, the composition and purpose of the board itself needs to be understood. A board of directors is a consortium of elected members who are jointly responsible for overseeing a firm's activities and act also as a governance mechanism (Ujunwa, 2012). Control, advisory and governance culture form part of the board's mandate (Minichilli, Zattoni, Nielsen, & Huse, 2012). The composition of a board is the decisive factor in influencing company results (Johnson et al., 2013).

The primary duty of the board is to not only protect the shareholder's interests but just as importantly, to set strategy and provide advice and direction to the CEO and other senior management, along with assessing senior management's performance (Adams, Hermalin, & Weisbach, 2010).

An improvement in earnings quality, demanded by investors and derived through good governance, represents a key undertaking of the board (Srinidhi et al., 2011). The board are held increasingly responsible for the firms which they govern (Ujunwa, 2012). The extent of their power is usually defined in a company's by-laws and internally governs what they may and may not do (Mayers, Shivdasani, & Smith, 1997). In South Africa, the primary recommendation on good corporate governance is embodied in the King III Code and the King Code of Conduct Report.

Caution should however be exercised in adopting generic duties and tasks delegated to directors as this may well lead to irrelevant, unproductive regulators who are detrimental to corporate growth (Mccahery & Vermeulen, 2014). Excessive regulation creates an atmosphere of bureaucracy and objectives focused in the short term (Mccahery & Vermeulen, 2014).

2.2.1. Board working structure

The board working structure and its decision making culture have a significant influence on communication, giving rise to information sharing and decision making (S. Nielsen & Huse, 2010). The primary focus of the board is cumulative decision making with the due consideration of each board member's input. A segment of the board's time also involves a supervisory function (Schwartz-Ziv & Weisbach, 2013).

Harrison (1996) classifies a decision as "a moment, in an ongoing process of evaluating alternatives for meeting an objective, at which expectations about a particular course of action impel a decision maker to select that course of action most likely to result in attaining the objective" (Harrison, 1996, p. 46). Specifically, within a top management team context, the decision maker ought to be both an adaptive decider, and rational decision maker, defined as "methodical,

systematic, independent, and unimpulsive throughout the decision-making process" (Phillips, 1997, p. 276).

The board working structure encompasses the processes and procedures that promote the interaction among board members and, which dictate the board's decision making processes as stipulated by accepted norms and regulations (S. Nielsen & Huse, 2010). Board structure is an important factor in firm performance (Pathan & Faff, 2013) and improved financial performance can be attained by enhancing said board structure (Fu, 2012).

Board meetings, which are held a minimum of four times annually, where the board's critical mandates are decision making, governance and guidance, require that all decisions, deliberations and actions of that board, must comply with the ethical values, being the foundation of good corporate governance, including transparency, fairness, responsibility and accountability (King, 2009).

2.2.2. Board capital

Haynes & Hillman (2010) consider board capital as including both social and human capital, contributing towards capital breadth and depth capital. Social capital encompasses, amongst others, both trust and cooperation and these two facets are considered formidably linked (Thöni, Tyran, & Wengström, 2012). According to Johnson et al. (2013), director's social capital can be segmented into three categories, namely social standing, links to other companies and the relationship directors have with internal company managers.

2.2.2.1. Social capital

Social capital in itself is considered a significant indicator of cooperation (Thöni et al., 2012), and the social capital aspects each director asserts have a significant impact on company outcomes (Johnson et al., 2013). In conjunction with social capital, human capital further influences company performance (Crook et al., 2011; Johnson et al., 2013).

Knowledge, abilities and skills are those attributes that comprise human capital (Crook et al., 2011), and in unison with these, motivation (Maditinos et al., 2011). Human capital lends itself to intellectual capital, elaborated on below, as a core composite element thereof (Maditinos et al., 2011). To achieve superior firm performance, exceptional human capital, considered critical to success, should be sourced, and then retained within the firm (Crook et al., 2011).

2.2.2.1. Human capital

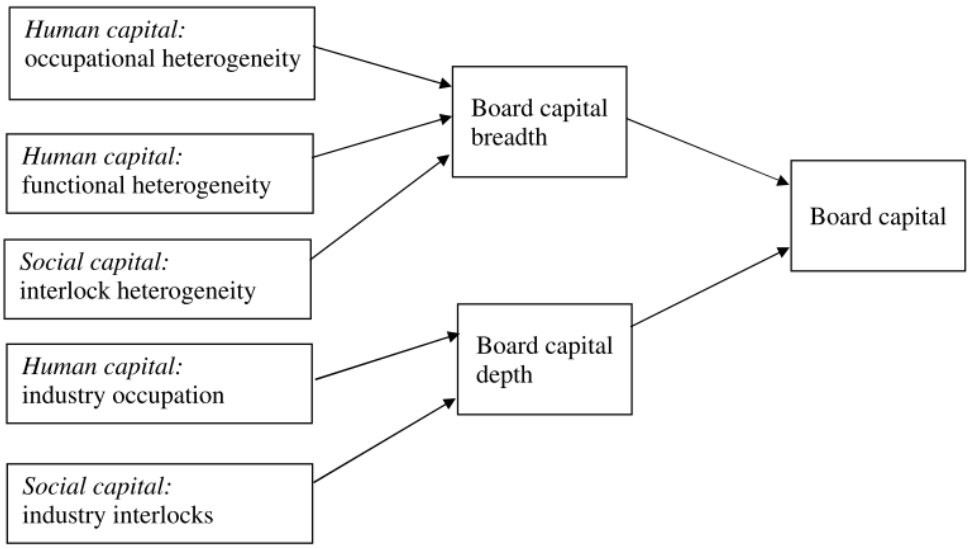
Human capital in terms of both breadth and depth, elicits a far broader expanse when disseminated amongst a group of diverse individuals, in contrast to an ensemble which is more homogeneous and of a similar human capital framework (Andrevski et al., 2014; Mahadeo et al., 2012). Thus diversity lends itself to an increased collective of human capital as opposed to a non-diverse formulation (Arnegger, Hofmann, Pull, & Vetter, 2013).

Haynes & Hillman (2010) advocate capital breadth as being comprised of the amalgamation of occupational heterogeneity and functional heterogeneity, components derived from human capital, as well as interlock heterogeneity, stemming from social capital. They further describe capital breadth as the external experience, being non-industry specific heterogeneity ties, by means of interconnects of experience, occupational, professional and social knowledge.

Haynes & Hillman (2010) stipulate that capital depth relates to the industry occupation aspect of human capital and in addition to this, industry interlocks, being a derivative of social capital. They further state that capital depth is the profound familiarity the board member possesses of the focal business of that specific industry, which concerns interlinking managerial posts, director roles and business experience.

The figure below depicts the board capital paradigm with the dualistic dimensions and the indicators of those dimensions.

Figure 1: The model of Board Capital (Haynes & Hillman, 2010)

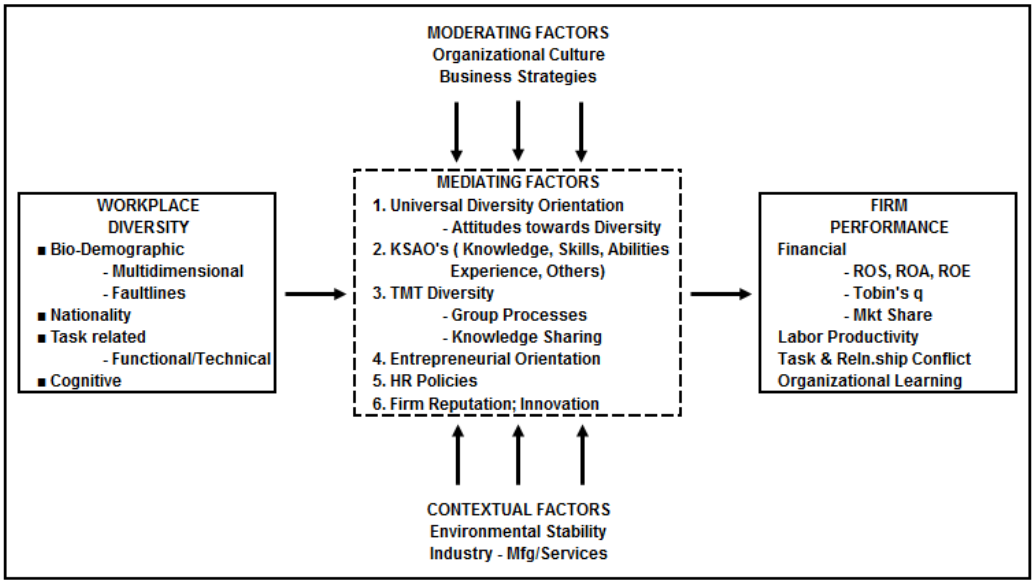


Board members who possess a complementary array of skills, education and knowledge are considered multidisciplinary (Jhunjhunwala & Mishra, 2012). Jhunjhunwala & Mishra (2012) affirm that multidisciplinary boards approach problem solving more comprehensively, are more innovative and are able to tackle matters that are highly complex in nature and have a significant number of subtasks.

Mcmahon (2011) suggests that financial results are used in isolation to assess company performance and are representative of short-term outcomes, however, academics feel that this alone is insufficient. The mediating factors, as being the core of Intellectual Capital, specifically knowledge, skills, abilities, experiences and others (KSAO's), are an imperative segment of measuring performance and that these, along with the customary financial measurements, should be conjoined to better asses company performance (Mcmahon, 2011).

The figure below illustrates the relevance of KSAO's to diversity and its function in firm performance.

Figure 2: Workplace Diversity and Firm Performance: A Model (Mcmahon, 2011)



Intellectual Capital (IC), has a widespread acceptance of being a source of competitive advantage (Maditinos et al., 2011), and the more diverse the compilation of a board, the more the collective experience of the individuals concerned will form part of this value that is not evident within financial statements. Financial performance and market value derive a positive association to the magnitude of IC (Lin, Wei, & Chen, 2006; Nimtrakoon, 2015) and in addition, a company's innovation performance (Inkinen, 2015).

2.2.3. The Board Chair role

Regardless of the structure of a board, in terms of diversity, leadership thereof is key in achieving its mandate and thus leadership responsibility resides with the board chair (Lin et al., 2006). Therefore companies need not fear diversity, as a strong and experienced chair would still be necessitated for success and compliance. The depth of experience to aid the board through diversification in the human capital should be seen as an addition to the competency and in no way a weakening of the board. The importance, role and responsibilities of the chairman are defined in the paragraphs that follow.

"The assumption underpinning the installation and operation of a board of directors is that at the helm of the company one needs a collegial body, striving to reach decisions in a consensus style" (Levrau & Van den Berghe, 2013, p. 444). The complexity and challenges required to lead a company's board far outweigh those necessitated at an individual leadership level (Y. Harrison, Murray, & Cornforth, 2013).

The chairperson is *primus inter pares*, that is, first among equals, being the senior member of a group of peers (Levrau & Van den Berghe, 2013). They stated further that although the chairperson does not have a statutory position, the board chair forms part of the board of directors who have an equally legal responsibility and in addition the chairperson, as board leader, must be held in high standing by his fellow board members as well as possessing the desire and competencies to influence decisions.

The chair needs to be adept in effective group decision making complexities and possess the tools necessary to resolving any enigmas which may present themselves (Guerrero, Lapalme, & Seguin, 2014). The Board Chair has many forms of power available for exploitation to effectively perform the leadership role, including but not limited to, prestige power, structural power, expert power and ownership power (McNulty, Pettigrew, Jobome, & Morris, 2011).

The board chair needs to demonstrate a leadership style that promotes a participative environment of safety, which facilitates motivation, responsibility and dedication through idea sharing and transparency (Guerrero et al., 2014). Guerrero et al. (2014) stipulate that the situation in which the chair person chooses to exert their leadership and advocating their moderating role should be carefully considered.

When the board chair and the CEO are one and the same person, or "Duality" (Dey, Engel, & Liu, 2011), a further influence on company performance and market valuation is experienced. Dey et al. (2011) caution that this duality may hinder monitoring and therefore impact decisions that should be made with shareholder's value interests only. Given the overwhelming evidence from numerous studies presented above, the traditional excuses tendered against board diversification are rendered null and void.

2.2.4. Board size

There are conflicting findings derived from previous research. In certain studies, the number of representatives on a board have derived a negligible effect on firm performance (Julizaerma & Sori, 2012), whereas in various preceding research, recommendations for a larger board composite to achieve improved corporate financial performance have been made (Hartarska & Mersland, 2012; Uadiale, 2010), bearing in mind that size does have an influence on diversity (Arnegger et al., 2013).

The size of the board determines the opportunity for a firm to accommodate the diversity spectrum (Darmadi, 2011). Increasing the board size to accommodate demographic diversity can have associated costs which include affecting the level of identification, communication costs, and also risks the possibility of emotional and non-productive conflict (Arnegger et al., 2013).

Board size, that is the number of board directors (Huang & Kisgen, 2013), when larger, has been found to have a negative relationship with company performance (Ujunwa, 2012). A smaller number of board members, on the other hand, has been found to have a positive effect on performance (Pathan & Faff, 2013).

Downsizing the number of members of a board does not necessarily have a bearing on improved performance of that firm, or an effect on improving shareholder's value (Uchida, 2011). The member selection necessary to impart the appropriate combination of competencies for the success of that board should be decidedly emphasised (Ujunwa, 2012).

2.3. Diversity

"Treating diversity as a generic unidimensional [*sic*] concept is unlikely to capture its complex nature and impact" (Nielsen & Nielson, 2012, p. 373). The term "diversity" is commonplace throughout the business environment. There is substantial literature on diversity (Allen, Dawson, Wheatley, & White, 2008; Andrevski et al., 2014; Arnegger et al., 2013; Butler, 2012; Carter et al., 2010;

Chapple & Humphrey, 2014; Cheong & Sinnakkannu, 2014; Cook & Glass, 2015; Dale-Olsen, Schøne, & Verner, 2013; Darmadi, 2011; de Cabo, Gimeno, & Nieto, 2012; Du Plessis et al., 2014, 2012; Embrick, 2011; Gul et al., 2011; Hafsi & Turgut, 2013; Jhunjhunwala & Mishra, 2012; Joecks, Pull, & Vetter, 2013; Jonsen et al., 2010; Julizaerma & Sori, 2012; Kaczmarek, Kimino, & Pye, 2014; Kochan et al., 2003; Kramar, 2012; Mahadeo et al., 2012; Mcmahon, 2011; Mori, 2014; Nguyen et al., 2015; B. B. Nielsen & Nielson, 2012; Ntim, 2015; Podsiadlowski et al., 2013; Richard, Kirby, & Chadwick, 2013; Richard, Murthi, & Ismail, 2007; Robinson & Dechant, 1997; Rodríguez-Domínguez, García-Sánchez, & Gallego-Álvarez, 2012; Rose et al., 2013; Seekings, 2008; Silverman, 2010; Szombati, 2014; Wachudi & Mboya, 2012; Zainal et al., 2013), specifically interrogating race and gender, however these two constructs alone cannot be considered to be all encompassing when considering complete diversification (Embrick, 2011).

A pivotal component of this research is diversity. The exact connotation of board diversity is still vague (Hafsi & Turgut, 2013). Hafsi & Turgut (2013) proclaimed that the diversity of a board could be characterised by two key paradigms, namely demographic diversity and structural diversity.

Diversity can be extrapolated into an array of characteristics, such as sexual orientation, religion, mental and physical ability, and also includes dissimilarities in relation to operational and physical groups, interests of various peripheral stakeholders and prescribed agreements within the organisation concerned (Embrick, 2011; Kramar, 2012; Mahadeo et al., 2012; B. B. Nielsen & Nielson, 2012; Podsiadlowski et al., 2013).

Diversity attributes within the boardroom can be considered amongst others to be “size, leadership structure (duality of chairman and CEO), founder leader as director, the presence and number of international directors, nature and operations of board committees, board independence, director ownership, director tenure, and director compensation” (Hafsi & Turgut, 2013, p. 464).

“The bottom-line focus of today's business environment requires that diversity initiatives be treated like any other business investment” (Robinson & Dechant, 1997, p. 30). The diversity initiative should be directly linked with the company’s

strategic business objectives and, as with other business initiatives, have an expected return on investment (Robinson & Dechant, 1997).

An ensemble of directors which is homogeneous in nature does not adequately portray the society in which it functions, and is both symptomatic of fallible corporate governance and missed opportunities (Lückerath-Rovers, 2013). A balanced amalgamation of competencies, experiences, backgrounds and viewpoints, must be considered when selecting the board of directors (Ujunwa, 2012).

Silverman (2010) proposes that the term diversity carries a wide assortment of definitions. Diversity specific to the workforce, by its very nature implies a wide array of experience and characteristics. If a group is homogeneous in nature (Lückerath-Rovers, 2013; Mahadeo et al., 2012), it excludes potentially valuable insights into the subject in question, expressly involving those in a board context. Board diversity is considered advantageous as it promotes a discussion which is considered of diverse viewpoints appropriate at a board directorate level (Du Plessis et al., 2012).

Although considered largely beneficial, board diversity can be criticized, as by way of its very nature, that diversity could give rise to conflict (Julizaerma & Sori, 2012). This conflict may well result in a slowed decision-making process, which in turn may prove to be detrimental to the firm in a competitive environment, where the turnaround time of decisions is crucial in averting potentially negative impacts on the company (Kilic, 2015; Rodríguez-Domínguez et al., 2012).

2.3.1. Nationality diversity

With a perspective on information processing leading to decision making, teams with diversity in nationality, bring a plethora of experience and knowledge of various institutional environments (Embrick, 2011; B. B. Nielsen & Nielson, 2012; Zainal et al., 2013).

With business activities encompassing the global economy, a company whose board is of a nationality diverse nature brings with it an understanding of different

operating environments and their people, whose culture, lifestyle and backgrounds in all likelihood significantly contrast those of local environments (Jhunjhunwala & Mishra, 2012).

The derived benefit of these nationality diverse teams is enhanced complex task solving and formulation of additional yet innovative solutions. Strategic decision making is epitomised by highly complex, uncertain and often unique situations in which nationality diversity arguably intensifies the comprehension and quality of those strategic decisions resultant in shaping company performance (B. B. Nielsen & Nielson, 2012; Zainal et al., 2013).

B. B. Nielsen & Nielson (2012) state that nationality has an insightful and lasting influence on an executive's alignments, separate from logic and wisdom accumulated in management development. Therefore nationality diversity is fundamental in the mix of board director's human capital characteristics. Nationality diversification has been proven to have a positive effect on a firm's financial performance (Rose et al., 2013; Ujunwa, 2012).

Masulis, Wang, & Xie (2012) contend that with the presence of foreign Independent directors on a board, their international experience and background, brings with it value add to the firm. Companies exercising nationality diversity have been associated with traits such as profitability (Zainal et al., 2013). The obstacles relating to the foreign nationality of these directors can sometimes result in downsides, such as company governance being negatively impacted as a result of the deficiency of advisory and monitoring obligations (Masulis et al., 2012).

When comparing the gender and nationality diversity of the board, nationality diversity was found to be more of a company success determinant than that of gender diversity (Rose et al., 2013). There is however, conflicting literature which found no evidence supporting a realised financial benefit based on the nationality diversification construct of a board (Darmadi, 2011; Kilic, 2015).

2.3.2. Gender diversity

"The presence of woman on boards of directors has become a high profile issue in recent years" (Campbell & Vera, 2010, p. 37). There is an increase in regulatory demands on companies to comply with the requirement for increased representation of females in senior positions (Chapple & Humphrey, 2014).

Gender diversity can be considered to be the percentage of females to males (Jhunjhunwala & Mishra, 2012). Jonsen, Maznevski, & Schneider (2010) express the sentiment that gendering is perceptual by definition and that gender is constructed by an enactment process. They declare that the amount of females that hold senior management positions needs to be increased.

"Critical mass" rather than the simple presence of women has an incremental benefit on firm performance" (Arena et al., 2015, p. 339). Torchia, Calabrò, & Huse (2011) have concluded that a "critical mass" relating to the number of females serving on a board, is three. This number is the minimum number required to impact company performance (Liu et al., 2014), by exerting an influence on board processes, duties and working style. The influence of females in the context of board gender diversity impacts gender integration into senior management posts (Cook & Glass, 2015).

There is empirical evidence demonstrating that a board with a female constituent realises an improvement in company performance and value creation (Campbell & Vera, 2010; Du Plessis et al., 2014; Gul et al., 2011; Julizaerma & Sori, 2012; Liu et al., 2014; Nguyen et al., 2015; Srinidhi et al., 2011). The resultant benefit gained from this gender diversity arguably realises a contribution toward a firm's innovation and growth potential (Mccahery & Vermeulen, 2014). This will be retested in a South African context.

To date, the uptake of gender diversification on boards has been very slow (Zainal et al., 2013). In previous studies, encompassing the gender diversity of a board, evidence exists confirming a positive relationship between board gender diversity and stock price "informativeness", and this "informativeness" is associated with higher earnings quality and institutional trading (Gul et al., 2011).

In companies whose boards have female representation, there has been a significant and positive effect on long-term firm value (Campbell & Vera, 2010), and this strongly motivates the acceleration in adopting this diversification approach avoiding any potential loss of company added value. Quotas which legislate board gender diversity and advocate the accelerated adoption thereof, have been shown to have a positive influence on many country's corporate boards (Srinidhi et al., 2011).

Contrary to these findings, there is conflicting research in which board gender diversity has presented evidence confirming the presence of a negative effect on a firm's financial performance (Darmadi, 2011; Ujunwa, 2012). However, consideration must be had of the fact that in certain instances where there was a negative relationship between gender diversification, and firm performance and value, legislatively imposed female quota representation on boards alters the experience, age and preferences of that board (Ahern & Dittmar, 2012).

When analysing the difference in ages between male and female directors, on average, females are generally four to five years younger than their male equivalents (Simpson, Carter, & D'Souza, 2010), and this gives rise to further diversity in terms of board viewpoints due to the experience and age of the directors.

Gender diversity has been assessed in conjunction with an array of alternating diversity attributes in determining factors contributing towards superior company performance. These findings, however, did not produce evidence to motivate the appointment of female directors to attain a diverse board construct, encompassing gender, which would result in enhanced board performance (Kilic, 2015; Mori, 2014; Pletzer, Nikolova, Kedzior, & Voelpel, 2015; Rose et al., 2013; Wachudi & Mboya, 2012).

Due to the perception that females are considered emotional, their ability to manage an organisation has been questioned (Julizaerma & Sori, 2012). According to Lerner, Li, Valdesolo, & Kassam (2015), however, emotion is the decisive element in decision-making. Emotions may possibly lend themselves to more efficient decision making (Lew, 2015).

Although financial performance is the primary measurable component for this research, there are arguments that although financial performance may not be directly affected by board gender diversity, there is a positive impact on governance as well as a reduction in risk taking (de Cabo et al., 2012). Investors have shown a more favourable response to imperative corporate financial decisions made by companies with executive female representation (Huang & Kisgen, 2013).

Jhunjhunwala & Mishra (2012) note that females are considered more intuitive when making decisions, are proficient at relation building and have the ability to multitask, in contrast to males, who demonstrate more task-focused actions and base their decision-making style on procedures and information. It has been shown that female executives exercise more caution than their male counterparts when making significant corporate decisions (Huang & Kisgen, 2013; Levi, Li, & Zhang, 2014) and are more risk averse (Srinidhi et al., 2011).

The question also presented itself on whether females are appointed to boards to fulfil quotas, which could potentially devalue female directorships, questioning the merit of their appointment (Du Plessis et al., 2014), or if that engagement is based purely upon knowledge and ability, which would enrich the proficiencies of said board (Joecks et al., 2013), and, as is evident from the paragraphs above, there are arguments both for and against gender diversification.

2.3.3. Race diversity

Racial diversity on every managerial level, contributes towards an organisation's capabilities in the discovery and exploitation of opportunities, for developing new and improved competitive actions, via participation which promotes the sharing of cognitive knowledge amongst individuals at various levels of management (Andrevski et al., 2014; Haynes & Hillman, 2010; Maditinos et al., 2011).

It has been ascertained that managerial racial diversity indirectly affects the performance of a firm via competitive intensity, subject to environmental benevolence. To enhance the capacity in formulating innovative competitive

actions under competitive conditions, with large growth opportunities, racial diversity within management augments this requirement (Andrevski et al., 2014).

Following the abolition of apartheid in South Africa, the African National Congress (ANC), South Africa's first democratically elected government, introduced a number of policies focused on eliminating the previous inequalities between black and white South African citizens (Ntim, 2015; West, 2009). The South African stock market highly values this diversity, validating the importance of the initiatives imposed to achieve board diversity within the South African context (Ntim, 2015).

The firm's performance has been shown to a have positive correlation to racial diversity (Andrevski et al., 2014; Cheong & Sinnakkannu, 2014; Ujunwa, 2012), and the accelerated adaption to the necessitated board diversity construct, will be beneficial in terms of value added performance.

Racial diversity, as with the aforementioned categories of diversity, brings with it an abundance of experience, adding to human and social capital (Haynes & Hillman, 2010). This will contribute also to the financially unrecognised pool of intellectual property (Maditinos et al., 2011), which in its own right contributes to the value of the corporation.

It has been demonstrated that both gender and ethnic diversity have a positive impact on a company, although ethnic diversity is more highly valued by the South African stock market (Ntim, 2015). However. as with other diversity constructs, there is literature which was unable to find a relationship between firm performance and ethnic diversity (Carter et al., 2010) whereas dissimilar research findings present a negative relationship between racial diversity and company performance (Kochan et al., 2003; Shukeri, Shin, & Shaari, 2012).

The statement, as with gender diversity, will always present itself, "Yet perhaps the appointment of ethnically diverse directors is simply "window dressing" to give the impression that the firm's belief is in sync with that of society's" (Cheong & Sinnakkannu, 2014, p. 96). Those directors who are considered traditionally underrepresented on boards, have a vested interest in representing their

appointment as being based on merit without, consideration of their race (Krawiec, Conley, & Lissa, 2014).

Racial diversity is vital in achieving a positive change in a firm's performance, contributing towards value added results, and is a clear motivation to accelerate the adoption of board diversity as a proactive initiative (Mcmahon, 2011) , as in certain industries, this has proved to be beneficial in the long-term (Richard et al., 2007).

Up to now, the application of race diversification on boards has been very slow (Zainal et al., 2013). Boardrooms need to reflect the changing racial marketplace (Butler, 2012), and to accomplish this, a more diverse board with the consideration of race should be established, with an intention to achieve this board compilation post-haste and realise the significant benefits of a diverse board.

Introducing quota reform is seen as a catalyst for promoting equilibrium in the boardroom (Dale-Olsen et al., 2013). Although some boards adopt a best practice approach when considering diversity quotas, there are some capital market regulators which impose quotas on boards (Chapple & Humphrey, 2014).

Chapple & Humphrey (2014) state that self-regulated or mandated application of quotas, evoke the debate around the nature of the benefits to be realised from diverse boards and the practical pressures these corporate governance initiatives impose on companies to respond. Quotas have both positive and negative connotations and are discussed in the subsection below.

2.4. Quotas

There has been a flurry of legislatively imposed quotas for corporate board representation along with penalties for noncompliance thereof (Du Plessis et al., 2014). As a result of quotas imposed on boards in countries such as Norway and Sweden, the increased diverse representation has demonstrated higher earnings quality (Srinidhi et al., 2011).

Du Plessis et al. (2012) state that mandatory implementation of quotas can result in underqualified and inexperienced individuals occupying director positions on a firm's board which could prove detrimental to company performance and in view of this uncertainty, perhaps alternate measures should be given preference over the mandated implementation of quotas.

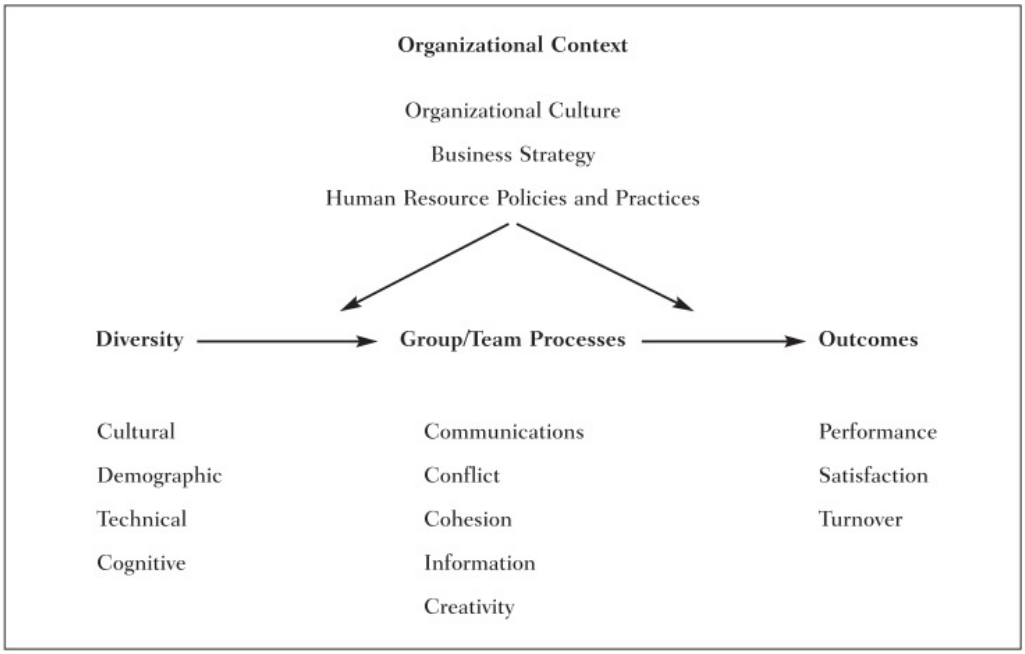
Quota appointments may be seen as tokenism or what is commonly known as window dressing to appease stakeholders and society at large which in turn may prejudice director appointments, and if not accepted in earnest could jeopardise the board directorates performance (Pletzer et al., 2015). If board directors are appointed merely as window dressing, the resultant board diversity will have no impact on company value (Ahern & Dittmar, 2012). This behaviour in contrary to the spirit of the legislation and when such behaviour is adopted results are not reflective of the many benefits already described.

2.5. Diversity effects on processes and outcomes

Kochan, T. Bezrukova, K. Ely, R. Jackson, S. Joshi, A. Jehn, K. Leonard, J. Levine, D. and Thomas, D (2003) state, as depicted in their model in the figure below, that diversity augments processes which ultimately lead to performance, satisfaction and turnover outcomes. The cognitive and demographic ensemble of the board, along with the communication, conflict, cohesion, information and creativity board processes, impact performance.

Firm performance is key to this study, and the performance needs to be measured and assessed based on the diversity aspect. The model depicted in the figure below may be scrutinised as a reference point to designing the performance assessment (Kochan et al., 2003).

Figure 3: The model: the effects of diversity on group processes and outcomes (Kochan, T. Bezrukova, K. Ely, R. Jackson, S. Joshi, A. Jehn, K. Leonard, J. Levine, D. and Thomas, D., 2003)



2.6. Performance measures

Three quintessential measurements have been identified to assess the firm's performance in respect of both accounting and market relevance. These are ROE, ROA and Tobin's q, each of which will be grouped in terms of analysis fit and relevance, portrayed in the subsections that follow.

2.6.1. Market-based and accounting-based measures

It is imperative that various accounting and market centred measures are evaluated in unison to determine the performance of a listed company (Almujamed, Fifield, & Power, 2012). There are various aspects which each viewpoint based measure applies and these differ significantly. With an improved robustness in ratio analysis, thus producing more accurate research results, the positive effect on a company's performance based on board diversity, is more objectively analysed.

2.6.1.1. Market-based measures

When analysing market performance ratios, cognisance of the respective timelines, influences and analysis outlooks must be heeded (Carpentier, Cumming, & Suret, 2012). Market-based ratios are used in forecasting the future performance of a company as well as assessing the firm's current financial position (Dezs & Ross, 2012).

Investors ultimately determine the value of a company using certain calculations and these measures give rise to a subjective magnitude of the company's performance (Dezs & Ross, 2012). Specific to this research, Tobin's q, "…a forward-looking measure that captures the value of a firm as a whole rather than as the sum of its parts and implicitly includes the expected value of a firm's future cash flows, which are capitalized in the market value of a firm's assets" (Dezs & Ross, 2012, p. 1087), will be employed for analysis.

Investor behaviour and perceptions are reflected in stock market reactions (Hoffmann, Post, & Pennings, 2015, 2013), and these reactions have a substantial bearing on the attributes for the required measurements. There are factors beyond that of the company's control such as analyst's perceptions (Ioannou & Serafeim, 2014), investor confidence and behaviour, such as whether to invest or not to invest (Hoffmann et al., 2015), as well as market expectations (Merkle & Weber, 2014) that can influence these market-based measures.

2.6.1.2. Accounting-based measures

As with market-based measures, accounting-based measures have timeline, influence and analysis outlook attributes (Carpentier et al., 2012). Historical performance, referring to the relative past performance, is assessed in this instance, thus providing a backward outlook of the financial situation of a company (Pletzer et al., 2015).

This is in contrast to market-based measures that are moderately speculative and incur the inherent risks. Legislation, specifically accounting reporting

principles as defined by the International Financial Reporting Standards (IFRS), have an influence on the capital market (Christensen, Hail, & Leuz, 2013).

An accounting-based measure provides an objective review of the firm's past performance (Arena et al., 2015). The ROE ratio will be used here to measure the company's profit for the year in comparison to the company's total shareholder value (Hafsi & Turgut, 2013), at year-end.

The ROA ratio will be used to interpret the efficiency of investments as a proxy for overall performance as perceived by stakeholders (Arena et al., 2015). The combination of these ratios will be applied to aid in assessing the positive impact on a company's accounting-based performance in relation to its board diversity.

2.7. Conclusion

This literature review was undertaken with an attempt to understand the construct of a board and its dynamics, and then to determine the attributes of diversity and the characteristics that would comply with the intention to diversify human capital of a board (Haynes & Hillman, 2010; B. B. Nielsen & Nielson, 2012). Following on from this, the literature review endeavoured to determine the measurements required to assess and evaluate a firm's performance based on its diversity.

When these are related to the construct of the research hypotheses, a determinant of the positive effect of diversity, being facilitated by means of differences in nationality, gender and race, as well as the triangulation of the three attributes in union, on a firm's performance can be measured, analysed and compared.

For an effective diverse board, there must be a considered ratio or mix of human capital at any given time, to adequately assess and address every type of situation that may impact the company, and this mix must be constantly scrutinised and modified for optimal efficacy (Jhunjhunwala & Mishra, 2012).

In chapter 6, these constructs are re-evaluated individually to test for validity in the context of this study. Such findings will add to this vast array of knowledge and build upon an understanding of this critical field of study, given that the combined diversity attributes and its effect on firm performance and market sentiments, was conducted within a South African context.

The following chapter formulates the research hypotheses with the consideration of the literature reviewed within this chapter and in combination with the context presented in chapter one above.

Chapter 3 – Hypothesis

3.1. Introduction

Through the many Studies introduced in the previous chapter have demonstrated that board diversity has an impact on company performance, and a divide exists in the body of knowledge as to the benefits of diversity. This study interrogates historical performance and in addition, the firm's anticipated future performance. It is imperative that various accounting and market centred measures are evaluated in unison to determine the performance of a listed company (Almujamed et al., 2012).

In addition to the diversity aspect of the board of directors, the effect of board size on performance is a determinant factor, as the size of the board denotes the degree to which the various attributes of diversity can be accommodated. Therefore board size, being a diversity enabler, is an important contributing factor towards diversity and is evaluated accordingly.

Through a robust statistical evaluation, the following hypotheses seek to determine if there is an impact on a listed firm's performance through diversity using the trifecta of nationality, gender and race in a board's diversity composition. There is, however, no significant prior research which considers a combination of nationality, gender and race in the construction of a listed company's board diversity and the resultant effect on that firm's performance.

Objective 1 attempts to determine the existence of a relationship between the board's diversity makeup and company performance exists. With the assumption that a relationship does exist, objective 2 further seeks to determine if this relationship is a predictor of performance.

There are three specific measures that will facilitate the analysis of results. These measures include ROE, ROA and Tobin's q. The combination of these measures will provide both an accounting-based and market-based performance indication.

3.2. Research Hypothesis 1

A relationship between board nationality diversity and firm performance exists, and is a predictor of company performance. The null hypothesis states that the diversity of a board, specifically with reference to nationality (DOBN) and firm performance is not related and is not a predictor of company performance (FP1). In addition, the performance measurements are in line with those of boards considered to be homogenous in structure. The alternate hypothesis then states that the diversity of a board, specifically with reference to nationality (DOBN) and firm performance, is related and is a predictor of company performance (FP2). In addition, the performance measurements differ from those of boards considered to be homogenous in structure.

$H1a_0$: DOBN has no relationship with firm performance $FP1 \geq FP2$
$H1a_A$: DOBN has a relationship with firm performance $FP1 < FP2$

$H1b_0$: DOBN is not a predictor of firm performance $FP1 \geq FP2$
$H1b_A$: DOBN is a predictor of firm performance $FP1 < FP2$

3.3. Research Hypothesis 2

A relationship between board gender diversity and firm performance exists and is a predictor of company performance. The null hypothesis states that the diversity of a board, specifically with reference to gender (DOBG) and firm performance is not related and is not a predictor of company performance (FP1). In addition, the performance measurements are in line with those of boards considered to be homogenous in structure. The alternate hypothesis then states that the diversity of a board, specifically with reference to gender (DOBG) and firm performance, is related and is a predictor of company performance (FP2). In addition, the performance measurements differ from those of boards considered to be homogenous in structure.

$H2a_0$: DOBG has no relationship with firm performance $FP1 \geq FP2$
$H2a_A$: DOBG has a relationship with firm performance $FP1 < FP2$

$H2b_0$: DOBG is not a predictor of firm performance FP1≥FP2
$H2b_A$: DOBG is a predictor of firm performance FP1<FP2

3.4. Research Hypothesis 3

A relationship between board race diversity and firm performance exists and is a predictor of company performance. The null hypothesis states that the diversity of a board, specifically with reference to race (DOBR) and firm performance, is not related and is not a predictor of company performance (FP1). In addition, the performance measurements are in line with those of boards considered to be homogenous in structure. The alternate hypothesis then states that the diversity of a board, specifically with reference to race (DOBR) and firm performance, is related and is a predictor of company performance (FP2). In addition, the performance measurements differ from those of boards considered to be homogenous in structure.

$H3a_0$: DOBR has no relationship with firm performance FP1≥FP2
$H3a_A$: DOBR has a relationship with firm performance FP1<FP2

$H3b_0$: DOBR is not a predictor of firm performance FP1≥FP2
$H3b_A$: DOBR is a predictor of firm performance FP1<FP2

3.5. Research Hypothesis 4

The relationship between the trifecta, being a single consolidated variable of the three diversity attributes which include board nationality, gender and race diversity, is a predictor of firm performance. The null hypothesis states that the diversity of a board, with reference to nationality, gender and race in unison (DOBNGR), is not a predictor of a firm's performance (FP1) and the performance measurements are in line with those of boards considered to be homogenous in structure. The alternate hypothesis then states that the trifecta of board nationality, gender and race diversity in unison (DOBNGR), is a predictor of the firm's performance (FP2) and the performance measurements differ from those of boards considered to be homogenous in structure.

$H4_0$: DOBNGR is not a predictor of firm performance	FP1≥FP2
$H4_A$: DOBNGR is a predictor of firm performance	FP1<FP2

3.6. Research Hypothesis 5

A relationship between board size and firm performance exists and is a predictor of company performance. The null hypothesis states that board size (SOB) and firm performance is not related and is not a predictor of company performance (FP1). The alternate hypothesis then states that board size (SOB) and firm performance, is related and is a predictor of company performance (FP2).

$H5a_0$: SOB has no relationship with firm performance	FP1≥FP2
$H5a_A$: SOB has a relationship with firm performance	FP1<FP2

$H5b_0$: SOB is not a predictor of firm performance	FP1≥FP2
$H5b_A$: SOB is a predictor of firm performance	FP1<FP2

3.7. Conclusion

This chapter defined the hypotheses motivated by chapter two in an attempt to assess the divide in the body of knowledge reviewed. The next chapter with detail the research methodology most appropriate for producing a robust analysis framework for the hypotheses presented herein.

Chapter 4 – Research methodology

4.1. Introduction

The previous chapter defined the pivotal research hypothesis under interrogation and this chapter will articulate the methodology applied to conduct the research. The research commenced with a robust definition of the research design to be employed, given the time and resource limitations, to most appropriately address the research hypotheses.

The research design attempts to establish if a relationship between the diversity of a listed company's board, the board size, and its accounting and market performance exists. The aforesaid board structure would be a predictor of the outcome of the firm's performance. Therefore the purpose of the methodology sets out to establish if this relationship is prevalent or has no analytically interpreted difference on performance.

Careful consideration was taken in determining the metrics to be applied for relevant testing. The required sample was exemplified by way of the unit of analysis, population and the defined sampling method. The data collection process and analysis thereof was then devised.

4.2. Research design

The research design can be defined as a process that considers a multitude of decisions concerning which topic and what population is to be studied, which research methodology to exploit, and for what purpose (Abowitz & Toole, 2010). The literature deliberated in chapter 2 has demonstrated that an influence on company performance, based on board diversity, and board size can be expected.

The effect on firm performance will be tested and analysed through both market-based and accounting-based measures, for companies listed on the JSE. The use of these measures for analysis is comprehensively documented throughout

the body of knowledge within the literature reviewed. The metrics evaluated include ROE, ROA and Tobin's q.

Given the legislated auditing requirements for companies listed on the JSE, all the necessitated information required to conduct this study is publicly available via published financial statements and an array of secondary data sources. The metrics selected for the analyses of the performance of the assortment of listed companies, for both accounting-based and market-based measures, avail themselves for straightforward calculation and will be used for a robust statistical evaluation.

This study can be considered as both archival and desktop in nature Blumberg, Cooper, & Schindler (2008) observes that this study approach is regarded as ex-post facto, indicating that only the relationship characteristics between the variables will be described, as the study has no influence on the independent variables as would be the case with an experimental study. The fact that the study has no influence on the financial performance, that is, the dependent variable of a JSE listed company, attests to this statement.

A study where numerical data is gathered and mathematically analysed is defined as quantitative in nature (Muijs, 2010). Given that a statistical analysis of the numeric variables is required to understand the relationship characteristics, this signifies the need for a quantitative study.

This research design was considered appropriate in that a quantitative research methodology provided the basis necessary to perform a robust statistical analysis of the stated hypotheses. The public availability of the audited financial data eliminated the need to generate additional data, compliant with an archival study.

Given that the literature implies that a relationship exists between the construct of board diversity incorporating nationality, gender and race, the board size, and firm performance, measured by ROE, ROA and Tobin's q, being the independent and dependent variables, a descriptive approach was undertaken.

4.3. Unit of analysis

The unit of analysis is considered the major entity being studied, level of depth of the study and, in conjunction with this, the objects which are scrutinised (Blumberg et al., 2008). The unit of analysis will be the nationality, gender and race demographic construct of the board of directors, and the board size of companies listed on the JSE.

4.4. Population

The universe or population of relevance is the board of directors of South African companies actively trading on the JSE at the specific point in time which is dictated by that company's 2014 financial year-end. Although the number of listed companies on the JSE exceeds 400, the designated population was obtained using the sampled company's annual reports. In addition, the company's listed status for the period under review was confirmed as being active.

The reasoning behind the restriction of the research to those companies listed on the JSE resides in the fact that regulatory compliance obligates listed companies to disclose, at a public forum level, audited information relating to financial performance as well as board demographics. The uniformity required of the disclosures allows for a more accurate, unbiased comparison of company financial performance and board directorate demographics.

The population is the entire combination of the units of analysis that contribute towards answering the research hypotheses and is the array wherefrom the sample will be selected (Saunders & Lewis, 2012). Therefore, those companies which comply with the required attributes are considered an appropriate population from which to extract and analyse a sample in order to answer the research hypotheses concerning nationality, gender and race diversity, board size and company performance.

4.5. Sampling technique

In deciding on which sampling methodology to utilise, consideration of two fundamental sample characteristics, namely the size and nature of the sample, are observed. Probability sampling, as defined by Saunders & Lewis (2012), consists of three methods, specifically simple random sampling, systematic random sampling and stratified random sampling, and should be used when selecting a sample at random from an entire universe or population.

In an attempt to avert, as far as possible, any manner of bias and to attain maximum reliance on the outcomes, the sampling technique most applicable here would be that of stratified random sampling. This choice is justified when assessing the nature of the research and it necessitated the sampling frame to be divided into the relevant strata, that is, JSE ranked companies stratified based on market capitalisation, divided into the top 40 ranked companies, 41-100 ranked companies, 101-160 ranked companies and the remainder.

Once the sample was divided into the applicable strata, simple random sampling was then applied to the sample. This necessitated a sample frame, being the set of research subjects that stand an equal chance of being selected for the sample (Saunders & Lewis, 2012) and relevant to this study, all the actively trading companies on the JSE for the 2014 financial year. The total sample size for this study is 130.

4.6. Data collection

Data collection commenced upon receipt of ethical clearance. The research in question was based on the interrogation and mining of secondary data. According to Boaduo (2011), researchers make use of data amassed by various other researchers, and when sourcing secondary resources such as a population census for example, or possibly even reports or documents, be they from published or unpublished sources, data of this description was exploited, in the broad sense of the term and, constituted secondary data.

The study was conducted for a single financial year, being the specific listed company's year-end date for 2014. The required data was sourced from secondary databases containing specific historical stock market and financial data provided by the JSE and McFas databases, and then combined along with company information, specifically around director demographic information which was acquired via publicly available data sources, to achieve the desired outputs.

The required output above needed to facilitate the inputs necessary for the performance analyses. These included demographic data for directors, being the count of nationality, gender and race, the number of directors, that is board size, and financial data consisting of the year-end date, market capitalisation, profit attributable to ordinary shareholders, total equity, total assets, the number of shares in issue, closing share price, market equity and total debt. The financial data, that is, numerical data, lends itself to being statistically manipulated, analysed and interpreted.

4.7. Data analysis

The data were analysed using the IBM SPSS statistics 22 program. When evaluating the proposed hypotheses, statistical inferences for the five hypotheses were made using Spearman's Rank order correlation (rho) which was run against both groups in order to determine if/how the variables are related (Field, 2013).

The independent or predictor variables used in the study were nationality, gender, race and board size. The dependent variable was company performance. These variables are relevant in that the demographic makeup of board directors defines the levels of diversity relevant to this study and board size in considered the enabler of that diversity. Company performance denotes a measure which can be analysed and assessed in order to determine the effects of board diversity on those companies as well as the impact of board size on that performance.

Initial descriptive analysis was performed to obtain an overall understanding of the variables of the sample. All the variables were tested for normality due to the fact that the distribution of the data determines the type of tests used for analysis. The distribution of data determines whether parametric or non-parametric tests are to be used. The distribution of the data was tested using the Kolmogorov-Smirnov test, as the sample size is greater than 50 (Pallant, 2010).

For the first hypothesis, correlation analysis was used to describe the strength and direction, either positive or negative, of the relationship between nationality diversity and the performance measures including ROA, ROE and Tobin's q individually. The Spearman's Rank Order Correlation (rho) was used since the data was not normally distributed. Simple regression analysis was then performed to investigate the predictive power of nationality diversity on the performance measures. Regression analysis could be used in this case as the sample size, being greater than 50, was considered large enough (Pallant, 2010).

For the second hypothesis, correlation analysis was used to describe the strength and direction of the relationship between gender diversity and the performance measures including ROA, ROE and Tobin's q individually. The Spearman's Rank Order Correlation (rho) was used since the data was not normally distributed. Simple regression analysis was then performed to investigate the predictive power of gender diversity on the performance measures. Regression analysis could be used in this case as the sample size, being greater than 50, was considered large enough (Pallant, 2010).

For the third hypothesis, correlation analysis was used to describe the strength and direction of the relationship between race diversity and the performance measures including ROA, ROE and Tobin's q individually. The Spearman's Rank Order Correlation (rho) was used since the data was not normally distributed. Simple regression analysis was then performed to investigate the predictive power of race diversity on the performance measures. Regression analysis could be used in this case as the sample size, being greater than 50, was considered large enough (Pallant, 2010).

For the fourth hypothesis, standard multiple regression analysis was then performed to test the impact of the diversity measures of nationality, gender and

race, as a single combined unit of analysis, on the performance measures, including ROA, ROE and Tobin's q individually. Regression analysis was used in this case as the sample size, being greater than 50 at a combined company level, was large enough (Pallant, 2010).

For the fifth hypothesis, correlation analysis was used to describe the strength and direction of the relationship between board size and the performance measures including ROA, ROE and Tobin's q individually. The Spearman's Rank Order Correlation (rho) was used as the data was not normally distributed. Simple regression analysis was then performed to investigate the predictive power of the size of the board on the performance measures. Regression analysis could be used in this case as the sample size, being greater than 50, was considered large enough (Pallant, 2010).

4.8. Limitations

The research design of this study was subject to the following limitations;

- The research aims to define the relationships between nationality, gender and racial diversity of boards, as well as board size and company performance, and does not consider all factors that may influence this relationship.

- The period under review is a snapshot in time and concerns one year only. An analyses of additional periods may provide a more comprehensive and broader insight of the results obtained herein.

- The study is restricted to companies listed on the South African stock exchange and may not accurately be representative of global trends.

- Not all companies have their financial year-end simultaneously. Therefore, certain anomalies that would be experienced equally by all companies being measured on the same timeline may now have been negated.

- The definition of nationality, gender and race diversity within the study is limited.

- Other board demographics such as education and tenure are not considered.

- The research project focuses on board composition and does not account for the effectiveness of the board itself, which would influence the results of the study.

- The nature of the study is descriptive and does not explain how or why diversity and size influences financial performance.

- Audited financial results do not ensure complete standardisation of published results as accounting policies and interpretations thereof can differ from company to company and may have a material impact.

4.9. Conclusion

The above research methodology aims to produce a robust architecture for the process required to adequately address the research hypothesis. Consideration of focal research areas and the motivation for the approach was defined, and the limitations of the study have been identified.

Chapter 5 will detail the results obtained using the defined methodology, with the statistical analyses of independent and dependant variables. The ability to appropriately address the research hypotheses is also assessed.

Chapter 5 - Results

5.1. Introduction

This chapter presents the findings of this research, interpreting the relationships between the aspects of board diversity and company performance. The first section presents the descriptive statistics of the diversity measure proxies, gender, race and nationality, and the performance measure variables, ROA, ROE and Tobin's q. The second section presents the statistical outputs from the correlation and regression analysis. These sections are further sub-divided by JSE ranking; companies in the top 40, 41-100, 101-160 and the balance of companies (The Rest).

The frequency data analysis was derived from 130 companies listed on the JSE and the variables considered for the research include gender (female), race (non-white) and nationality (non-South African). The purpose of this data analysis is to have a clear understanding of how diversity impacts the financial performance of the 130 JSE listed companies in question.

5.2. Findings from the data

5.2.1. Descriptive statistics

5.2.1.1. Total combined companies

The table below presents the frequency findings for the total combined companies that took part in this research. The analysis shows that, of all companies that participated in the study, the average amount of female board member representation of a JSE listed company was 17.8548%. Female inclusion was still overlooked as the Mode indicates, and was at 0.00%. Of the 130 companies that formed part of the study, the minimum value indicates that the male board member component consists of at least 50.00% of the board, while the minimum for females was at 0.00%. The maximum indicates that the total combined companies, at most, have a board comprising of 50.00% females.

Table 1: Total companies - Gender descriptive statistics

	Male Members	Female members
Count	130	130
Mean	82.1452	17.8548
Median	81.1000	18.9000
Mode	100.00	0.00
Std. Deviation	11.86691	11.86691
Minimum	50.00	0.00
Maximum	100.00	50.00

The table below depicts the overall race frequency analysis of the 130 identified listed companies and indicates that, on average, the board consists of 65.6197% white directors with 34.3801% being non-white directors. The mode for both non-white and white was 50.00%. The minimum for the two race groups was 0.00%. The maximum for both race groups was 100%.

Table 2: Total companies - Race descriptive statistics

	Non-white	White
Count	130	130
Mean	34.3801	65.6197
Median	30.7700	69.2300
Mode	50.00	50.00
Std. Deviation	20.36143	20.36185
Minimum	0.00	0.00
Maximum	100.00	100.00

The table below denotes the overall frequency data for diversity based on nationality which had 130 participants involved in the study. The mean indicates that 17.6142% of board members are non-South African while the remaining 82.3858% are South African. The median, however, gives a more meaningful figure, showing non-South Africans having board representation of 8.8950% and South Africans representing the remaining 91.1050%. The mode for South Africans was 100% while it was 0.00% for non-South Africans. The maximum was 100% for both non-South Africans and South Africans.

Table 3: Total companies - Nationality descriptive statistics

	Non-South African	South African
Count	130	130
Mean	17.6142	82.3858
Median	8.8950	91.1050
Mode	0.00	100.00
Std. Deviation	24.13104	24.13104
Minimum	0.00	0.00
Maximum	100.00	100.00

The table below shows that, on average, the board size consisted of 11.23 members. The most frequent number of board members was 10. The companies in the study had a maximum of 23 members and a minimum of 3 members.

Table 4: Total companies – Board size descriptive statistics

	Board Size
Count	130
Mean	11.23
Median	11.00
Mode	10
Std. Deviation	3.755
Minimum	3
Maximum	23

The table below displays the frequency data for the financial measures with a count of 130. The ROA mean was 6.12; the ROE mean was 13.956 while the Tobin's q mean was 2.367. The mode for ROA was 1.00; the mode for ROE was 7.39 and 0.244 for the Tobin's q. The minimum was -33.00 for the ROA; -38.44 for the ROE and 0.244 for the Tobin's q. The maximum ROA was 56.00 and the ROE was relatively high at 98.31, with the Tobin's q at 33.799.

Table 5: Total companies – Performance measure descriptive statistics

	ROA	ROE	Tobin's q
Count	130	130	130
Mean	6.1231	13.9555	2.36679
Median	5.0000	12.9436	1.42983
Mode	1.00	7.39	.244[a]
Std. Deviation	8.71158	16.81156	3.853417
Minimum	-33.00	-38.44	.244
Maximum	56.00	98.31	33.799

5.2.1.2. Top 40 ranked companies

The table below shows that the frequency data for the JSE Top 40 ranked companies had 40 participants in the study. The mean for female boardroom representation was 19.1625%. The mode for female representation on the board of the Top 40 JSE ranked companies was 25.00%. The minimum for females was 0.00% while the minimum for males was 61.54%. The maximum for female board representation was 38.46% while the maximum for the males was 100%.

Table 6: **Top 40 ranked companies - Gender descriptive statistics**

	Male Members	Female members
Count	40	40
Mean	80.8375	19.1625
Median	78.7600	21.2400
Mode	75.00	25.00
Std. Deviation	9.52721	9.52721
Minimum	61.54	0.00
Maximum	100.00	38.46

The table below shows that the count for the race frequency data was 40. The mean for non-whites was 32.1743% and whites have a 67.8258% representation. The mode for non-whites was 0.00% while for the white race was 75.00%. The minimum for non-white representation was 0.00% while the whites was a minimum representation of 30.77%. The maximum board representation for non-white was 69.23% and the white race component was at a maximum of 100%.

Table 7: **Top 40 ranked companies - Race descriptive statistics**

	Non-white	White
Count	40	40
Mean	32.1743	67.8258
Median	30.7700	69.2300
Mode	.00[a]	75.00[a]
Std. Deviation	19.24363	19.24388
Minimum	0.00	30.77
Maximum	69.23	100.00

The table below illustrates that the nationality frequency data had a count of 40 for the study. The mean for non-South Africans was 33.0060% and 66.9940% for South Africans. The mode for non-South Africans was 0.00% and 100% for South Africans. The minimum was 0.00% for both non-South Africans and South Africans; the maximum was 100% for both non-South African and South Africans.

Table 8: **Top 40 ranked companies - Nationality descriptive statistics**

	Non-South African	South African
Count	40	40
Mean	33.0060	66.9940
Median	21.2800	78.7200
Mode	0.00	100.00
Std. Deviation	31.36010	31.36010
Minimum	0.00	0.00
Maximum	100.00	100.00

The table below shows that on average, the board size was 13.80 members. The most frequent number of board members was 13. The companies in the study had a maximum of 23 members and a minimum of 7 members.

Table 9: **Top 40 ranked companies - Board size descriptive statistics**

	Board Size
Count	40
Mean	13.80
Median	13.00
Mode	13
Std. Deviation	3.674
Minimum	7
Maximum	23

The table below was the frequency data for the financial measures and had a count of 40. The ROA mean was 7.9500; the ROE mean was 17.3934 while the Tobin's q mean was 3.70340. The mode for ROA was 1.00; the mode for ROE was -7.81, and was 0.997 for the Tobin's q. The minimum was -4.00 for the ROA; -7.81 for the ROE and 0.997 for the Tobin's q. The maximum ROA was 28.00 and the ROE was relatively high at 55.78, with the Tobin's q at 33.7999.

Table 10: **Top 40 ranked companies - Performance measures descriptive statistics**

	ROA	ROE	Tobin's q
Count	40	40	40
Mean	7.9500	17.3934	3.70340
Median	6.0000	15.3298	1.85241
Mode	1.00	-7.81[a]	.977[a]
Std. Deviation	7.65925	14.84551	6.036522
Minimum	-4.00	-7.81	.977
Maximum	28.00	55.78	33.799

5.2.1.3. 41-100 ranked companies

The table below shows that the frequency count for the 41-100 ranked companies listed on the JSE was 35. The mean for female board representation was 20.7157%. The median was 20.00% for females; the mode for females was 0.00%. The minimum for females was 0.00% while the minimum for males was 57.14%. The maximum for female representation was 42.86% while the male maximum was 100%.

Table 11: 41-100 ranked companies - Gender descriptive statistics

	Male Members	Female members
Count	35	35
Mean	79.2843	20.7157
Median	80.0000	20.0000
Mode	66.67[a]	.00[a]
Std. Deviation	11.44893	11.44893
Minimum	57.14	0.00
Maximum	100.00	42.86

The table below shows that the count for the race was 35. The mean for the non-white race was 37.1263% and the white race was 62.8740%. The mode for both non-white and white races was 50.00%. The minimum for non-white was 0.00% while 16.67% for the white race. The maximum for non-white was 83.33% and white was 100%.

Table 12: 41-100 ranked companies - Race descriptive statistics

	Non-white	White
Count	35	35
Mean	37.1263	62.8740
Median	33.3300	66.6700
Mode	50.00	50.00
Std. Deviation	20.02751	20.02808
Minimum	0.00	16.67
Maximum	83.33	100.00

The table below shows that the nationality count for the frequency data was 35. The mean for non-South Africans was 15.4040% and 84.5960% for South Africans. The mode was 0.00% for non-South Africans and 100% for South Africans. The minimum was 0.00% for non-South Africans and 30.00% for South Africans. The maximum for non- South Africans was 70.00% and 100% for South African.

Table 13: 41-100 ranked companies - Nationality descriptive statistics

	Non-South African	South African
Count	35	35
Mean	15.4040	84.5960
Median	9.0900	90.9100
Mode	0.00	100.00
Std. Deviation	19.02457	19.02457
Minimum	0.00	30.00
Maximum	70.00	100.00

The table below depicts that on average, the board size was 11.91 members. The most frequent number of board members was 10. The companies in the study had a maximum of 21 members and a minimum of 3 members.

Table 14: 41-100 ranked companies – Board size descriptive statistics

	Board Size
Count	35
Mean	11.91
Median	12.00
Mode	10
Std. Deviation	3.584
Minimum	3
Maximum	21

The table below denotes the frequency data for the financial measure was a count of 15. The ROA mean was 6.91; the ROE mean was 17.41 while the Tobin's q mean was 2.16. The mode for ROA was 6.00; the mode for ROE was -5.56 and 0.646 for the Tobin's q. The minimum was -4.00 for the ROA; -5.56 for the ROE and 0.646 for the Tobin's q. The ROA maximum was 30.00 while ROE was highest at 91.12 and Tobin's q maximum was 7.432

Table 15: 41-100 ranked companies - Performance measure descriptive statistics

	ROA	ROE	Tobin's q
Count	35	35	35
Mean	6.9143	17.4127	2.16228
Median	6.0000	15.7893	1.58122
Mode	6.00	-5.56[a]	.646[a]
Std. Deviation	6.26555	15.30428	1.605334
Minimum	-4.00	-5.56	.646
Maximum	30.00	91.12	7.432

5.2.1.4. 101-160 ranked companies

The table below shows the gender frequency count was 15 for the Top 101-160 ranked companies. The mean for males was 84.3540% and 15.6460% for females. The mode for males was 76.92% while females are 0.00%. The minimum for males was 70.00% and 0.00% for females. The maximum for male board representation was 100% and 30.00% for woman.

Table 16: 101-160 ranked companies - Gender descriptive statistics

	Male Members	Female members
Count	15	15
Mean	84.3540	15.6460
Median	84.6200	15.3800
Mode	76.92[a]	.00[a]
Std. Deviation	9.21556	9.21556
Minimum	70.00	0.00
Maximum	100.00	30.00

The table below shows that the count for the race frequency data was 15. The mean for non-whites was 33.2767% and 66.7220% for the white race. The mode for non-white was 20.00%, which was low compared to the 58.33% of the white race. The minimum for non-white was 0.00% and 20.00% for the white race. The maximum for non-white was 80% and maximum for white was 100%.

Table 17: 101-160 ranked companies - Race descriptive statistics

	Non-white	White
Count	15	15
Mean	33.2767	66.7220
Median	30.7600	69.2300
Mode	20.00	58.33[a]
Std. Deviation	18.61950	18.61973
Minimum	0.00	20.00
Maximum	80.00	100.00

The table below shows the nationality count for the frequency data was 15. The mean for non-South Africans was 6.9733% and 93.0267% for South African. The mode was 0.00% for non-South Africans and 100% for South Africans. The minimum was 0.00% for non-South Africans and 63.64% for South Africans. The maximum for non-South Africans was 36.36% and 100% for South African.

Table 18: 101-160 ranked companies - Nationality descriptive statistics

	Non-South African	South African
Count	15	15
Mean	6.9733	93.0267
Median	0.0000	100.0000
Mode	0.00	100.00
Std. Deviation	11.06762	11.06762
Minimum	0.00	63.64
Maximum	36.36	100.00

The table below shows that on average, the board size was 10.40 members. The most frequent number of board members was 10. The companies in the study had a maximum of 13 members and a minimum of 5 members.

Table 19: 101-160 ranked companies - Board size descriptive statistics

	Board Size
Count	15
Mean	10.40
Median	11.00
Mode	10
Std. Deviation	2.354
Minimum	5
Maximum	13

The table below presents the frequency data for the financial measure was a count of 15. The ROA mean was 3.5333; the ROE mean was 9.1905 while the Tobin's q mean was 2.45729. The mode for ROA was 3.00; the mode for ROE was -33.78 and 0.650 for the Tobin's q. The minimum was -18.00 for the ROA; -33.78 for the ROE and 0.650 for the Tobin's q. The ROA maximum was 10.00 while ROE was highest at 31.62 and Tobin's q maximum was 17.963

Table 20: 101-160 ranked companies - Financial measure descriptive statistics

	ROA	ROE	Tobin's q
Count	15	15	15
Mean	3.5333	9.1905	2.45729
Median	4.0000	10.9710	1.35381
Mode	3.00[a]	-33.78[a]	.650[a]
Std. Deviation	6.80196	14.68861	4.305975
Minimum	-18.00	-33.78	.650
Maximum	10.00	31.62	17.963

5.2.1.5. The Rest ranked companies

The table below shows the frequency data for the remaining JSE ranked companies, which consisted of 40 participants in the study. The mean for female boardroom representation was 14.8720%. The mode for female representation on the board of the remaining ranked companies was 0.00%. The minimum for females was 0.00% while the minimum for males was 50.00%. The maximum for

female board representation was 50.00% while the maximum for the male was 100%.

Table 21: The Rest ranked companies - Gender descriptive statistics

	Male Members	Female members
Count	40	40
Mean	85.1280	14.8720
Median	86.6050	13.3950
Mode	100.00	0.00
Std. Deviation	14.49734	14.49734
Minimum	50.00	0.00
Maximum	100.00	50.00

The table below shows that the count for the race frequency data was 40. The mean for non-white board representation was 34.5968% and white race have a 65.4028% representation. The mode for both non-white race and white race was 50.00%. Both non-white and whites have a minimum representation of 0.00%. The maximum board representation for non-white and white members was 100%.

Table 22: The Rest ranked companies - Race descriptive statistics

	Non-white	White
Count	40	40
Mean	34.5968	65.4028
Median	31.6650	68.3350
Mode	50.00	50.00
Std. Deviation	22.68497	22.68554
Minimum	0.00	0.00
Maximum	100.00	100.00

The table below shows the nationality frequency data had a count of 40 for The Rest ranked companies in the study. The mean for non-South Africans was 8.1468% and 91.8533% for South Africans. The mode for non-South Africans was 0.00% and 100% for South Africans. The minimum was 0.00% for non-South Africans and 37.50.00% for South Africans; the maximum was 62.50.00% for non-South African and 100% for South Africans.

Table 23: The Rest ranked companies - Nationality descriptive statistics

	Non-South African	South African
Count	40	40
Mean	8.1468	91.8533
Median	0.0000	100.0000
Mode	0.00	100.00
Std. Deviation	14.15228	14.15228
Minimum	0.00	37.50
Maximum	62.50	100.00

The table below shows that the frequency measure count of The Rest ranked companies was 40 and on average, the board size consisted of 8.38 members. The most frequent number of board members was 9. The companies in the study had a maximum of 14 members and a minimum of 5 members.

Table 24: The Rest ranked companies – Board size descriptive statistics

	Board Size
Count	40
Mean	8.38
Median	8.00
Mode	9
Std. Deviation	2.034
Minimum	5
Maximum	14

The table below presents the frequency data for the financial measure and was a count of 40. The ROA mean was 4.5750; the ROE mean was 9.2795 while the Tobin's q mean was 1.17521. The mode for ROA was 2.00; the mode for ROE was -38.44 and 0.244 for the Tobin's q. The minimum was -33.00 for the ROA; -38.44 for the ROE and 0.244 for the Tobin's q. The maximum ROA was 56.00 and the ROE was relatively high at 98.31 and the Tobin's q was 3.299.

Table 25: The Rest ranked companies - Performance measure descriptive statistics

	ROA	ROE	Tobin's q
Count	40	40	40
Mean	4.5750	9.2795	1.17521
Median	4.0000	8.9989	.92832
Mode	2.00	-38.44[a]	.244[a]
Std. Deviation	11.51117	19.46302	.666225
Minimum	-33.00	-38.44	.244
Maximum	56.00	98.31	3.299

5.2.2. Statistical analysis

The Spearman's Rank Order Correlation (rho) was used to test the existence of significant relationships between the diversity variables, board size and the performance measures. This was due to the fact that the data was not normally distributed. Simple regression was then used to test the impact of the individual diversity measures on the performance measures. Multiple regression was then used to test the impact of the combination of the diversity measures on the performance measures.

5.2.2.1. Test for Normality

The Kolmogorov-Smirnov test was used to test the distribution of the variables. From the table below, it can be concluded that all the variables tested are not normally distributed, as the p-values are less than 0.05.

Table 26: Test for normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total_Members	0.105	130	0.001	0.962	130	0.001
Male	0.103	130	0.002	0.961	130	0.001
Female	0.103	130	0.002	0.961	130	0.001
Non-White	0.093	130	0.008	0.971	130	0.006
White	0.093	130	0.008	0.971	130	0.006
Non_RSA	0.233	130	0.000	0.748	130	0.000
RSA	0.233	130	0.000	0.748	130	0.000
ROA	0.171	130	0.000	0.824	130	0.000
ROE	0.194	130	0.000	0.823	130	0.000
Tobins_Q	0.309	130	0.000	0.388	130	0.000

5.2.3. Test for significant relationships

5.2.3.1. Total combined companies

There was a weak negative correlation between female board members and ROA, r=-.053. ROE was a weak positive correlation to female board members, .where r=.069 at medium. The Tobin's q shows a weak to absent correlation where r=-.009. There was no significance in the correlations.

The correlation for non-white was: a weak negative correlation for ROA where r=-.075, ROE was a weak negative correlation where r=-.033, there was no significance in the correlations of ROA and ROE. Tobin's q was a significant weak negative correlation where r=-.168*.

The overall correlation for non-South Africans was a weak negative ROA where r=-.065, the ROE correlation was a weak negative where r=-.073, there was no significance in the correlations of ROA and ROE. Tobin's q correlation was a significant weak positive correlation where r=.249**.

The correlation for board size was: a positive weak correlation where r=.004 with no significance; the ROE was a significant weak positive correlation where

r=.160* and the Tobin's q also was a significant weak positive correlation where r=.241.

Table 27: Total combined companies – Test for correlation

	ROA	ROE	Tobin's q
Female	-.053	.069	-.009
Non-white	-.075	-.033	-.168*
Non- South African	-.065	-.073	.249**
Board Size	.004	.160*	.241**

*p < 0.05 (1-tailed)
**p < 0.01 (1-tailed)

5.2.3.2. Top 40 ranked companies

The correlation for female board membership among the top 40 JSE ranked companies had the following: a weak negative ROA where r=-.146; ROE was a weak negative correlation where r=-.022 and Tobin's q was a weak negative correlation where r=-.013. There was no significance in the correlations.

The non-white race was the following correlations: ROA was a weak negative correlation where r=-.183; ROE was a weak negative correlation where r=-.051, there was no significance in the correlations of ROA and ROE. Tobin's q was a significant weak negative correlation where r=-.291.

Non-South African correlation was as follows: ROA was a weak negative correlation where r=-.089; ROE was a weak positive correlation where r=.075 and Tobin's q was a weak negative correlation where r=-.118. There was no significance in the correlations.

The correlation for Board Size was: ROA was a weak negative correlation where r=-.191; ROE was a weak negative correlation where r=-.207 and Tobin's q was a weak positive correlation. There was no significance in the correlations.

Table 28: Top 40 ranked companies – Test for correlation

	ROA	ROE	Tobin's q
Female	-.143	-.022	-.013
Non-white	-.183	-.051	-.291*
Non- South African	-.089	-.207	.140
Board Size	-.191	.008	-.095

*p < 0.05 (1-tailed)
**p < 0.01 (1-tailed)

5.2.3.3. 41-100 ranked companies

The correlation data of female board members of the 41-100 ranked companies are: ROA was a weak negative correlation where r=-.183; ROE was a weak positive correlation where r=.038 and Tobin's q was a weak negative correlation where r=-184. There was no significance in the correlations.

Non-white was the following correlations: ROA was a weak positive correlation where r=-.039; ROE was a weak positive correlation where r=.016 and Tobin's q was a weak negative correlation where r=-.202. There was no significance in the correlations.

Non-South Africans have the following correlations: ROA was a weak negative correlation where r=-.091; ROE was a weak negative correlation where r=-.248 and Tobin's q was a weak positive correlation where r=.254. There was no significance in the correlations.

Total member correlations are as follows: ROA was a weak negative correlation where r=-.130; ROE was a weak negative correlation where r=.044 and Tobin's q was a weak negative correlation where r=-.184. There was no significance in the correlations.

Table 29: 41-100 ranked companies – Test for correlation

	ROA	ROE	Tobin's q
Female	-.183	.038	-.184
Non-white	.039	.016	-.202
Non- South African	-.091	-.248	.254
Board Size	-.130	-.044	-.184

*p < 0.05 (1-tailed)
**p < 0.01 (1-tailed)

5.2.3.4. 101-160 ranked companies

The correlation data of female board members of the top 101-160 companies are: ROA was a weak negative correlation where r=-.098; ROE was a weak negative correlation where r=-.020 and Tobin's q was a weak negative correlation where r=-107. There was no significance in the correlations.

Non-white was the following correlations: ROA was a medium negative correlation where r=-.403; ROE was a medium negative correlation where r=.370 and Tobin's q was a weak negative correlation where r=-.256. There was no significance in the correlations.

Non-South African was the following correlations: ROA was a medium negative correlation where r=-.366; ROE was a medium negative correlation where r=-.371 and Tobin's q was a medium positive correlation where r=.326. There was no significance in the correlations.

Total member correlations are as follows: ROA was a medium negative correlation where r=-.406; ROE was a weak negative correlation where r=.249 and Tobin's q was a weak negative correlation where r=-.193. There was no significance in the correlations.

Table 30: 101-160 ranked companies – Test for correlation

	ROA	ROE	Tobin's q
Female	-.098	-.020	-.107
Non-white	-.403	-.370	-.256
Non- South African	-.366	-.371	.326
Board Size	-.406	-.249	-.193

*p < 0.05 (1-tailed)
**p < 0.01 (1-tailed)

5.2.3.5. The Rest ranked companies

For The Rest ranked companies, the correlation for female board members was the following: a weak positive ROA where r=-.019; ROE was a weak positive correlation where r=-.038 and Tobin's q was a weak negative correlation where r=-.075. There was no significance in the correlations.

The non-white race was the following correlations: ROA was a weak positive correlation where r=.044; ROE was a weak negative correlation where r=.022, Tobin's q was a weak negative correlation where r=.015. There was no significance in the correlations.

The non-South African correlation was as follows: ROA was a weak negative correlation where r=-.173; ROE was weak negative correlation where r=-.134 and Tobin's q was a weak negative correlation where r=-.039. There was no significance in the correlations.

The correlation for Board Size was: ROA was a weak negative correlation where r=-.016; ROE was a weak negative correlation where r=-.037 and Tobin's q was a weak positive correlation where r=.113. There was no significance in the correlations.

Table 31: The Rest ranked companies – Test for correlation

	ROA	ROE	Tobin's q
Female	.019	.038	-.075
Non-white	.044	-.022	-.015
Non- South African	-.173	-.134	-.039
Board Size	-.016	-.037	.113

*p < 0.05 (1-tailed)
**p < 0.01 (1-tailed)

5.2.4. Test for the Impact of diversity

5.2.4.1. Non-South African board members

A simple regression was performed to assess the impact of the percentage of non-South African board members on the financial measures. The ANOVA p-values for non-South African board members on ROA and ROE are greater than .05 indicating that the models do not have strong predictive power and are statistically insignificant. The ANOVA p-values for Non-South African board members on the Tobin's q was less than .05 indicating that the model was strong predictive power and was statistically significant with beta=.445 and explaining 19.8% of the variance.

Table 32: Non-South African board members – Regression test

	R Squared	ANOVA p-value	BETA
ROA	.000	.948[b]	-.006
ROE	.000	.887[b]	-.013
Tobin's q	.198*	.000[b]	.445

5.2.4.1. Female board members

A simple regression test was used to assess the impact on the percentage of female board members on the financial measures. The ANOVA p-values for female board member on ROA, ROE and Tobin's q are greater than .05 indicating that the models do not have strong predictive power and are statistically insignificant.

Table 33: Female board members – Regression test

	R Squared	ANOVA p-value	BETA
ROA	.001	.752[b]	-.028
ROE	.014	.181[b]	.118
Tobin's q	.017	.139[b]	-.130

5.2.4.2. Non-white board members

A simple regression was performed to assess the impact of the percentage of non-white board member on the financial measures. The ANOVA p-values for black board member on ROA and ROE are greater than .05 indicating that the models do not have strong predictive power and are statistically insignificant. The ANOVA p-values for non-white board member on the Tobin's q was less than .05 indicating that the model was strong predictive power and was statistically significant with beta=-.280 and explaining 7.8% of the variance.

Table 34: Non-white board members – Regression test

	R Squared	ANOVA p-value	BETA
ROA	.005	.413	-.072
ROE	.001	.679	-.037
Tobin's q	.078*	.001	-.280

5.2.4.3. Board size

A simple regression test was conducted to gauge the impact of the board size against financial measures. The ANOVA p-values for board size on ROA, ROE and Tobin's q are greater than .05 indicating that the models do not have strong predictive power and are statistically insignificant.

Table 35: Board size - Regression test

	R Squared	ANOVA p-value	BETA
ROA	.000	.939[b]	-.007
ROE	.004	.461[b]	.065
Tobin's q	.015	.160[b]	.124

5.2.5. Combination of demographic diversity measures

5.2.5.1. Effect on ROA

Multiple regression was used to assess the ability of the combination of the diversity measures; female (gender), Non-white (race) and Non-South African (nationality) to predict the level of ROA. The ANOVA p-value for the combination of demographic diversity measures on ROA was greater than .05 indicating that the model does not have strong predictive power and was statistically insignificant.

Table 36: Demographic diversity combination board members – Multiple regression test on ROA

	ANOVA p-value	N	df	F	R SQUARE
ROA	.843	130	4	.275	.007

When assessing whether each of the diversity measures make a statistically significant unique contribution to the model. The results show that none of the diversity measures make a unique statistically significant contribution to predicting ROA, since all the p-values are greater than .05.

Table 37: Demographic diversity combination board members – Regression assessment on ROA

	P-VALUE	BETA
Females	.808	.027
Non-White	.397	-.097
Non-South African	.719	-.034

5.2.5.2. Effect on ROE

Multiple regression was used assess the ability of the combination of the diversity measures; female (gender), non-white and non-South African (nationality) to predict the level of ROE. The ANOVA p-value for the combination of demographic diversity measures on ROE was greater than .05 indicating that the model does not have strong predictive power and was statistically insignificant.

Table 38: Demographic diversity combination board members – Multiple regression test on ROE

	ANOVA p-value	N	df	F	R SQUARE
ROE	.237	130	4	1.430	.033

When assessing whether each of the diversity measures make a statistically significant unique contribution to the model, the results show that only one of the diversity measure makes a unique statistically significant contribution to predicting ROE, namely females, with a p-value less than .05. The beta values indicate that female (beta=.241) was a positive influence on ROE.

Table 39: Demographic diversity combination of board members – Regression assessment on ROE

	P-VALUE	BETA
Females	.028	.241
Non-white	.119	-.177
Non-South African	.410	-.077

5.2.5.3. Effect on Tobin's q

Multiple regression was used assess the ability of the combination of the diversity measures; female (gender), non-white (race) and non-South African (nationality) to predict the level of Tobin's q. The ANOVA p-value for the combination of demographic diversity measures on the Tobin's q was less than .05 indicating that the model was strong predictive power and was statistically significant, R

squared = .225, F(2,130) = 9.074, p< .000. The model as a whole explains 22.5% of the variance in the Tobin's q.

Table 40: Demographic diversity combination board members – Multiple regression test on Tobin's q

	ANOVA p-value	N	df	F	R SQUARE
Tobin's q	.000	130	4	12.175	.225

When assessing whether each of the diversity measures make a statistically significant unique contribution to the model, the results show that one of the diversity measures makes a unique statistically significant contribution to predicting the Tobin's q, namely non-South African, since the p-value was less than .05. The beta value indicate that non-South African (beta=.406) was a positive impact on the Tobin's q.

Table 41: Demographic diversity combination of board members – Regression assessment on Tobin's q

	P-VALUE	BETA
Females	.592	-.053
Non-white	.206	-.129
Non-South African	.000	.406

5.3. Conclusion

This chapter presented the findings from the statistical analysis of the data presented for interrogation as per the robust analysis framework developed in chapter 4. The next chapter discusses in detail the results drawn from this chapter with specific reference to the literature reviewed in chapter two.

Chapter 6 – Discussion

6.1. Introduction

This chapter is structured in a manner conducive to discuss and deliberate the data findings according to the hypotheses as tested. The research findings are discussed in-depth, outlining the interpretation and implications of the findings. The research outcomes are compared and contrasted to prior academic studies already undertaken by my predecessors. The array of variables analysed enables the full comprehension of how each variable affects the research outcome and are considered in terms of the research objectives defined in chapter 1 above.

6.2. Analysis consideration

Data reliability is paramount in achieving dependable conclusions drawn from the analysis thereof and allows for repeatability. The structure of the interrogation provides the most valuable contribution to that analysis.

The data was compiled with the intention of allowing the analyses of the independent and dependent variables, both separately and with various permutations thereof. The attributes of diversity were categorised and the effect of board size, considered a key enabler of diversity (Daily, Johnson, Ellstrand, & Dalton, 1999) was also measured.

The data was further classified and analysed based on the company's market capitalisation at a specific point in time, common across all the firms in question. This facilitated the categorisation of companies into subdivisions including the Top 40, 41-100, 101-160, the remainder or The Rest, and the total combined group of companies based on market capitalisation.

This sanctioned a robust and dynamic data analysis, and in an endeavour to segment companies into more comparable entities, to partially neutralise the effect of resource availability on the board directorate construct, lent itself to an

enhanced comprehensive understanding of the outcomes. The effect of the financial resource impact on the board structure was then controlled and produced a reliable set of results.

Critical to the interpretation of the results, is the imperative understanding of the differences in financial measurements on firm performance, as these are indicative of how stakeholders assess and perceive a company. Accounting-based are historic measures and thereby purely objective and free of speculation, whereas market-based measures are both subjective and objective.

Accounting performance measures evaluate past performance and provides a backward outlook of the financial situation of a company (Pletzer et al., 2015). The accounting-based measures provided an objective review of the firm's performance (Arena et al., 2015).

Market-based ratios are used in forecasting the future performance of a company and measure investor confidence. Ultimately they value a company using certain calculations and these measures give rise to a subjective magnitude of the company's performance (Dezs & Ross, 2012). Investor behaviour and perceptions are reflected in stock market reactions (Hoffmann, Post, & Pennings, 2015, 2013), and these reactions have a substantial bearing on the attributes for the required measurements.

For the purpose of the results discussions in this chapter, investor sentiment along with actual performance is considered and discussed. ROA, ROE and Tobin's q represent these financial measures accordingly. Correlation testing was used to establish if relationships existed at all degrees of ranking stratifications (Field, 2013). Regression testing was applied to the total companies combined only, due to a limitation as a result of the sample size, to determine if the independent variables were predictors of result conclusions (Pallant, 2010).

6.3. Addressing Hypothesis 1

6.3.1. Nationality diversity

The alternate hypotheses for nationality diversity are as follows:

$H1a_A$: Diversity OF Board: Nationality, has a relationship with firm performance FP1<FP2
$H1b_A$: Diversity OF Board: Nationality, is a predictor of firm performance FP1<FP2

The first research hypothesis was formulated with the objective of ascertaining if having a nationality diverse company board had an impact on the financial performance of the company. The financial performance measures, ROA, ROE and Tobin's q were used to determine the impact of this diversity proxy.

The association of nationality diversity and company performance was firstly measured for the total companies combined followed by the stratified company groupings, using both accounting-based measures, that is ROA and ROE, and then by the market-based measure, Tobin's q.

6.3.2. Total combined companies results summation

6.3.2.1. Correlation analysis

6.3.2.1.1. Market-based measures

When scrutinising the effect of board nationality diversity, based on the total companies in unison, and the extent of the significance of the statistical relationship or correlation to performance, the findings for the market-based measure of Tobin's q indicated that there was a weak positive relationship between nationality diversity and financial performance. This relationship was considered statistically significant.

6.3.2.1.2. Accounting-based measures

When scrutinising the effect of board nationality diversity, based on the total companies in unison, and the extent of the significance of the statistical relationship or correlation to performance, the findings for nationality diversity were that the accounting-based measures, ROA and ROE's relationship to the company's financial performance yielded no statistically significant relationship.

6.3.2.2. Regression analysis

6.3.2.2.1. Market-based measures

The regression analysis results indicated that the impact of the non-South African board members produced a statistically significant and positive impact on the Tobin's q market-based measurement, with a beta value of .445, explaining 19.8% of the variance as depicted in Table 32**: Non-South African board members – Regression test** in chapter 5.

6.3.2.2.2. Accounting-based measures

The regression analysis results indicated that the impact of non-South African board members on the accounting-based measures, ROA and ROE were not statistically significant.

6.3.3. Stratified ranked companies results summation

6.3.3.1. Correlation analysis

6.3.3.1.1. Market-based measures

The results of the research indicate that when the companies were stratified into categories, specifically the Top 40, 41-100, 101-160 and The Rest, there was no significant relationship between the nationality diversity of a board and the market-based performance measure, Tobin's q.

6.3.3.1.2. Accounting-based measures

The results of the research indicate that when the companies were stratified into categories, specifically the Top 40, 41-100, 101-160 and The Rest, there was no significant relationship between the nationality diversity of a board and the accounting-based performance measures of ROA and ROE.

6.3.4. Discussion of results

When assessing the effect of nationality as a proxy for diversity at a total company level, the correlation and regression analyses were shown to be positive for the market-based measure of Tobin's q. This confirms that nationality diversity has both a positive relationship and is a positive predictor of financial performance. The accounting-based measures yielded a non-significant impact as did all results at a stratified company level.

Boards with diversity in nationality bring a superfluity of experience and acumen of various institutional environments enhancing decision making and thereby generating improved performance. Given that the future outlook for companies, with a board of directors who are nationality diverse in nature, are seen by stakeholders and analysts as being positive, this consistent with the findings of Embrick (2011), B. B. Nielsen & Nielson (2012) and Zainal et al. (2013).

The derived benefit of these nationality diverse board directorates is superior complex task solving and articulation of innovative solutions. Strategic decision making is epitomised by highly complex, uncertain and frequently unique situations in which nationality diversity arguably intensifies the comprehension and quality of those strategic decisions, as is evident in the representation of intensified company performance.

Business undertakings encompass the global economy, and a firm whose board construct is of a nationality diverse nature brings with it an understanding of varying operating environments and their citizens, whose culture and lifestyle ostensibly significantly contrast those of local environments (Jhunjhunwala &

Mishra, 2012), which avail themselves to positively impacting firm performance as is palpable in the results of the study.

Nationality diversity of a board is fundamental in the mix of board director's human capital characteristics. Nationality diversification has been proven to have a positive effect on a firm's financial performance, consistent with the findings of Rose et al. (2013) and Ujunwa (2012).

Masulis, Wang, & Xie (2012) stated that the presence of foreign directors on a board, with their international experience and background, brings with it value add to the firm. Companies exercising nationality diversity have been associated with traits such as profitability (Zainal et al., 2013), which the study affirms as true for each.

Masulis et al. (2012) proposed that obstacles relating to the foreignness of directors had an undesirable connotation. Explicitly, company governance is negatively impacted as a result of the deficiency of advisory and monitoring obligations, however this was not apparent in the results.

Darmadi (2011) and Kilic (2015) presented conflicting literature which found no evidence supporting a realised financial benefit based on the nationality diversification construct of a board, however the conclusions of this study are against these proclamations.

6.3.4.1. Hypothesis 1 concluding comments

In conclusion, this research has confirmed the overwhelming superiority of a nationally diverse board in comparison to boards of directors that are homogenous in structure. Hypothesis 4 reiterates these findings.

6.4. Addressing Hypothesis 2

6.4.1. Gender diversity

The alternate hypotheses for gender diversity are as follows:

$H2a_A$: Diversity OF Board: Gender, has a relationship with firm performance FP1<FP2
$H2b_A$: Diversity OF Board: Gender, is a predictor of firm performance FP1<FP2

The second research hypothesis was formulated to ascertain if gender diversity had any impact on the financial performance of a company. The financial performance measures, that is, ROA, ROE and Tobin's q, were used to determine the impact of this diversity proxy.

6.4.2. Total combined companies results summation

6.4.2.1. Correlation analysis

6.4.2.1.1. Market-based measures

When scrutinising the effect of board gender diversity, based on the total companies in unison, and the extent of the significance of the statistical relationship to performance, the findings for gender diversity were that the Tobin's q relationship to the company's financial performance yielded no statistically significant relationship.

6.4.2.1.2. Accounting-based measures

When scrutinising the effect of board gender diversity, based on the total companies in unison, and the extent of the significance of the statistical relationship to performance, the findings for gender diversity were that the ROA and ROE relationship to the company's financial performance yielded no statistically significant relationship.

6.4.2.2. Regression analysis

6.4.2.2.1. Market-based measures

The regression analysis results indicate that the impact of female board members on Tobin's q were not statistically significant.

6.4.2.2.2. Accounting-based measures

The regression analysis results indicate that the impact of female board members on ROA and ROE were not statistically significant.

6.4.3. Stratified ranked companies results summation

6.4.3.1. Correlation analysis

6.4.3.1.1. Market-based measures

The results from the disparate companies, that is the Top 40, 41-100,101-160 and The-rest, also indicate that there was no statistically significant relationship between the financial performance measure of Tobin's q and gender diversity.

6.4.3.1.2. Accounting-based measures

The results from the disparate companies, that is the Top 40, 41-100,101-160 and The Rest, also indicate that there was no statistically significant relationship between the financial performance measures of ROA and ROE and gender diversity.

6.4.4. Discussion of results

When evaluating the consequences of gender as a proxy for diversity in an isolated context, at both a total and stratified company level, the correlation and regression analyses were shown to be non-significant for the market-based

measure of Tobin's q as well as the accounting-based measures, ROA and ROE. This denotes gender diversity as having no relationship to, nor is a predictor of, financial performance.

Campbell & Vera (2010) state that the presence of females on the board of directors has become an increasingly high profile topic in recent years. Gender, as a board diversity attribute, was assessed to determine if this is a contributing factor towards superior company performance. The analyses outcomes being non-significant, did not produce evidence motivating the appointment of female directors to attain a diverse board construct, encompassing gender, consistent with the findings of Kilic (2015), Mori (2014), Pletzer et al. (2015), Rose et al. (2013) and Wachudi & Mboya (2012).

There is a proliferation in regulatory pressures on firms to conform with the requirements for an increased representation of females in senior positions (Chapple & Humphrey, 2014), in an attempt to balance the board directorate construct. The appointment of females to boards to fulfil quotas could potentially devalue female directorships (Du Plessis et al., 2014) and partially explain the non-significant company performance impact.

Consideration of the fact that in certain instances where there was a negative relationship between gender diversification and firm performance, legislatively imposed female quota representation on boards alters the experience, age and preferences of that board (Ahern & Dittmar, 2012). This may partially account for the analyses effects found in the study.

Given that financial performance is the dependent variable for this research, it has been argued that although financial performance may not be directly affected by board gender diversity, as corroborated in the study results, there is still a positive impact on governance as well as a reduction in risk taking (de Cabo et al., 2012). Although not evident in the findings of this analysis, investors have been shown to have a more favourable response to imperative corporate financial decisions made by companies with executive female representation (Huang & Kisgen, 2013).

It was demonstrated that female executives exercise more caution than their male counterparts when making significant corporate decisions (Huang & Kisgen, 2013; Levi et al., 2014) and are more risk averse (Srinidhi et al., 2011) which could partially explain the investor sentiment discussed above. This may moderately rationalise the slow uptake of gender diversification on boards (Zainal et al., 2013), even though, due to the perception that females are considered emotional, their ability to manage an organisation has been questioned (Julizaerma & Sori, 2012).

Campbell & Vera (2010), Du Plessis et al. (2014), Gul et al. (2011), Julizaerma & Sori (2012) and Liu et al. (2014) found empirical evidence demonstrating that a board with a female constituent realised an improvement in company performance, however, this section of the study is against those findings. There is conflicting research in which board gender diversity has presented evidence stating a negative effect on a firm's financial performance and again, based on the non-significant impact of the findings, the results are also against Darmadi (2011) and Ujunwa (2012).

With consideration of Table 1: Total companies - Gender descriptive statistics and Table 4: Total companies – Board size descriptive statistics in chapter 5, the descriptive statistics for gender and board size respectively, the average number of females on a board of directors for this study is two. Given the non-significant effect of gender diverse boards on company performance found in this section, prior research concerning the critical mass of female representation on boards may in part explain these outcomes.

"Critical mass" rather than the simple presence of women has an incremental benefit on firm performance" (Arena et al., 2015, p. 339). Torchia, Calabrò, & Huse (2011) have established that the "critical mass" relating to the number of females serving on a board, is three. Therefore, three females is considered the minimum requirement to affect company performance (Liu et al., 2014), by exerting an influence on board processes, duties and working style. When legislative quotas are imposed, cognisance of the critical mass factor of female board representation must be heeded for efficacy.

6.4.4.1. Hypothesis 2 concluding comments

When comparing the gender and nationality diversity of the board, nationality was found to be more of a company success determinant than that of gender consistent with Rose et al. (2013). Although this research presents no correlation between female board representation and company performance in this section, prior studies prodigiously suggest the superiority of a gender diverse board in comparison to boards of directors that are homogenous in structure.

6.5. Addressing Hypothesis 3

6.5.1. Race diversity

The alternate hypotheses for race diversity are as follows:

$H3a_A$: Diversity OF Board: Race, has a relationship with firm performance FP1<FP2
$H3b_A$: Diversity OF Board: Race, is a predictor of firm performance FP1<FP2

The third research hypothesis' purpose was to determine if race diversity had any impact on the financial performance of the company. The financial performance measures, ROA, ROE and Tobin's q were used to determine the impact of this diversity proxy.

6.5.2. Total combined companies results summation

6.5.2.1. Correlation analysis

6.5.2.1.1. Market-based measures

When exploring the existence of significant relationships between non-white board members and the performance measures, the findings indicate that for the race diversity proxy, there is a statistically significant relationship between non-white board members and the market performance measure, Tobin's q. This

relationship is weak and negative with r=.168 as shown in Table 27**: Total combined companies – Test for correlation** in chapter 5.

6.5.2.1.2. Accounting-based measures

When exploring the existence of significant relationships between non-white board members and the performance measures, the findings indicate that for the race diversity proxy, there is no statistically significant relationship with ROA and ROE.

6.5.2.2. Regression analysis

6.5.2.2.1. Market-based measures

The regression results indicate that the impact of the race diversity on performance is statistically significant with a beta value of -.280 and explaining 7.8% of the variances for Tobin's q as presented in Table 34**: Non-white board members – Regression test** in chapter 5. This impact was negative.

6.5.2.2.2. Accounting-based measures

The regression results indicate that the impact of the race diversity attribute on performance is not statistically significant in terms of ROA and ROE.

6.5.3. Stratified ranked companies results summation

6.5.3.1. Correlation analysis

6.5.3.1.1. Market-based measures

The findings from the diversified company categories namely the Top 40, 41-100, 101-160 and The Rest, indicate the following: the non-white race has statistically significant relationship in the Top 40 with Tobin's q having a weak negative relationship with r= -.291 as tabulated in Table 28**: Top 40 ranked companies – Test for correlation** in chapter 5.

6.5.3.1.2. Accounting-based measures

The findings from the diversified company categories namely the Top 40, 41-100, 101-160 and The Rest, indicate that ROA and ROE did not present a statistically significant relationship. The number

6.5.4. Discussion of results

When reviewing the impact of race as a proxy for board diversity at both a total and stratified company level, the correlation and regression analyses were shown to have a statistically weak negative significance for the market-based measure of Tobin's q. This denotes race diversity as having a weak negative relationship to, and is a weak negative predictor of, company financial performance. The accounting-based measures yielded a non-significant impact between racial diversity of boards and firm performance. There is, however, an alternate finding that is discussed in hypothesis 4 below.

Given that the future outlook for companies with a board of directors who are racially diverse in nature, are seen by stakeholders and analysts as being negative, this is consistent with the findings of Kochan et al. (2003) and Shukeri et al. (2012). The negative connotation between race diverse boards constructs and those which are homogenous in nature as represented in prior research, have been perceived as being the minority of the findings within this study.

Andrevski et al. (2014), Cheong & Sinnakkannu (2014) and Ujunwa (2012) state that a company's performance has been shown to a have positive correlation to racial diversity, against the findings of this study. In addition, prior studies were unable to find a relationship between firm performance and ethnic diversity (Carter et al., 2010), which is again against the outcomes of this research section.

As abolition of apartheid in South Africa has been recent event, and that many of the outcomes found in previous research papers relate to countries where the issue of apartheid is not a consideration, this opens South Africa's opportunities to embrace this diversity and reap the benefits thereof, as stated below. The South African stock market values diversity highly, validating the importance of

the initiatives imposed to achieve diversification of a firm's board of directors within the South African context (Ntim, 2015).

The argument that the appointment of racially diverse directors could be considered purely window dressing, to portray the firm's board construct as being aligned with the expectations of society (Cheong & Sinnakkannu, 2014), will always present itself. If board directors are appointed merely as window dressing, the resultant board diversity will have a positive influence on company value (Ahern & Dittmar, 2012). However, those directors who are considered traditionally under represented on boards have a vested interest in epitomising their appointment as being based on merit only, without any consideration of their race (Krawiec et al., 2014).

Racial diversity brings with it a plethora of experience, augmenting human and social capital (Haynes & Hillman, 2010). This contributes to the financially unrecognised pool of intellectual property also (Maditinos et al., 2011), which in its own right interposes to the value of the corporation which may as yet not have been recognised.

Ethnic multiplicity contributes towards a firm's competencies in the discovery and exploitation of opportunities, for cultivating new and improved competitive actions, through participation which advocates the dissemination of cognitive knowledge amongst individuals at numerous management levels (Andrevski et al., 2014; Haynes & Hillman, 2010; Maditinos et al., 2011). Andrevski et al. (2014) further affirm that in order to enhance the capacity in articulating innovative competitive actions under competitive conditions, with large growth opportunities, racial diversity within management augments this requirement.

6.5.4.1. Hypothesis 3 concluding comments

In conclusion this research has shown a negative correlation between race diversity and company performance, however, as alluded to above, there is now ample opportunity for a racially diverse board to pursue the benefits evident in many other parts of the world. Hypothesis 4 presents evidence that the negative

impact of race diversity becomes non-significant when other diversity measures are included in the model.

6.6. Addressing Hypothesis 4

6.6.1. Combination of demographic diversity variables

The alternate hypothesis for the combined demographic diversity is as follows:

$H4_A$: Diversity OF Board: Nationality, Gender and Race in combination, is a predictor of firm performance FP1<FP2

The fourth research hypothesis was formulated to determine if the combination of demographic diversity measures, being nationality, race and gender, has an impact on the financial performance of a company. Multiple regression was used to investigate the impact.

6.6.2. Total combined companies results summation

6.6.2.1. Correlation analysis

Multiple regression analysis is used to determine the measure of predictability on company performance when more than one independent variable is measured simultaneously, and not the correlation between the variables.

6.6.2.2. Multiple regression analysis

6.6.2.2.1. Market-based measures

The impact of the diversity measures on Tobin's q was statistically significant, specifically the nationality diversity measure with a beta of .406 shown in Table 41**: Demographic diversity combination of board members – Regression assessment on Tobin's q** in chapter 5, which made a significant and unique contribution to the positive prediction of the Tobin's q.

6.6.2.2.2. Accounting-based measures

The impact of nationality, gender and race diversity on the combination of the diversity measures for ROA and ROE were found to be non-significant. The analysis does also not consider nationality, gender and race in the combination of demographic diversity attributes as having strong predictive power.

6.6.3. Discussion of results

The multiple regression analysis, used to obtain the value of a measure derived from the combination of numerous predictors or independent variables, yielded results that affirm the conclusions drawn in hypothesis 1 and hypothesis 2 here above. The conclusion drawn in hypothesis 4, when compared with hypothesis 3, vis-à-vis board race diversity and firm performance, denotes further discussion as these results are inconsistent.

6.6.3.1. Nationality

Given that the findings for the nationality diversity of board and company financial performance in this hypothesis are consistent with those of hypothesis 1, reaffirms the extreme significance of nationality diverse boards to company performance. Nationality board diversity has proved to be the substantial predictor of company performance in this study.

6.6.3.2. Gender

Hypothesis 4 found no statistically significant relationship or predictability between gender diverse boards and company performance consistent with hypothesis 2. However, Table 39**: Demographic diversity combination of board members – Regression assessment on ROE** in chapter 5 shows board gender diversification as being the strongest predictor of the three diversity attributes, intrinsically demonstrated through the accounting-based measure of ROE, although the outcome is statically insignificant.

6.6.3.3. Race

The results from the fourth hypothesis denote board race diversity as having a non-significant relationship with the prediction of firm performance. The results found in this hypothesis are inconsistent with those of hypothesis 3, where the impact of board race diversity on Tobin's q was found to be statistically significant, and considered a weak negative signifier of predictability.

As a result, the 7.8% of the variance explained by race diversity on Tobin's q in the simple regression test in hypothesis 3, is not considered influential in making a unique, statistically significant contribution to the multiple regression model, when all the diversity variables are combined. Thus race is not a significant predictor in the multiple regression model in contrast to the influential significance established in the simple regression model analysed in hypothesis 3 above.

Given the non-significant findings of board race diversity as a predictor of company performance in this section, opposing the results obtained in hypothesis 3 above, this is consistent with Carter et al. (2010), who were unable to find a relationship between firm performance and ethnic diversity. These conclusions refute the negative association and prediction of race diversity and firm performance as found in hypothesis 3 above.

6.6.3.4. Hypothesis 4 concluding comments

The synopsis for this section has reiterated the overwhelming superiority of a nationality diverse board in comparison to boards of directors that are homogenous in structure. This hypothesis also repudiates the negative association with board race diversity and firm performance found in hypothesis 3 above, consistent with the mainstream conclusions in the body of knowledge pertaining to firm performance and race diversity of boards of directors.

6.7. Addressing Hypothesis 5

6.7.1. Board size

The alternate hypotheses for board size are as follows:

$H5a_A$: Size of Board, has a relationship with firm performance FP1<FP2
$H5b_A$: Size of Board, is a predictor of firm performance FP1<FP2

The fifth research hypothesis was formulated to investigate as to whether the size of the board had any impact on the financial performance of a company. A correlation test and simple regression analysis were performed to investigate the extent of that impact.

6.7.2. Total combined companies results summation

6.7.2.1. Correlation analysis

6.7.2.1.1. Market-based measures

When exploring the existence of significant relationships, the overall findings on the impact on the size of the board towards financial performance of a company indicate that Tobin's q is statistically significant with a weak positive correlation of .241 as tabulated in Table 27**: Total combined companies – Test for correlation** in chapter 5.

6.7.2.1.2. Accounting-based measures

When exploring the existence of significant relationships, the overall findings on the impact on the size of the board towards financial performance of a company indicate there is no statistically significant relationship with the ROA. The ROE proves to have a statistically significant relationship with a weak positive correlation of .160 as tabulated in Table 27**: Total combined companies – Test for correlation** in chapter 5.

6.7.2.2. Regression analysis

6.7.2.2.1. Market-based measures

Simple regression testing was conducted to gauge the impact of the Board Size as a predictor against financial measures. Results indicate that the impact on Tobin's q is not statistically significant.

6.7.2.2.2. Accounting-based measures

Simple regression testing was conducted to gauge the impact of the Board Size as a predictor against financial measures. Results indicate that the impact on ROA and ROE is not statistically significant.

6.7.3. Stratified ranked companies results summation

6.7.3.1. Correlation analysis

6.7.3.1.1. Market-based measures

The findings from the grouped categories being the Top 40, 41-100, 101-160 and The Rest, indicate that the relationship between the board size and Tobin's q, the market-based performance measure, was not statistically significant. Therefore, at an overall level, board size does have an impact, but when segmented does not present a statistically significant difference, which suggests a similar impact on all companies.

6.7.3.1.2. Accounting-based measures

The findings from the grouped categories being the Top 40, 41-100, 101-160 and The Rest, indicate that the relationship between the board size and ROA and ROE accounting-based performance measures were not statistically significant. Therefore, at an overall level, board size does have an impact, but when segmented, does not present a statistically significant difference, which suggests a similar impact on all companies.

6.7.4. Discussion of results

When gauging the implications of the size of the board of directors on company financial performance, a positive relationship was found to exist at the total combined companies parallel. This was true for all the financial measures including the market-based measure of Tobin's q and the accounting-based measures of ROA and ROE. Board size, however, cannot be considered a predictor of financial performance and had no impact at the stratified company level.

Board size was considered an essential element of this study, owing to the fact that the size of the board of directors would dictate the level of possible diversity combinations. Company board size is considered as the key enabler of diversity (Daily et al., 1999).

In prior studies, concerning the number of board representatives, conducted by Hartarska & Mersland (2012) and Uadiale (2010), recommendations for a larger board composite to achieve improved corporate financial performance were made, consistent with these research findings, bearing in mind also that size does have an influence on the capacity and spectrum of diversity (Arnegger et al., 2013; Darmadi, 2011).

Earlier studies show that board size, when larger, has been found to have a negative relationship with company performance (Ujunwa, 2012) whereas a smaller number of board members has a positive effect on performance (Pathan & Faff, 2013), against the findings of this study. The research outcomes are again against Julizaerma & Sori (2012), who made representation that board size has an almost insignificant effect on firm's financial performance. The member selection necessary to impart the appropriate combination of competencies for the success of that board should be decidedly emphasised (Ujunwa, 2012).

6.7.4.1. Hypothesis 5 concluding comments

In culmination, this research has confirmed the positive correlation between board size and superior firm performance, and an engulfing ability to enable

board diversity in preference to a board of directors that are homogenous in structure.

6.8. Summation of findings

In summation, hypothesis 1 tested the relationship to, and predictability of, board nationality diversity and company performance. A statistically significant positive relationship was found with the market-based measure of Tobin's q. Board nationality diversity as a positive predictor of company performance was also found to be statistically significant with Tobin's q. There were no statistically significant outcomes for the accounting-based measures of ROA and ROE.

Hypothesis 2 analysed the relationship to, and predictability of, board gender diversity and company performance. A statistically non-significant relationship was indicated with all of the accounting-based measures of Tobin's q, ROA and ROE. Board gender diversity as a predictor of company performance was also found to be statistically non-significant with any of the accounting measures.

Hypothesis 3 tested the relationship to, and predictability of, board race diversity and company performance. A statistically significant but weak negative relationship was found between race diversity and the market-based measure of Tobin's q. Board race diversity and company performance was found to be a statistically significant but weak predictor with the Tobin's q measurement. There were no statistically significant outcomes for the accounting-based measures of ROA and ROE.

Hypothesis 4 analysed the predictability of board nationality, gender and race diversity, as a single entity predictor of company performance. The conclusions of hypothesis 4 were consistent with hypotheses 1 and 2. However, when contrasted against hypothesis 3, hypothesis 4 produced findings of a non-significant statistical predictability capacity of board race diversity on firm performance for any accounting measure.

Hypothesis 5 evaluated the relationship to, and predictability of, board size on company performance. The conclusions demonstrate a relationship for all the

accounting measures, however, board size did not present any statistically significant indicator of being a predictor of company performance for any accounting measure.

6.8.1. Tabulated summation of findings

The following table summarises the findings of the study.

Table 42: Summation of findings

				Accept/Reject alternate hypothesis				
Hypothesis number	**Construct**	**Hypothesis**	**Analysis type**	**Market-based result Total companies**	**Accounting-based result Total companies**	**Market-based result Stratified companies**	**Accounting-based result Stratified companies**	**Positive/ Negative relationship**
1a	Nationality	DOBN has a relationship with firm performance	Correlation	Accept	Reject	Reject	Reject	Positive
1b	Nationality	DOBN is a predictor of firm performance	Regression	Accept	Reject	N/A	N/A	Positive
2a	Gender	DOBG has a relationship with firm performance	Correlation	Reject	Reject	Reject	Reject	N/A
2b	Gender	DOBG is a predictor of firm performance	Regression	Reject	Reject	N/A	N/A	N/A
3a	Race	DOBR has a relationship with firm performance	Correlation	Accept	Reject	Accept	Reject	Negative
3b	Race	DOBR is a predictor of firm performance	Regression	Accept	Reject	N/A	N/A	Negative
4	Nationality	DOBNGR is a predictor of firm performance	Multiple Regression	Accept	Reject	N/A	N/A	Positive
	Gender			Reject	Reject	N/A	N/A	N/A
	Race			Reject	Reject	N/A	N/A	N/A
5a	Board size	SOB has a relationship with firm performance	Correlation	Accept	Accept	Reject	Reject	Positive
5b	Board size	SOB is a predictor of firm performance	Regression	Reject	Reject	N/A	N/A	N/A

6.9. Conclusion

This chapter discussed in detail the findings presented in chapter five. Chapter seven will culminate the study, collating the research findings with the intention of advocating insightful recommendations based thereon. The research process elucidated further questions encompassing board directorate diversity and firm performance, all of which will be proposed for future studies.

Chapter 7 – Conclusion and recommendations

7.1. Introduction

This concluding chapter underlines the main findings of this study, the conclusions and significance thereof. The findings bring forth the implications of the results, the limitations of the study and recommendations for further research. Stakeholder implications are elucidated and final concluding comments are presented.

The primary objective of this study was to determine if the diversity of a listed company's board of directors has an influence on an organisation's performance within a South African context, and if so, to test if it was positive. Understanding how the various demographic dissimilarities could be successfully combined in a board construct and exploited to achieve an optimised corporate performance, whilst simultaneously fostering an inclusive corporate landscape, would be to the benefit of all South Africans.

7.2. Research findings

Insofar as could be ascertained, this is the first study within a South African context which considers the consolidation of three diversity attributes, that is race, gender and nationality as a single predictor of company performance. The proposition, "if the structure of the board of directors could be altered from the status quo,, that is predominantly homogenous composition to a more diverse construct, would there be a broader pool of human capital with broader experience and multiple points of reference upon which to draw from, intensify firm performance?", can now be addressed with statistical analytic weighting.

7.2.1. Contribution to the body of knowledge

Nationality board diversity presents a phenomenal relationship and predictability of company performance. Company board directorates with diversity in nationality bring a surfeit of experience and knowledge of various institutional

environments, and considering business activities frequently encompass the global economy, a company whose board is of a nationality diverse nature, brings with it the understanding of different operating environments intensifying competitiveness and company performance.

Female board diversity has not presented any statically significant relationship to, or predictability of firm performance within this study. This could partially be explained by the average representation of two females per board which is one female less than the previous findings concerning a critical mass to influence board decisions and performance. In prior research, female board representation was found to have a positive impact on governance as well as a reduction in risk taking, resultant in investor confidence.

Race board diversity and the relationship to, and predictability of, firm performance had contradictory findings in this study. In isolation, race diversity was found to have a weak negative impact on performance, however, when combined with the nationality and gender factors, showed a non-significant impact on company performance. This propagates ample opportunity for a race diverse board to pursue the benefits evident in many other parts of the world and realise the documented advantages thereof.

Board size, considered the catalyst for directorate diversity, was concluded as having a statistically significant positive relationship with company performance. This underscores the capacity to facilitate board diversity and realise the potential advantages suppressed therein.

7.2.2. Revised model of board capital

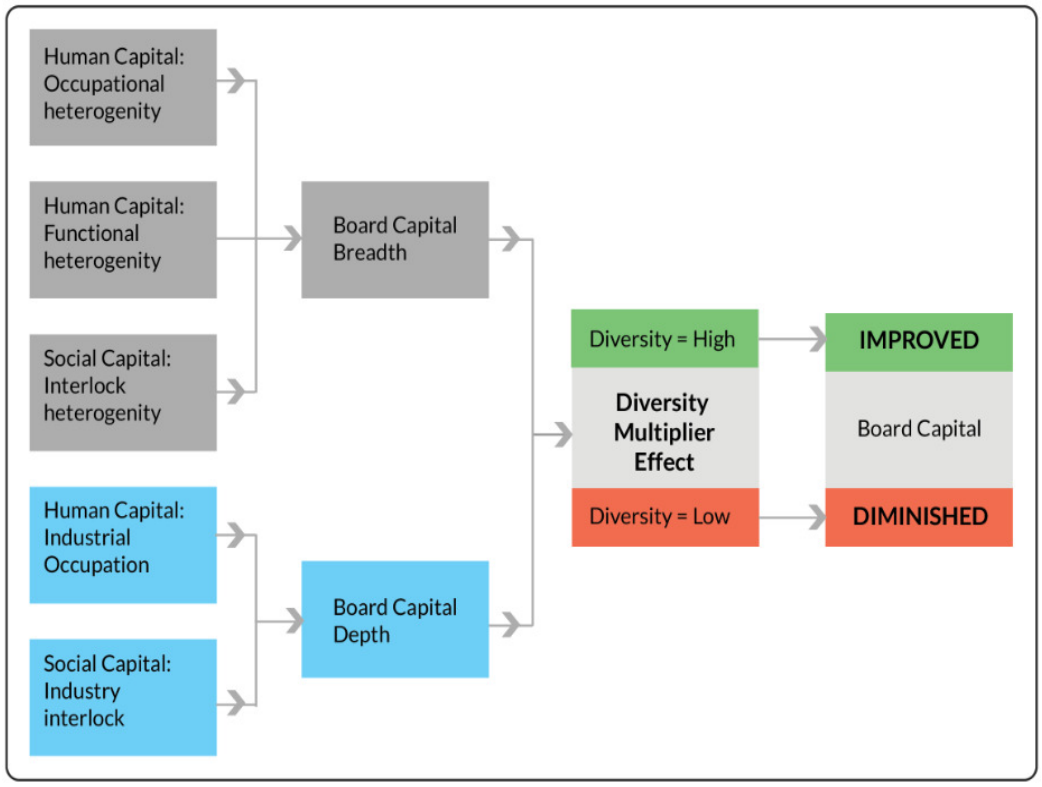
Given the findings of this study, in conjunction with prior research and the body of knowledge epitomising board diversity and company performance, the figure below represents a further element for consideration, being a diversity multiplier of board capital, building on “The model of Board Capital” by Haynes & Hillman (2010) depicted in Figure 1**: The model of Board Capital (Haynes & Hillman, 2010)**in chapter 2.

Various aspects of human and social capital are amalgamated in the formulation of board capital breadth and board capital depth, considered the fundamental elements of board capital. Board capital is crucial in achieving optimised company performance and should be constructed to be as robust and multifaceted as possible to dynamically address every fiduciary responsibility bestowed upon the board directorate. If board capital, the epitome of firm performance, can be intensified then so too will the influence on organisational performance.

If board capital depth and breadth do not account for diversity then board capital remains constricted. If an organisation's human and social capital, the compounding elements of board capital breadth and depth, heed the implications of diversity on board capital, the status quo can then be altered and where diversity is high, improved board capital can be expected. If, however, board diversity remains low, a diminished value and effectiveness of board capital can be expected.

The "Diversity Multiplier Effect" depicted in the model below, takes into consideration the paradigm of board diversity. It accounts for the demographic attributes of the company's board of directors and given the overwhelming advantages of diversity, multiples the significance of board capital accordingly. A high level of board diversity draws decidedly improved board capital value whereas a low diversity composition parallel yields diminished board capital worth.

Figure 4: The model of Diversity Multiplied Board Capital



7.3. Research conclusion and implications

Board diversity has clearly been identified as the catalyst to amplify value of listed companies. Diversity is an enabler of company performance yet from a South African perspective, the status quo of homogenous board directorates is still evident in the minimal female board representation, demonstrating the slow adoption of change.

To unlock the full potential encapsulated within diversity constructs, company boards need to be more representative of the society in which they operate. However, to drive change and encourage expedited embracement thereof, there is more that needs to be done to ensure that corporate boards are representative of their citizenship and thereby experience the benefits thereof.

Diversity is legislated within South Africa and is demanded by society at large. Intensifying pressure from an array of stakeholders coerces organisations to comply thereto. The JSE values diversity highly, validating the importance of the initiatives imposed to achieve diversification of a firm's board of directors within the South African context (Ntim, 2015). Companies need to accommodate consumers ever changing needs but more importantly, diversity keeps organisations relevant.

7.4. Research recommendations

By virtue of the evidence in this study as well as that previously identified of improved company performance based on corporate board diversity, this motivates the accelerated adoption of diversification. Prompter implementation of diversity precipitates avoidance of potential loss of company added value.

To accelerate the prosperity derived from diversity, companies must accelerate reform. Directorate appointments, however, should not be merely tokenistic, as board directors appointed purely as window dressing will have no impact on company performance (Ahern & Dittmar, 2012).

Business undertakings often encompass the global economy and nationality diverse boards derive a superfluity of experience and acumen of various institutional environments. The derived benefit of these nationality diverse directorates entails superior complex task solving and articulation of innovative solutions (B. B. Nielsen & Nielson, 2012). Strategic decision making is epitomised by highly complex, uncertain and frequently unique situations in which nationality diversity arguably intensifies the comprehension and quality of those strategic decisions. Nationality diversity proved the most impactful diversity element and should be addressed accordingly.

Board gender diversity brings with it a positive impact on governance as well as a reduction in risk taking. Although not evident in the findings of this study, in other global economies female board representation positively impacted company performance (Nguyen et al., 2015). Investors have been shown to have a more favourable response to imperative corporate financial decisions made by

companies with executive female representation of critical mass (Huang & Kisgen, 2013) and female executives exercise more caution than their male counterparts when making significant corporate decisions (Levi et al., 2014).

Although race diversity demonstrated a miniscule negative impact on firm performance within this study, Andrevski et al. (2014), Cheong & Sinnakkannu (2014) and Ujunwa (2012) have found that a company's performance has been shown to a have positive correlation to racial diversity. This induces South Africa's opportunity to embrace race diversity and reap the benefits thereof.

7.5. Limitations

There are limitations within the study that need to be recognised. A risk exists that the inclusion thereof, may potentially alter the findings of this research project.

The study aimed to define the relationships between nationality, gender and race diversity of company boards, as well as board size and firm performance. Consideration of all the factors that may have possibly influenced this relationship were not accounted for.

The definition of nationality, gender and race diversity within the study was limited. Specifically within this research, there was a contrast to white South African males only and the remainder of the demographics concerned were bundled into single alternate attributes being, non-South African, female and non-white. Other board demographics such as education and tenure were not considered.

This study focused on company board composition and did not account for the effectiveness of the board of directors itself. The nature of the study was descriptive and did not explain how or why diversity and size influences financial performance.

The period under review was a snapshot in time and encompassed one financial year only. An analyses of additional periods may have provided a more comprehensive and broader insight of the results obtained herein. Not all companies have their financial year-end simultaneously. Therefore, certain anomalies that would be experienced equally by all companies being measured on the same timeline may have been omitted.

The study was restricted to the South African stock exchange and limited to 130 listed companies, and may not be representative of global trends. The South African context presents its own anomalies which may be dissimilar to those of other countries. In addition, audited financial results do not ensure complete standardisation of published financial statements, as accounting policies and interpretations thereof can differ from company to company and may have a material impact.

7.6. Suggestions for future research

Given the array of implications of board diversity within a South African context, additional research in this field will be invaluable. Company leadership is an ever evolving phenomenon and is fundamental in guiding an organisation in achieving its mandate. A broader understanding of board diversity dynamics brings with it an opportunity to unlock previously unrecognised advantages and further research in this field will provide insight into how this could be achieved. The following suggestions for future research will aid in contributing toward the body of knowledge in this field.

A longitudinal study would establish a causation effect between company board diversity and firm performance. The nature of the study was descriptive and did not explain how or why diversity and board size influences financial performance.

The study was restricted to the South African stock exchange and limited to 130 JSE listed companies. A larger sample size would provide a more vigorous study and facilitate the inclusion of previously unaccounted for data analysis which could provide further guidance and motivation to promote earlier adoption of board directorate diversity.

As the study was limited to the South African stock market, the addition of various bourses representative of the world economy would promote an understanding of the relationship between board diversity and organisational performance in a global context. Literature has demonstrated differing conclusions in terms of the diversity attributes analysed within this study and company performance, and a broader sample population would solidify the results.

Analysing the impact of board diversity and firm performance within South African government and municipalities where racial and gender diversity is more established and is willingly accepted, may produce corroborative evidence supporting the adoption of corporate board diversity.

This study focused on company board composition and did not account for the effectiveness of the board of directors itself. Other board demographics such as industry experience, education and tenure should be considered in addition to the diversity measures analysed herein, to gain a more comprehensive understanding of the diversity effect on firm performance.

The board chair role is a significant driver of decision making directly affecting company performance. Possible future research could be conducted to assess the effect of the board chair's nationality, gender and race, as well as the diversity of the board he or she leads, on a listed organisation's performance.

The audited financial results do not ensure complete standardisation of published financial statements. Accounting policies and interpretations thereof can differ from company to company and may have a material impact. The use of alternate measures or ratios such as liquidity, gearing and efficiency ratios to evaluate company performance, may render an expanded comprehension of the board diversity and firm performance relationship and predictability thereof.

7.7. Concluding remarks

The subject of board diversity and the merit it brings to company performance has been and will long be a topic of debate. This study shows diversity as an

enabler of improved company performance and encourages the early adoption thereof, specifically within a South African context.

South Africa's 20 years post transition to democracy has yielded many benefits, however, there is still a plethora of untapped value available for exploitation. This study exemplifies that accelerated incorporation of diversity into the board directorate would be beneficial to the firm, its performance, as well as South Africa, its economy, its objectives and its citizens.

In closing, the necessity to transform the top level management team into an inclusive, heterogeneous board, is definitively required given the currently low representation of diverse nationality, gender and race. The lagging in corporate board diversity adoption in South Africa is indicative of organisations not yet realising the merits of inclusivity in the spirit of genuine adoption and the abundant opportunities that lie dormant therein.

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Annexures

Annexure 1: Ethical clearance

Gordon Institute of Business Science
University of Pretoria

Dear Mr Clinton Hornett

Protocol Number: **Temp2015-01442**

Title: **Impact of board nationality, gender and race diversity on a JSE listed company's performance.**

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.

Kind Regards,

GIBS Ethics Administrator

Annexure 2: Data pre assessment – Overall sample

Overall sample

Average of OutcomeValue		Overall quintile				
Predictor	Outcome	0	0.2	0.4	0.6	0.8
CountBlack	ROA	5.4%	9.2%	7.4%	4.0%	5.2%
	ROE	13.3%	19.6%	13.5%	10.7%	13.1%
	SPpctChange	18.6%	13.3%	16.0%	29.3%	11.8%
	TobinsQ	3.76	2.01	1.86	1.71	1.41
CountFemale	ROA	6.5%	5.7%		6.2%	5.6%
	ROE	12.4%	12.0%		16.3%	17.1%
	SPpctChange	16.7%	11.3%		24.3%	24.8%
	TobinsQ	2.91	2.06		2.26	1.65
CountOther	ROA	7.0%	5.7%		4.4%	6.6%
	ROE	14.0%	11.7%		13.6%	20.9%
	SPpctChange	22.6%	7.6%		25.3%	28.1%
	TobinsQ	2.64	2.58		1.73	1.68
CountOtherNationality	ROA	6.8%		5.3%	5.8%	6.0%
	ROE	15.5%		11.9%	12.4%	14.8%
	SPpctChange	16.7%		13.7%	23.5%	22.6%
	TobinsQ	1.46		2.21	2.03	5.13
pctFemale	ROA	6.0%	7.3%	5.2%	6.3%	5.5%
	ROE	9.5%	15.0%	14.9%	15.1%	15.3%
	SPpctChange	17.7%	23.9%	10.0%	14.1%	26.1%
	TobinsQ	3.45	2.31	2.55	2.09	1.40
pctRSA	ROA	5.9%	5.5%	5.6%	6.8%	
	ROE	13.4%	12.3%	13.0%	15.5%	
	SPpctChange	16.9%	29.2%	12.1%	16.7%	
	TobinsQ	4.79	2.38	1.69	1.46	
pctWhite	ROA	6.4%	1.5%	8.0%	7.0%	5.8%
	ROE	15.3%	8.3%	16.7%	14.3%	12.3%
	SPpctChange	28.2%	15.7%	12.9%	8.1%	23.4%
	TobinsQ	1.51	1.50	2.09	1.81	4.97
pctBlack	ROA	5.1%	6.3%	9.8%	5.7%	4.0%
	ROE	12.4%	16.3%	19.5%	12.3%	9.5%
	SPpctChange	20.7%	12.6%	12.1%	22.0%	25.5%
	TobinsQ	4.92	1.91	2.08	1.49	1.45
TotalMembers	ROA	6.1%	5.5%	7.3%	6.3%	5.3%
	ROE	14.8%	10.5%	15.3%	14.9%	15.5%
	SPpctChange	28.4%	8.1%	8.9%	23.5%	27.4%
	TobinsQ	2.01	2.12	2.04	2.11	4.11

Annexure 3: Data pre assessment – Tiered by market capitalisation

Tiered by market capitalisation

Average of OutcomeValue			MC-tiered quintil				
Market cap rank	Predictor	Outcome	0	0.2	0.4	0.6	0.8
1	CountBlack	ROA	9.0%	9.3%	7.5%	6.9%	6.4%
		ROE	17.7%	17.3%	19.0%	16.5%	15.5%
		SPpctChange	29.0%	11.7%	25.3%	21.2%	5.5%
		TobinsQ	7.86	2.80	2.30	1.67	1.47
	CountFemale	ROA	8.3%	11.4%	7.4%	7.8%	2.2%
		ROE	12.8%	18.9%	17.1%	26.8%	8.8%
		SPpctChange	14.7%	18.4%	22.7%	23.0%	17.4%
		TobinsQ	6.55	2.65	3.40	2.33	1.21
	CountOther	ROA	8.1%	10.8%		4.2%	6.2%
		ROE	15.1%	20.4%		15.7%	18.4%
		SPpctChange	25.6%	9.8%		29.3%	15.6%
		TobinsQ	4.46	4.72		1.51	2.30
	CountOtherNationality	ROA	10.0%	9.9%	4.4%	5.8%	7.8%
		ROE	19.8%	18.0%	14.3%	16.0%	16.5%
		SPpctChange	12.3%	24.1%	17.7%	31.9%	15.5%
		TobinsQ	2.31	2.16	1.68	1.66	10.46
	pctFemale	ROA	8.3%	10.9%	6.0%	7.7%	7.2%
		ROE	13.4%	17.4%	16.7%	21.1%	18.3%
		SPpctChange	13.0%	37.3%	20.4%	24.5%	2.9%
		TobinsQ	5.81	4.49	3.28	3.03	1.92
	pctRSA	ROA	7.8%	5.4%	7.8%	8.7%	10.5%
		ROE	16.5%	13.3%	19.4%	17.2%	20.2%
		SPpctChange	15.5%	13.5%	26.3%	28.6%	14.5%
		TobinsQ	10.46	1.70	1.71	2.60	2.16
	pctWhite	ROA	8.2%	3.5%	10.1%	6.2%	10.0%
		ROE	17.9%	17.1%	17.3%	15.0%	18.7%
		SPpctChange	-1.7%	27.0%	24.6%	14.4%	33.5%
		TobinsQ	1.84	1.59	2.81	2.56	9.59
	pctBlack	ROA	8.5%	13.0%	4.5%	7.5%	7.2%
		ROE	18.0%	23.2%	12.7%	19.3%	15.4%
		SPpctChange	36.5%	16.0%	20.2%	19.7%	5.5%
		TobinsQ	9.99	2.68	2.24	1.76	1.74
	TotalMembers	ROA	9.2%	9.1%	8.2%	8.6%	4.0%
		ROE	15.5%	21.8%	15.2%	16.9%	15.5%
		SPpctChange	5.9%	8.9%	25.4%	29.4%	42.6%
		TobinsQ	3.31	2.81	2.40	4.83	5.83

2	CountBlack	ROA	5.5%	7.0%	11.2%	6.2%	4.9%	
		ROE	23.1%	16.0%	23.0%	10.8%	13.7%	
		SPpctChange	27.2%	7.2%	8.0%	46.4%	16.0%	
		TobinsQ	2.90	2.66	2.27	1.10	1.38	
	CountFemale	ROA	9.8%	6.0%	7.0%	4.3%	7.3%	
		ROE	15.2%	15.2%	28.4%	11.2%	13.0%	
		SPpctChange	22.1%	12.8%	13.0%	21.5%	51.8%	
		TobinsQ	2.52	2.73	1.97	1.32	0.91	
	CountOther	ROA	8.9%	4.7%		4.6%	8.5%	
		ROE	16.7%	11.7%		14.4%	30.4%	
		SPpctChange	7.1%	18.2%		29.1%	30.6%	
		TobinsQ	1.72	3.20		2.30	1.56	
	CountOtherNationality	ROA	6.5%	9.3%		6.2%	4.3%	
		ROE	22.2%	18.0%		14.7%	9.9%	
		SPpctChange	22.3%	18.5%		10.5%	21.3%	
		TobinsQ	1.59	1.83		3.17	2.68	
	pctFemale	ROA	7.4%	11.4%	2.6%	8.1%	4.9%	
		ROE	13.1%	21.6%	13.1%	16.9%	22.3%	
		SPpctChange	25.3%	15.1%	4.1%	15.3%	33.7%	
		TobinsQ	2.28	2.63	2.13	2.52	1.25	
	pctRSA	ROA	5.1%	9.1%	7.2%	6.4%		
		ROE	10.1%	18.2%	15.8%	21.9%		
		SPpctChange	23.1%	3.8%	25.4%	20.3%		
		TobinsQ	3.34	2.71	1.61	1.57		
	pctWhite	ROA	7.9%	5.9%	3.0%	11.1%	6.6%	
		ROE	27.1%	12.8%	13.5%	19.1%	14.4%	
		SPpctChange	36.7%	14.1%	19.6%	13.6%	9.6%	
		TobinsQ	1.61	1.53	2.54	3.01	2.12	
	pctBlack	ROA	4.6%	5.0%	14.5%	6.9%	6.3%	
		ROE	20.4%	13.6%	24.9%	16.3%	12.2%	
		SPpctChange	29.9%	-5.5%	4.9%	22.5%	29.5%	
		TobinsQ	2.97	2.16	2.56	1.59	1.30	
	TotalMembers	ROA	9.4%	6.4%	8.8%	6.0%	3.7%	
		ROE	26.6%	14.6%	17.3%	14.8%	14.0%	
		SPpctChange	25.6%	-1.7%	35.8%	38.6%	7.7%	
		TobinsQ	3.39	1.95	1.65	2.37	1.39	
4	CountBlack	ROA	2.5%	4.5%	13.7%	7.5%	-1.1%	
		ROE	7.9%	8.0%	25.1%	11.6%	0.7%	
		SPpctChange	8.2%	6.3%	25.9%	39.3%	35.6%	
		TobinsQ	1.27	0.93	0.98	1.37	1.32	
	CountFemale	ROA	4.0%	6.4%	3.0%		5.4%	
		ROE	7.0%	18.4%	6.2%		7.9%	
		SPpctChange	8.2%	29.7%	10.4%		47.3%	
		TobinsQ	1.20	1.29	0.89		1.34	
	CountOther	ROA	5.1%	4.3%			4.2%	
		ROE	10.5%	9.0%			7.2%	
		SPpctChange	40.0%	4.7%			29.7%	
		TobinsQ	1.36	1.11			0.94	

CountOther	ROA	5.1%	4.3%			4.2%
	ROE	10.5%	9.0%			7.2%
	SPpctChange	40.0%	4.7%			29.7%
	TobinsQ	1.36	1.11			0.94
CountOtherNationality	ROA	5.7%			1.7%	2.8%
	ROE	11.2%			5.5%	5.9%
	SPpctChange	15.7%			14.9%	42.0%
	TobinsQ	1.23			0.78	1.30
pctFemale	ROA	4.0%	-16.3%	12.2%	3.7%	4.9%
	ROE	7.0%	-19.4%	26.9%	7.3%	7.3%
	SPpctChange	8.2%	35.3%	35.6%	7.8%	41.1%
	TobinsQ	1.20	1.68	1.23	0.83	1.30
pctRSA	ROA	2.2%	5.2%			
	ROE	5.1%	10.3%			
	SPpctChange	32.3%	18.0%			
	TobinsQ	1.29	1.15			
pctWhite	ROA	4.4%	-2.4%	9.5%	2.8%	3.8%
	ROE	7.8%	-1.2%	17.0%	8.2%	7.7%
	SPpctChange	53.2%	10.9%	-6.7%	26.3%	-3.7%
	TobinsQ	1.25	1.52	0.84	1.27	1.21
pctBlack	ROA	2.5%	4.4%	11.2%	6.3%	-0.3%
	ROE	7.9%	8.3%	19.4%	10.3%	2.0%
	SPpctChange	8.2%	14.5%	8.8%	12.6%	61.0%
	TobinsQ	1.27	0.99	0.90	1.03	1.60
TotalMembers	ROA	4.7%	7.2%	0.8%	4.1%	5.0%
	ROE	6.4%	16.3%	2.7%	7.6%	9.5%
	SPpctChange	30.5%	26.3%	8.3%	5.3%	35.3%
	TobinsQ	1.24	1.17	1.03	1.03	1.60

Annexure 4: Data pre assessment – Tiered by board size

Tiered by board size

Average of OutcomeValue			Board size-tiered quintil				
Board size rank	Predictor	Outcome	0	0.2	0.4	0.6	0.8
1	CountBlack	ROA	2.6%	6.0%	12.5%		1.9%
		ROE	7.4%	15.1%	22.6%		4.4%
		SPpctChange	17.0%	14.4%	14.8%		56.6%
		TobinsQ	2.97	1.45	1.55		1.51
	CountFemale	ROA	5.6%	7.7%		4.4%	4.8%
		ROE	8.0%	17.6%		9.4%	23.3%
		SPpctChange	15.9%	21.8%		6.7%	80.8%
		TobinsQ	2.56	1.52		1.59	1.50
	CountOther	ROA	7.6%		4.2%		3.4%
		ROE	13.4%		8.7%		23.8%
		SPpctChange	32.4%		4.2%		41.6%
		TobinsQ	2.32		1.68		0.92
	CountOtherNationality	ROA	6.3%			3.6%	8.5%
		ROE	15.3%			6.3%	14.3%
		SPpctChange	19.4%			32.0%	19.3%
		TobinsQ	1.28			3.17	2.31
	pctFemale	ROA	5.6%	-0.9%	11.3%	5.4%	3.5%
		ROE	8.0%	-0.8%	24.4%	11.1%	16.1%
		SPpctChange	15.9%	19.0%	24.1%	14.3%	42.2%
		TobinsQ	2.56	2.47	1.20	1.89	1.30
	pctRSA	ROA	5.2%	5.2%	6.3%		
		ROE	9.0%	8.9%	15.3%		
		SPpctChange	35.3%	18.3%	19.4%		
		TobinsQ	2.52	3.33	1.28		
	pctWhite	ROA	1.9%	10.6%	7.4%	3.9%	5.3%
		ROE	13.4%	19.4%	12.5%	8.7%	8.6%
		SPpctChange	61.4%	1.1%	6.1%	27.2%	14.6%
		TobinsQ	1.46	1.05	2.15	1.30	3.77
	pctBlack	ROA	2.6%	5.0%	7.8%	16.1%	1.9%
		ROE	7.4%	6.2%	18.5%	31.0%	4.4%
		SPpctChange	17.0%	14.4%	11.2%	24.2%	56.6%
		TobinsQ	2.97	2.13	1.30	1.41	1.51
	TotalMembers	ROA	4.1%	3.2%	11.8%	5.3%	
		ROE	6.5%	15.9%	22.6%	8.8%	
		SPpctChange	32.5%	28.5%	23.7%	11.5%	
		TobinsQ	2.94	1.35	1.79	1.74	
2	CountBlack	ROA	8.2%	6.0%		4.5%	9.6%
		ROE	17.5%	11.5%		10.5%	19.1%
		SPpctChange	3.9%	4.4%		20.1%	-10.0%
		TobinsQ	3.16	1.84		1.64	1.61
	CountFemale	ROA	6.6%	5.6%	6.7%		8.4%
		ROE	13.4%	13.2%	14.2%		15.6%
		SPpctChange	3.7%	1.6%	7.4%		23.3%
		TobinsQ	3.23	2.24	1.94		1.29

⊟CountOther	ROA	5.4%	7.0%		7.7%	7.3%
	ROE	12.6%	14.3%		16.7%	12.3%
	SPpctChange	2.9%	-0.2%		15.2%	29.8%
	TobinsQ	1.56	3.25		1.95	1.28
⊟CountOtherNationality	ROA	7.6%		4.9%	8.8%	4.5%
	ROE	16.1%		12.1%	16.0%	9.4%
	SPpctChange	16.1%		7.2%	1.0%	-6.6%
	TobinsQ	1.63		1.90	1.40	4.52
⊟pctFemale	ROA	6.6%	5.6%	5.6%	7.1%	8.4%
	ROE	13.4%	13.2%	14.3%	14.1%	15.6%
	SPpctChange	3.7%	1.6%	2.6%	9.6%	23.3%
	TobinsQ	3.23	2.24	2.44	1.71	1.29
⊟pctRSA	ROA	4.5%	8.2%	6.6%		
	ROE	9.4%	16.5%	14.3%		
	SPpctChange	-6.6%	0.9%	15.3%		
	TobinsQ	4.52	1.46	1.75		
⊟pctWhite	ROA	9.4%	5.8%	2.5%	7.4%	7.6%
	ROE	17.5%	12.7%	7.7%	15.9%	14.8%
	SPpctChange	15.8%	6.5%	16.3%	-1.8%	4.7%
	TobinsQ	1.47	1.72	1.69	2.38	4.65
⊟pctBlack	ROA	8.2%	6.4%	5.8%	4.7%	7.2%
	ROE	17.5%	13.8%	10.4%	11.5%	14.1%
	SPpctChange	3.9%	8.0%	2.6%	26.5%	-5.3%
	TobinsQ	3.16	2.66	1.43	1.74	1.50
⊟TotalMembers	ROA	5.6%		7.9%	6.8%	
	ROE	12.0%		16.5%	14.3%	
	SPpctChange	5.0%		-2.7%	18.0%	
	TobinsQ	2.44		1.79	2.23	
⊟CountBlack	ROA	7.5%	6.2%	6.7%	4.6%	3.0%
	ROE	19.0%	16.1%	16.1%	11.2%	11.3%
	SPpctChange	36.6%	17.2%	31.5%	11.2%	27.1%
	TobinsQ	8.25	2.29	1.86	1.35	1.34
⊟CountFemale	ROA	6.3%	7.1%	6.3%	4.9%	2.2%
	ROE	12.0%	13.3%	16.2%	20.8%	8.8%
	SPpctChange	24.0%	28.5%	23.4%	28.3%	17.4%
	TobinsQ	5.25	2.36	2.95	2.03	1.21
⊟CountOther	ROA	7.7%	6.1%		1.9%	7.5%
	ROE	16.6%	12.5%		12.4%	21.1%
	SPpctChange	26.2%	22.3%		34.0%	15.5%
	TobinsQ	4.23	3.01		1.73	2.28
⊟CountOtherNationality	ROA	6.0%		6.0%	4.3%	8.0%
	ROE	14.5%		14.0%	14.5%	20.3%
	SPpctChange	12.5%		31.5%	37.7%	29.7%
	TobinsQ	1.64		1.96	1.59	10.87
⊟pctFemale	ROA	6.3%	7.2%	2.6%	7.3%	5.7%
	ROE	12.0%	12.8%	14.8%	18.0%	18.7%
	SPpctChange	24.0%	42.8%	18.5%	15.3%	24.7%
	TobinsQ	5.25	2.33	3.19	1.93	2.19

⊟pctRSA	ROA	6.7%	4.3%	6.5%	6.1%	5.9%
	ROE	17.7%	14.2%	15.3%	13.5%	15.6%
	SPpctChange	31.3%	43.0%	25.9%	13.0%	12.0%
	TobinsQ	8.58	1.57	1.99	1.64	1.64
⊟pctWhite	ROA	5.6%	2.7%	7.6%	5.7%	7.0%
	ROE	11.8%	16.4%	15.0%	15.1%	18.6%
	SPpctChange	17.8%	25.1%	14.9%	38.5%	34.2%
	TobinsQ	1.50	1.41	1.65	3.13	7.78
⊟pctBlack	ROA	7.5%	6.2%	6.7%	4.7%	4.3%
	ROE	19.0%	16.1%	17.6%	13.6%	9.5%
	SPpctChange	36.6%	17.2%	26.6%	25.9%	21.7%
	TobinsQ	8.25	2.29	2.10	1.32	1.39
⊟TotalMembers	ROA	5.8%	6.8%	7.8%	5.6%	4.2%
	ROE	15.6%	14.3%	20.1%	13.1%	16.2%
	SPpctChange	15.1%	31.9%	7.8%	24.5%	37.6%
	TobinsQ	1.79	2.42	6.94	1.88	5.28

Annexure 5: Data pre assessment – Tiered by sector

Tiered by sector (resources/other)

Average of OutcomeValue			Sector quintile					
Resources firm	Predictor	Outcome	0	0.2	0.4	0.6	0.8	1
TRUE	CountBlack	ROA	9.1%	-0.3%	1.5%	5.2%	9.0%	-3.0%
		ROE	16.2%	0.3%	4.2%	9.4%	11.7%	-4.2%
		SPpctChange	36.0%	21.4%	20.9%	11.9%	24.9%	30.1%
		TobinsQ	5.19	3.11	2.08	1.19	1.35	1.54
	CountFemale	ROA	21.1%	-1.9%	3.4%	2.7%	21.1%	-3.0%
		ROE	22.5%	-0.9%	8.4%	3.8%	39.7%	-4.2%
		SPpctChange	11.5%	25.1%	49.7%	2.7%	-45.9%	30.1%
		TobinsQ	1.98	2.58	2.44	1.66	2.01	1.54
	CountOther	ROA	8.8%	0.8%	-4.3%	5.4%	4.3%	-3.0%
		ROE	8.8%	4.1%	-5.6%	10.1%	7.1%	-4.2%
		SPpctChange	10.1%	38.8%	-35.0%	-1.7%	9.4%	30.1%
		TobinsQ	2.68	1.81	5.05	1.54	3.13	1.54
	CountOtherNationality	ROA	21.1%	-0.5%	9.1%	1.2%	4.3%	-3.0%
		ROE	22.5%	1.8%	17.1%	1.9%	7.1%	-4.2%
		SPpctChange	11.5%	25.6%	8.0%	19.4%	9.4%	30.1%
		TobinsQ	1.98	1.27	1.54	3.75	3.13	1.54
	pctFemale	ROA	21.1%	-1.9%	1.4%	2.9%	14.8%	-3.0%
		ROE	22.5%	-0.9%	2.7%	5.7%	26.7%	-4.2%
		SPpctChange	11.5%	25.1%	26.1%	24.7%	-28.5%	30.1%
		TobinsQ	1.98	2.58	2.88	1.75	1.30	1.54
	pctRSA	ROA	9.1%	-3.7%	7.9%	2.8%	14.8%	-3.0%
		ROE	16.2%	-4.1%	16.7%	4.3%	18.1%	-4.2%
		SPpctChange	36.0%	3.5%	30.0%	35.1%	0.2%	30.1%
		TobinsQ	5.19	2.39	2.73	1.28	1.28	1.54
	pctWhite	ROA	21.1%	3.3%	1.3%	-1.4%	10.7%	-3.0%
		ROE	39.7%	4.8%	3.9%	0.9%	11.4%	-4.2%
		SPpctChange	-45.9%	7.0%	28.0%	29.6%	35.3%	30.1%
		TobinsQ	2.01	1.12	2.02	2.78	4.18	1.54
	pctBlack	ROA	9.1%	-0.3%	1.5%	2.7%	14.8%	-3.0%
		ROE	16.2%	0.3%	4.2%	4.0%	26.7%	-4.2%
		SPpctChange	36.0%	21.4%	20.9%	27.5%	-28.5%	30.1%
		TobinsQ	5.19	3.11	2.08	1.18	1.30	1.54
	TotalMembers	ROA	21.1%	1.8%	0.0%	2.9%	5.6%	-3.0%
		ROE	22.5%	6.7%	0.0%	4.3%	10.4%	-4.2%
		SPpctChange	11.5%	28.7%	4.4%	3.1%	83.3%	30.1%
		TobinsQ	1.98	2.65	2.33	1.75	1.19	1.54
FALSE	CountBlack	ROA	3.7%	7.6%	10.8%	5.0%	5.6%	6.0%
		ROE	8.8%	14.6%	20.0%	14.0%	14.4%	17.4%
		SPpctChange	-4.5%	27.7%	7.4%	10.8%	15.1%	22.4%
		TobinsQ	7.56	2.88	1.96	1.61	1.31	2.04
	CountFemale	ROA	10.1%	7.0%	6.2%	8.4%	6.7%	6.0%
		ROE	17.6%	13.4%	14.7%	18.5%	13.9%	17.4%
		SPpctChange	8.3%	17.5%	12.8%	22.3%	-4.8%	22.4%
		TobinsQ	1.88	3.33	1.57	2.51	1.27	2.04

⊟CountOther	ROA	20.6%	7.3%	5.1%	6.0%	7.7%	6.0%
	ROE	24.2%	15.2%	12.2%	13.9%	20.9%	17.4%
	SPpctChange	19.7%	14.3%	13.8%	18.8%	31.5%	22.4%
	TobinsQ	13.35	2.52	1.30	1.80	1.45	2.04
⊟CountOtherNationality	ROA	10.4%	7.8%	6.1%	6.6%	5.9%	6.0%
	ROE	19.5%	15.7%	13.4%	15.3%	11.6%	17.4%
	SPpctChange	-1.9%	19.4%	7.9%	24.2%	11.5%	22.4%
	TobinsQ	2.23	1.73	1.59	3.98	7.64	2.04
⊟pctFemale	ROA	13.0%	7.1%	7.4%	7.7%	4.3%	6.0%
	ROE	16.2%	13.2%	18.0%	17.1%	8.2%	17.4%
	SPpctChange	13.6%	11.1%	17.8%	23.3%	11.0%	22.4%
	TobinsQ	2.20	3.71	1.86	2.24	0.98	2.04
⊟pctRSA	ROA	6.9%	8.7%	7.6%	4.8%	5.8%	6.0%
	ROE	13.5%	16.7%	15.7%	11.6%	19.7%	17.4%
	SPpctChange	25.1%	15.8%	8.0%	25.6%	7.2%	22.4%
	TobinsQ	17.42	2.48	1.76	2.13	1.42	2.04
⊟pctWhite	ROA	7.8%	6.8%	7.5%	7.8%	6.8%	6.0%
	ROE	16.5%	15.5%	15.6%	14.8%	13.8%	17.4%
	SPpctChange	4.0%	16.9%	21.7%	13.3%	15.9%	22.4%
	TobinsQ	1.37	2.12	1.60	2.87	6.62	2.04
⊟pctBlack	ROA	3.7%	7.3%	8.1%	8.0%	5.6%	6.0%
	ROE	8.8%	14.8%	17.0%	16.0%	14.3%	17.4%
	SPpctChange	-4.5%	19.6%	24.5%	13.5%	10.0%	22.4%
	TobinsQ	7.56	3.15	1.92	1.68	1.30	2.04
⊟TotalMembers	ROA	1.0%	8.9%	6.5%	6.8%	5.1%	6.0%
	ROE	8.7%	16.1%	13.6%	15.7%	14.8%	17.4%
	SPpctChange	-13.6%	19.8%	12.6%	16.2%	20.5%	22.4%
	TobinsQ	0.75	2.25	1.55	2.75	7.64	2.04

Annexure 6: Data pre assessment – Source variable distributions

Board size

Total Members	n% of sample	Cumulative n% of sample
3	0.8%	0.77%
5	2.3%	3.08%
6	4.6%	7.69%
7	8.5%	16.15%
8	6.9%	23.08%
9	11.5%	34.62%
10	13.1%	47.69%
11	8.5%	56.15%
12	10.8%	66.92%
13	9.2%	76.15%
14	9.2%	85.38%
15	2.3%	87.69%
16	4.6%	92.31%
17	0.8%	93.08%
18	0.8%	93.85%
19	2.3%	96.15%
20	0.8%	96.92%
21	2.3%	99.23%
23	0.8%	100.00%
Grand Total	**100.0%**	

Resources sectors

Sector	# of firms
Coal	3
DIAMOND	1
Diamonds & Gems	1
Gen Mining	5
Gold	4
Int. Oil & Gas	2
Iron & Steel	1
PLAT & PRE	3
Plat & Prec. Met	2

Annexure 7: Initial statistical analysis – Significant correlations

SIGNIFICANT CORRELATIONS		
1. Overall		
	Direction	**Strength**
Total Members with ROE	Positive	Small
Total Members with Tobin's Q	Positive	Small
Non_RSA with Tobin's Q	Positive	Small
Other race with Tobin's Q	Negative	Small
White with Tobin's Q	Positive	Small
2. Top 40		
	Direction	**Strength**
Black with Tobin's Q	Negative	Small
White with Tobin's Q	Positive	Small
3. 41 - 100		
	Direction	**Strength**
Black with Tobin's Q	Negative	Medium
4. 101 - 160		
All non-significant		
5. The Rest		
	Direction	**Strength**
Other race with Tobin's Q	Negative	Medium

Annexure 8: Initial statistical analysis – Significant regression models

SIGNIFICANT REGRESSION MODELS		
1. ALL Diversity variables Included		
Female has a positive impact on ROE		
Black has a negative impact on ROE		
2. Single regression Models		
Non_RSA has a positive impact on Tobin's Q		
Black has a Negative impact on Tobin's Q		

Annexure 9: Initial statistical analysis – Regression graphs