Gordon Institute
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Board characteristics that influences effectiveness of the State-Owned Companies

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ABSTRACT

State Owned Companies (SOC) have proven to be a vital component for economic growth and have also played a significant role globally to drive economic progression or resurrect collapsing economies. South Africa currently has an excess of 700 SOCs that contributes approximately 9.2% to the Gross Domestic Products, and these entities have been exposed to numerous challenges that range from recurring poor financial performances, high staff turnover at board level, incompetency, corruption and leadership conflicts mainly driven by poor governance structures. This research study focuses on board characteristics within the SOC that can optimise organisational effectiveness and performance.

The study was quantitative in nature and was conducted on SOCs across various sectors and government departments. In determining the board characteristics, which represent an independent variable, the following attributes were chosen, gender, race, qualifications, age, experience, board committees, while the relevant outcome being organisational effective/performance was assessed used the EBITDA level, return on assets and audit opinion.

The research paper raised two questions, whether board compositions are essential for SOCs success and what characteristics of a SOC board structure may influence the effectiveness of these organisations and ultimately, their performance? Three hypotheses were raised relating to availability of board structures and impact on performance, the impact of political appointees on board independence and whether diversity at board impacts company performance.

The research confirmed the theory in that politically appointed directors have little impact on company performance, and that adequate board structure have weak relationship to company performance and that diversity at board level, depending on attribute, does have a positive impact on company performance.

Key words: ROA, EBITDA, Audit opinion, board composition and diversity

DECLARATION

I, Tshepo Ramantsi, declare that the work reflected in this research is my own, except where other author's work has been quoted and referenced. The publication by the University of Pretoria of this research paper will not in other way infringe on any third party's rights.

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List of acronyms and abbreviations

ACSA	Airports Company of South Africa
AGSA	Auditor General South Africa
ARC	Agricultural Research Council
ATNS	Air Traffic and Navigation Services Company
Armscor	Armaments Corporation of South Africa Corporation
ASSAF	Academy of Science of South Africa
CBE	Council for the Built Environment
CCMA	Council for Conciliation, Mediation and Arbitration
CEO	Chief Executive Officer
CEF	Central Energy Fund
CMS	Council for Medical Schemes
CGE	Commission for Gender Equality
CIDB	Construction Industry Development Board
CIPC	Companies and Intellectual Property Commission
CSIR	Council for Science and Industrial Research
DBSA	Development Bank of Southern Africa
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortization
ECIC	Export Credit Insurance Corporation of South Africa
ECSA	Engineering Council of South Africa
FFC	Financial and Fiscal Commission
FIC	Financial Intelligence Centre
FSB	Financial Service Board

GEMS	Government Employees Medical Scheme
GEPF	Government Employees Pension Fund
GDP	Gross Domestic Products
HPCSA	Health Professions Council of South Africa
HSRC	Human Science Research Council
ICASA	Independent Communications Authority of South Africa
IDC	Industrial Development Corporation
IRBA	Independent Regulatory Board for Auditors
ITAC	International Trade Administration Commission of South Africa
MHSC	Mine Health and Safety Council
MTSF	Medium Term Strategic Framework
NEF	National Empowerment Fund
PFMA	Public Finance and Management Act, Act 29 of 1999
PRASA	Passenger Rail Agency of South Africa
OECD	Organization for Economic Co-operation and Development
PIC	Public Investment Corporation
PWC	Price Waterhouse Coopers
ROA	Return on Assets
SABC	South African Broadcasting Corporation
SANRAL	South African National Road Agency SOC Ltd
SAA	South African Airways
SASSA	South African Social Security Agency
SOC	State Owned Companies

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

State Owned Companies (SOCs) are defined as entities in which the government has control through a wholly, majority, or significant minority ownership (OECD, 2015), and in the context of South Africa, the state through the office of the ministry under which the SOC falls is usually the main shareholder.

State Owned Companies are generally not created to maximise profits or incur losses, rather their existence is primarily for the purposes of driving development agenda on behalf of the government. They are commonly segmented into two categories, commercial, in relation to those companies that are mandated to drive profitability and non-commercial, for those that are established to enhance service delivery and create employment on behalf of the government (Jurkonis & Petrusauskaitė, 2014) (ANC, 2012). SOCs are often associated with mismanagement and poor financial performance and this is generally attributed to various aspects such as operational inefficiencies, resource inadequacies (Ambe & Badenhorst-Weiss, 2012), misappropriation of funds and the lack of shareholder accountability (McGregor, 2014). These aspects fuel the perception that SOCs are black holes which destroy shareholder value and waste taxpayer's monies due to their inability to deliver appropriate levels of returns and the inadequate application of the best corporate governance guidelines within their ownership and management structures (PWC, 2015).

This study embarks on the determination of the appropriate board structures within South African SOCs that can optimise performance and generate value for all stakeholders, and to achieve this, the research paper raises two questions;

i. Whether board compositions are essential for SOCs?
ii. What characteristics of a SOC board structure may influence the effectiveness of these organisations and ultimately, their performance?

SOCs have proven to be a vital component for economic growth and have also played a significant role globally to drive economic progression or resurrect collapsing economies, a view confirmed by PWC (2015) report which highlighted that the proportion of SOCs among

the Fortune Global 500 had grown from 9% to 23% between the year 2005 and 2014, mainly fuelled by growth of the Chinese SOCs (PWC, 2015). South Africa currently has an excess of 700 SOCs that contributes approximately 9.2% to the Gross Domestic Products (GDP) (Moneyweb, 2013), with its key strategic entities being the likes of ESKOM, South African Airways (SAA), the South African Broadcasting Authorities (SABC), DENEL, Public Investment Corporation (PIC) and Transnet to mention but a few. SOCs across the globe are normally exposed to challenges, and the ones in South Africa are not immune to such obstacles and have often found themselves faced with obstacles that range from recurring poor financial performances, high staff turnover at board level, incompetency, corruption, leadership conflicts which are often characterised by appointments of interim board members to key positions (Hans Seidel Foundation, 2014).

The magnitude of these challenges is immense such that the South African Airways has had to continually source financial bailouts from State treasury to remain afloat and meet operational obligations (Mail & Guardian, 2017) to the detriment of resources which could have been applied towards service delivery to constituencies. SOCs such as Transnet, Passenger Rail Agency of South Africa (PRASA), Eskom and the South African Broadcasting Authorities (SABC) have also had their fair share of problems which subsequently have impacted their going concern status and operational efficiencies, and the main reasons for this have been cited as;

- Inadequacy in the procurement policies and poor financial performance (Auditor General, 2013)
- Failure to appoint a permanent Chief Executive Officer (CEO) over an extended period (Kanyane & Sausi, 2015)
- Conflicts amongst board members (Hans Seidel Foundation, 2014)
- Inability to convene board meetings as required by statute (National Assembly, 2017)
- Suspension of key board members
- Board member's misrepresentation of qualifications (Public Protector, 2014)
- The dissolution of existing board structures, only to be replaced with interim boards at entities such as PRASA, SABC and the Umgeni Water

All these issues render SOCs ineffective and delays strategic decision making which may subsequently lead to poor operational performance and lost opportunities. Furthermore, these aspects depict a gloom and negative outlook on South African SOCs, and raises

concern pertaining to governance and the capability of those appointed to board structures of such institutions to adequately manage these entities for the best interests of all stakeholders. The unintended consequence is that the country's resources gets strained and an unnecessary financial burden placed on the shoulders of the state, an aspect which is negatively viewed by rating agencies (Moneyweb, 2017). Studies undertaken by (Adam, 2013; Heath & Norman,2004) established that SOCs that are efficient and effective are critical to the delivery of affordable quality of goods and services to citizens, therefore, it is important to have SOCs governed ethically, independent of political interference and that they protected from elements of corrupt activities (Adam, 2013) (Heath & Norman, 2004).

This research used the principal-agent theory as the main literary background to build and generate an insight into SOC board structures and their performances, and is augmented with the literature on organisational effectiveness and corporate governance, with the primary focus on governance and board composition.

1.2 PROBLEM STATEMENT

The subject on SOCs is not widely researched, and has received little attention with the focus predominantly been on private firms as corporate governance has traditionally been fixated on companies which operate within the private sector (Menozzi & Vannoni, 2014), and consequently, this has often impeded SOCs from the implementation of adequate governance structures and processes to avert poor performances and financial mismanagements. (Kanyane & Sausi,2015; Adam,2013) confirmed that SOCs meagre performance and failures are largely due to poor governance rather than ownership structure, and that political interference plays a role in governance matters and at times inhibits directors' independence (Kanyane & Sausi, 2015) (Adam, 2013).

The Auditor General (2013) report on SOCs further highlighted the most common risk areas that have an impact on the future sustainability of these entities, and they include;

- The quality of submitted financial statements and company reports (Denel at one point reported a government bail-out as a profit during one financial period)
- Financial health status
- Poor financial controls particularly within the supply chain including contracts and tenders (Auditor General, 2013)

This research paper has identified three key challenges faced by these entities, and are outlined as follows:

1.2.1 Problem 1

The King code on corporate governance advocates for a board structure that is independent and able to exert authority in execution of its mandates. Menozzi & Vannoni (2014) raises an argument on the subject of corporate governance, that the traditional separation between shareholders and controlling managers does not apply to SOCs as executives are nominated by a public entity which usually holds a great enough stake to ensure real control rights and establish absolute priorities (Menozzi & Vannoni, 2014), therefore, the existence of such a shareholding structure empowers the state as a shareholder with a fiduciary responsibility to appoint board members to represent their interests, and at times, an element of biasness pertaining to such appointments may arise with preference given to candidates who are able to drive the government's agenda to the detriment of independence.

State intervention is not necessarily wrong, it is the purpose for which it is geared towards that is important hence, the requirement to ensure that those appointed retain their independence regardless of their affiliation, because at times, the unintended consequence of having state ownership is that it creates an agency conflict, where the agent may find themselves caught up between the pursuance of the principal's directives and serving the interests of the SOC resulting in a dual accountable system (Hans Seidel Foundation, 2014) (Centre for Corporate Governance in Africa, 2012). This also cultivate a culture of "cronyism" that is wriggled with issues of corruption, bribery and inefficiencies that hampers organisational performance and prevent SOCs to attract and retain the required skill set and capabilities (McGregor, 2014) (Menozzi & Vannoni, 2014).

Based on this, the establishment of board structures that are independent from state intervention may be a challenge for SOCs, and this study strives to examines whether the establishment of boards is aligned to corporate governance guidelines.

1.2.2 Problem 2

The second predicament faced by SOCs is utter incompetency driven largely by the shortages of the appropriate skills set and expertise to manage, lead and execute

organisational mandates (Ambe & Badenhorst-Weiss, 2012), (McGregor, 2014). This can be attributed to numerous aspects, one of which is the preference towards private sector employment opportunities which generally appeal to a large fraction of the highly skilled individuals as they are often enticed by attractive financial packages that the private sector offers, coupled with a clearer career path, less bureaucratic practices and the transparency with which the private sector handles its business affairs (Urtiaga & Menozzi, 2013), an aspect which has been found to lack with the SOCs. This challenge prevents SOCs from the benefit of a diverse pool of individuals with a variety of expertise, education levels and cultural backgrounds, and thus afford shareholders (principals) with self-serving interests a platform to elevate individuals (agents) who lack in independence and likely to;

- drive a predefined agenda to the detriment of the SOC progress
- drift apart from being accountable
- fail to address operational non-performance issues
- take decisions that are contrary to the interests of the organisation in favour of the principal's agenda, and
- destroy value of the business (Menozzi & Vannoni, 2014) (Adam, 2013)

This highlights the importance of having appropriately qualified personnel within board structures, and this research interrogates the extent to which the SOCs boards are equipped with the right skill sets to achieve efficiencies, profitability and attain set mandates.

1.2.3 Problem 3

Lastly, SOCs operate as companies and some rely on international capital markets for funding, and to access these funds at reasonably competitive rate requires a demonstration of a consistent good financial performance and the presence of appropriate governance structures. The rating agencies have outlined that they continue to assess the level of bailouts granted to SOCs as they pose a challenge to government's fiscal balances and policy priorities, and create a highly-indebted climate as the State at times must source external funding to assist these entities. The main reasons cited in respect of this trend is the inadequacy in operational efficiencies and poor governance (Moneyweb, 2017). Therefore, the lack of governance structures at SOCs is highlighted as one of the key obstacles, and this study probes the extent to which these entities have established good governance structures to attain levels of stability.

In addressing three problems identified above, the study was extended to SOCs across various states departments and comparison derived from such. The focus has been on the assessment of the appropriateness of board structures in accordance with good corporate governance guidelines particularly in respect of board diversity, level of board independence, board committees and skills availability (Adam, 2013) (Menozzi & Vannoni, 2014) and their impact towards the attainment of profitability and effective performance.

In summary, the study has identified the following three problems:

i. The impact of the principal agency relationship on directors' independence
ii. The unavailability of required skill sets and impact on operational efficiencies/performance
iii. The impact of inadequate governance structures on ability to attain board stability and create a conducive climate to access capital markets

1.3 PURPOSE OF THE RESEARCH

The value in doing this research stems from the background that government intervention across the world, and for generations, has been at the forefront of economic transformation. The case in point is that post the great depression era, Western countries revived their economies based on the strength of state participation in economic activities through SOCs, even though this contribution has diminished over the years due to changes in their economic structures. Since the collapse of the Soviet Union, some of the Eastern European countries have also embraced the management of state assets as a strategic vehicle to spearhead economic reforms and growth (PRC, 2013) (Aharoni & Vernon, 2014)). China on the other hand provides a perfect example of an economy that has successfully been built on the strength of SOCs, and has in the process implemented excellent reforms to shed off some of these entities that proved to be a fiscal burden, unprofitable and inefficient (Gang & Hope, 2013)

Notwithstanding some of the good stories associated with SOCs, these entities have been found to be inefficient within the developing countries (PRC, 2013), a view confirmed by Adams (2013), who advances an argument that there is a public perception which associates effectiveness and efficiency only with the private sector (Adam, 2013). Considering that South Africa has a mixture of a dominant private and public sector

economic system, SOCs remain an essential vehicle for government to drive service delivery, create employment and generate economic value, therefore, there are high expectations to have these entities remain influential into the future, and this can only be attained through efficiency in management and adherence to good corporate governance guidelines.

Based on these aspects, this research aims to contribute to existing body of knowledge on:

- corporate governance and board compositions within public governance and administration
- state's approach towards the management of its economic affairs through the SOCs
- effective application of the principal-agent relationship in driving performance, and
- identification of challenges and strengths of the SOCs

1.4 DOCUMENT STRUCTURE

Chapter one of this research study refers to the introductory part of the topic and the applicable business context. In chapter two, the focus is on the relevant literature review and covers theoretical knowledge on good corporate governance, with a specific focus on governance principles around board composition and diversity, the agency theory as well as the concept of organisational effectiveness. The agency theory has been chosen as the key theoretical background for board composition and organisational effectiveness of the SOCs, and reliance will also be placed on practical theory from the corporate arena. Chapter three discusses the formulation of the research hypothesis, while chapter four outlines the methodology, coupled with the research question, and provides a detailed explanation and justification of all the theory variables as outlined in chapter two.

In Chapter five, the statistical results and analysis are outlined, while chapter six discusses the findings, coupled with similar previous findings on the same topic. Chapter seven summarises the findings set out in chapter six, and a conclusion with limitations of the study addressed as well as the recommendations that may be applied in practice and future related researches are provided.

2 CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter discusses the theoretical aspects on corporate governance, agency theory and the concept of organizational effectiveness. The aspect on corporate governance addresses what constitutes governance, the role of the good governance principles, and board composition structures as well as practical reference to existing literature on SOCs in South Africa. The agency theory is outlined in the context of board composition and independence, while the concept of organizational effectiveness is addressed from the perspective of measuring performance.

2.2 LESGILATIVE REGULATIONS IN THE CONTEXT OF SOCs

The Presidency of Jacob Zuma in May 2010, instituted reforms to transform the role of SOCs to drive economic growth by establishing the Presidential State-Owned Entities Review Committee (Kanyane & Sausi, 2015). At the center of the committee's mandate is the resolution of board and CEO appointments and a strive to attain board independence considering the fiduciary responsibilities that are placed in the office of the ministry to appoint the CEO, who consequently qualifies as a political appointee accountable to the board which had no say in his or her appointment (Burmeister, 2013).

SOCs in South Africa are subjected to multiple legislatives, the Public Finance and Management Act (PFMA), Act 29 of 1999 and the Companies Act of South Africa, Act No.71 of 2008. The former is a critical legislative applicable to the functionality of SOCs, and provides key guiding principles in terms of the fiduciary responsibilities which are conferred onto the SOCs, and include;

- The responsibility for governing bodies and accounting authorities to perform duties with utmost care, ensure reasonable protection of the entity's assets and financial records
- The duty to act with fidelity, honesty and integrity in the best interest of the entity (PFMA: Section 50, 1999)

Furthermore, South Africa SOCs are registered in terms of the Companies Act of 2008, a key legislation that pertains to how companies are regulated. This legislation provides essential guidelines to those charged with governance matters on how to carry out their fiduciary responsibilities and maintain accountability to all stakeholders. The Act also advocates for the necessity to equip organizations with directors who are independent, act in good faith for the best interests of their organizations (Companies Act No,71, 2008) and avert possible political influence and participation in governance matters of such institutions (PWC, 2015). Both the PFMA and the Companies Act have legislative elements that are non-congruent and at conflicts with each other to the detriment of stability at board levels, moreover when it comes to board appointments, as the PFMA empowers the State through the ministry and presidency to appoint the CEO, while the Companies Act, delegates this responsibility to the board.

Over and above these two legislatives, SOCs have adopted the King Code on Corporate Governance, a framework which advocates the best corporate practices and principles on governance matters (Institute of Directors South Africa, 2009). This framework is not legislated, and companies generally adopt it on a voluntary basis, and central to it, are the principles on fair representation at board level, implementation of sound processes such as transparency in respect of board appointments, attainment of diversity at a board level to ensure that boards are reflective of the country's demographics, ensuring that the board comprises of a suitably mixture of qualified personnel (Hans Seidel Foundation, 2014) based on merit rather than political affiliation and an ethical behavior. The rationale behind this approach is that board appointments will come from diverse spheres, eliminate undue influence and ensure that board independence is not compromised (Adam, 2013).

2.3 GOOD CORPORATE GOVERNANCE

The objective of corporate governance is to regulate the relationship between the main stakeholders in the form of shareholders, directors and the executives (Sari, John, & Wahyu, 2010). Adam (2013) established that poor performance and corporate failure, being in the private or public sector and is largely due to inadequate governance structures, and purports that the demise of companies such as Enron and WorldCom Brothers had everything to do with governance issues as opposed to ownership structures and performance (Adam, 2013).

Jurkonis & Petrusauskaitė (2014) advocates for the adequate implementation of best management practices as is the case with the private sector entities. This inclination has proven to have a positive impact on minimising market and political risks, and that should they be extended to SOC structures, the likely outcome will be an improvement to governance and controls, and subsequently performance (Jurkonis & Petrusauskaitė, 2014)

Governance is defined as the ability to make and enforce rules within an operational environment and the exercise of an administrative authority at all levels in the management of the organisation's affairs (Fukuyama, 2013). It also extents to the sustainability and coherence among a wide variety of actors (political, civil, institutions and groups) with different purposes and objectives (Peters & Pierre, 2000), and that it comprises of the mechanisms, processes and institutions through which all stakeholders can express their interests and exercise their legal rights to hold those in authority accountable (United Nations Educational, 2012).

The notion of governance has its origin from the Greek word, "kubernao" which means to steer, guide and direct the course, and was forged by an ancient Greek philosopher, Plato (Wikipedia, n.d.). In the context of organisations, this guidance pertains to the roles of boards, and according to the King report on good governance, coupled with the laws and regulations as covered by the Companies Act, 2008 (Act No.71 of 2008), governance entails having institutional bodies, in the form of a board structures which should assist in the development of a systematic approach and guidelines on good practices within an organisation (Institute of Directors South Africa, 2009).

At the centre of good governance is essentially effective leadership that is characterised by the ethical values of responsibility, accountability, fairness and transparency and the need to achieve a sustainable economic, social and environmental performance (Institute of Directors South Africa, 2009), augmented by cohesive operational structures, systems, processes, regulatory certainty, the right mix of intelligence with knowledge and expertise (McGregor, 2014) which are geared towards the composition of solid board structures (Institute of Directors South Africa, 2009). Strategic and solid leadership form the base for adequate implementation of good governance principles (Adam, 2013), a view confirmed by PWC (2015) which emphasises that the leaders of future SOCs particularly the board and

executives will be required to comply with the following four attributes to attain operational effectiveness within their organisation;

Attribute	Explanation
1. Clarity	Encompasses an understanding of the purpose and objectives of the SOCs and their role in service delivery
2. Capacity	The availability of time and resources to perform their roles adequately
3. Capability	Access to a wide spectrum of the required and relevant experience and expertise to govern and manage the SOCs
4. Commitment and integrity	Serve all stakeholders with a purpose and sense of accountability in the manner that adheres to rules and defined guidelines

(PWC, 2015).

Heath & Norman (2004)' study has observed a transformed approach across the globe on the increase of boards performances of the SOCs and a strive for more accountable governance from the boards and shareholders (Heath & Norman, 2004), and that some of the implemented governance reforms include an approach to make the boards more professional and act independently (Adam, 2013) as a strong board often translates into an effective participation when it comes to strategy formulation and execution, and provides a proper incentive for the management to maximise value for the best interests of all stakeholders (Heath & Norman, 2004). In the context of South Africa, this has been enhanced by the release of the King IV report on corporate governance, with the distinct focus on:

- ethical behaviour and ethical management/leadership
- emphasis on active shareholding and holding the board to account for their decisions
- The role of the board

The adverse effect of the King IV report is that is has retained the principle of "Apply or explain" which fails to hold organisations to be more compliant. This principle only requires companies to issue a statement to the effect that they are compliant to the principles outlined in this report, contrary to the United States and the UK, in which a similar framework

compels companies to explicitly outline their compliance level, and where they have failed to achieve this, an explanation is required (Kanyane & Sausi, 2015).

2.4 IMPORTANCE OF BOARDS

The fundamental aspect with SOC governance has centred around clarification of their roles and decision making powers that are bestowed on the board which plays which plays a central function in the governance of the SOC (Frederick, 2011). The King IV report on good corporate governance advocates for a board that is accountable to all stakeholders, and strives to attain independence and control over the entity's affairs, and thereby, advocates for the board to comprise of much of independent non-executive directors who can hold the management accountable. This proposition is enhanced by clauses in the Companies Act (2008) which places emphasis on the board to manage it affairs, and explicitly requires that boards should be at the forefront to manage and provide directions to the companies they serve. Furthermore, this Act is specific in terms of board appointments and requires that guidelines as stipulated in terms of section 66 of this legislation need to be adhered to for any such appointments.

Boards generally comprises of several role players, the Chairman, CEO, directors and board committees. It is essential distinguish between the roles of the directors as they are segmented into two categories, executives and the non-executive. The former refers to those that are actively involved in the running of daily operational demands and responsibilities, while the latter, refers to those individuals that are focused more on strategic avenues that impact the organisation. The CEO qualifies as an executive, while the Chairman often qualifies as a non-executive function, hence the expectation to have them serve as independent members on board structures. The guidelines on corporate governance recommend that the role of both the Chairperson and CEO be separated, and that the board should be tasked with such appointments (Institute of Directors South Africa, 2009).

2.5 BOARD COMPOSITION

There is no generic legislation that governs the recruitment and appointment of board members to South African SOCs. The PFMA does not set out who should appoint the board and chairperson but outlines the responsibilities of the board, and where there is no enabling legislation, the SOC's article of association often provides guidelines on the recruitment and appointment of boards. The typical protocol that exists is that the board appoints the CEO who becomes accountable to them and this responsibility also extends to the appointment of non-executive directors.

In the case of SOCs, there is a guiding Handbook applicable to the appointment of persons to boards of state controlled entities, and this serves purely as a guideline and is not compulsory to apply. In the context of wholly owned SOC, the state generally has much greater say in the composition of the board, a practice which is restricted where there is dual ownership in a SOC that involves external shareholders, as the state has a limit of authority which restricts it to the appointment of five non-executive directors for a fixed period of three years, while a chairman is appointed for one year. This practice often creates challenges when it comes to the attainment of board instability and is exacerbated by legislative conflicts that exist between the PFMA and the Companies Act as the former affords government as a shareholder the right to appoint and dismiss a CEO of the SOC, while the latter requires the board's input, and at times, disagreements amongst shareholders and the board may ensue as to who has the final decision making powers.

OECD (2004) guidelines states that the boards of a SOC should be structured in a manner that encourages objectivity and independent judgement, and where individuals are mandated to serve on such boards, mechanisms should be developed to ensure that this representation is exercised effectively and contributes to the enhancement of the board skills, information and independence. The guidelines further recommend that the board composition and representation should consider race, disability and gender (OECD, 2004), a proposition which is augmented by the principles on good corporate governance which stipulates that the board should comprise of a balance of executive and non-executive directors, with a majority being non-executive independent directors to enable it to have an unbiased approach towards the management of the operations. Based on this, it is essential that a board comprises of members who are from diverse background with a different skill sets to promote objectivity in decision making.

2.6 BOARD DIVERSITY

Diversity is the variation of social and cultural identities among people existing together in a defined environment, market setting, social and cultural identity which have a significant influence on people's major life experiences with the key attributes being gender, race, national origin, religion, age and work specialisation (Cox, 2001). Studies on diversity have found that it comprises of two segments;

i. Demographics, which include age, race and ethnicity
ii. Cognitive, which may take the form of knowledge, education, value system, perception, affection and personality traits (Petersen, 2000) (Timmermen, 2000)

The OECD (2015) principles on corporate governance recommends that boards should regularly carry out evaluations to appraise their performance and assess whether they possess the right mix of background and competences to implement and improve the board practices, and this extends to boardroom quotas and other initiatives that enhances gender diversity on boards and at senior management level (OECD, 2015), while the King report on corporate governance sanctions that boards should consider whether its size, diversity and demographics make it effective (Institute of Directors South Africa, 2009).

Swartz and Firer (2005) define board diversity to constitute a variety amongst the members of boards of directors in terms of characteristics such as the level of expertise, managerial background, personality, learning style, age, gender, education, values (Swartz & Firer, 2005), social connectedness, insider status and race (Ferreira, 2010), and simply translates to the ability of the organisation to bring together individuals from various cultural backgrounds, with a different skill set based on their fields of expertise, and from different racial denominations (Dobbin & Jung , 2011).

Ferreira (2010) identified that an economical and managerial approach often compels firms to choose directors for their characteristics, and that different board compositions provide diverse connections with the outside environment such as competitors, suppliers, investors, politicians, the media and other stakeholders, and as a result, the director's characteristics could affect their competency, incentive to monitor and advise managers, and create an avenue to be pursued in maximizing shareholder value or protect the interests of executives (Ferreira, 2010).

The literature confirms that the establishment of a diverse board structure provides benefits towards the effective functionality of the board and those in favour of this approach cite the following reasons in support of their proposition:

- **Creativity and different perspectives** in that people from various backgrounds with different life experiences are likely to approach similar problems in different ways. Some evidence indicates that more diverse groups foster creativity and produce a greater range of perspectives and solutions to problems and are less likely to suffer from group ideology as they are more likely to acquire information through a diverse set of sources
- **Access to resources and connections**, as the selection of directors with different characteristics, organisations may gain access to different resources. Directors with political connections may help firms deal with regulators or win government procurement contracts. These reasons probably cannot explain a demand for some other demographic characteristics such as gender, age, or ethnicity
- **Career incentives through signalling and mentoring** as diversity in the boardroom may signal to lower-level employees that the company is committed to the promotion of minority workers or at least that their minority status is not a hindrance to their careers in the company (Kang, Cheng, & Gray, 2007) (Ferreira, 2010).

While diversity has its benefits, it goes without saying that shortcomings are inevitable, and Ferreira (2010) identified the below as some of the adverse effects that are brought about by a strive for diversity;

- **Conflict, lack of cooperation, and insufficient communication** due to social psychology concept of group “fault-lines” which hypothetically may divide a group into subgroups based on one or more attributes such as demographic dissimilarity which may limit communication among subgroups, create conflict, and reduce interpersonal attraction and group cohesiveness. In the case of corporate boards, perhaps a key problem associated with diversity is the possibility of communication breakdowns between top executives and minority outside directors
- **Choosing directors with little experience, inadequate qualifications**, or who are overused mainly for their demographic characteristics is the possibility of neglecting other important characteristics. This has the consequential impact of a board which is young and inexperienced
- **Conflicts of interests and agenda pushing** as some directors may be more interested in pushing their own personal agenda even at the expense of the company’s profits.

> Perhaps more problematic is the case in which directors also represent the interests of outsiders (for example, directors with financial industry connections). A more diverse board may be in greater risk of being influenced by directors with distinct personal and professional agendas (Ferreira, 2010).

Several studies on diversity reveal that the relationship between diversity and organizational performance can either be positively or negatively correlated, and to an extent, diversity enhances greater creativity, innovation and quality of decision making at a strategic level of the board of directors (Daunfeldt & Rudholm, 2013) (Dobbin & Jung , 2011) (Ferreira, 2010). Diversity can also lead to a negative impact on performance, and it is therefore, essential to fully explore the advantages associated with a consistent or similar management structure as they have been found to positively contribute to firm performance in comparison to a diverse team (Knight, et al., 1999).

While the attainment of diversity at a board level is a process, Ferreira (2014) found that the following considerations were prevalent and consistent with the establishment of a diverse board:

- Firms appear to choose directors for their characteristics, and different types of firms choose different levels of director heterogeneity
- Firms choose directors strategically to deal with external environment
- CEOs and top executives appear to prefer directors who are like themselves
- Social networks and commonality of background appear to affect director appointments and the dynamics of the board
- Directors from minority groups perceive their minority status as a hindrance at their work as a director
- Minority directors may serve interests other than those of shareholders (Ferreira, 2014)

2.6.1 Gender diversity

At the forefront of diversity is female representation in corporate boards and this has recently become the focus point (Ferreira, 2014), augmented by racial diversity which has proven to enable quicker decision making even though at times may fuel board conflicts and inhibit

decision making due to disparities (Dobbin & Jung , 2011). Adams & Ferreira (2007) established that there is some interaction between gender and governance, and that female directors have demonstrated independent traits than their male counterparts, and are more likely to be tough monitors of controls and governance (Adams & Ferreira, 2007). The contra argument is that independence comes at a cost, and the expectation that adding women to board structures will result in a direct benefit to firm performance may not be realized as confirmed in a study by (Adams, Hermalin, & Weisbach, 2010) which determined a weak correlation between firm performance and board gender diversity, and that some firms appeared to benefit from adding women to their board structures while others would probably experience a decline in performance.

(Ahern & Dittmar, 2012; Matsa & Miller, 2013) also carried out a study on the impact of introduction of quotas on Norwegian firms and identified that the introduction of quotas had a negative impact on firm performance. The reasons cited in support of their findings were that firms which are forced by regulation to do what is contrary to regular norms are likely to incur costs which emanates from:

1. Enforced laws to hire based on quota for compliance purposes have not demonstrated any evidence that the newly appointed directors will be as qualified as the previous ones (incumbent)
2. Mandatory quota system is expected to reduce profitability unless,
    - Management talent is in excess supply, or
    - Most firms engage in Beckerian's taste based discrimination and are thus willing to sacrifice profits just to avoid employing based on quota (Ahern & Dittmar, 2012) (Matsa & Miller, 2013)

A similar research undertaken by Campbell & Vera (2010) on legislative changes in Spain reached an outcome which confirmed that positive discrimination in favor of female board appointments and gender equality act make economic sense as stock markets reacted positively to the appointment of female board members and a positive association with firm value (Campbell & Vera, 2010). This is contrary to the findings of (Ahern & Dittmar, 2012) (Matsa & Miller, 2013) on the issue of quotas on firm performance, the latter argued that performance is impacted negatively by a quota system in that those appointed to board positions based on this system often tend to be younger and possesses limited experience, while the latter holds the view that effects of quota system on performance is merely a

function of leadership. Bøhren & Staubo (2014) arrived at a conclusion that the introduction of the quota system influences board independence with the level of independence having increased from 46% in 2003 to 67% in 2008, explained by the notion that women participation in board structures had increased (Bøhren & Staubo, 2014). Daunfeldt & Rudholm (2014) confirmed that greater gender diversity could lead to a better understanding of markets and that a decision-making process could be improved since alternatives and their consequences might be evaluated in detail (Daunfeldt & Rudholm, 2013).

2.6.2 Educational diversity

The attainment of diversity is supported by theories, one of which is the literature on psychology which suggests that educational diversity in problem solving groups improves performance (Milliken & Martins, 1996), while the literature on decision making indicates that teams with functional heterogeneity are more effective at solving problems and implementation of change than homogeneous teams. Lastly, the social identity theory purports that people are drawn to those who have similar traits as them and that diversity at times has the potential to divide groups on racial, experiences and educational lines (Dobbin & Jung , 2011).

2.6.3 Cultural and ethnic diversity

The similarity-attraction theory speaks against diversity on the board structures and argues that it decreases firm performance, as individuals prefer to affiliate with other individuals whom they perceive as like them based on demographic characteristics. This also stems from individuals having experienced similar historical events and simultaneously reaching similar stages in private and family lives. It has also been found that excessive diversity can negatively impact performance because of conflicts and communication breakdowns (Murphy & McIntyre, 2007). On the other hand, the attainment of diversity in race, ethnicity and lesser extent sex tends to bring about group conflict, hinder communication and interfere with cooperation, thereby lowering performance (Carter, D'Souza, Simkins, & Simpson, 2010).

2.7 THE ROLE OF PRINCIPAL-AGENCY RELATIONSHIP

In accordance with (Marks, 1999; Berle & Means,1932) a company is an economic entity with equity owned by its shareholders, for which the level of its management effectiveness is highly dependent on the affiliation between the owners and those tasked with the management of the entity, and that conflicts often arises due to the enforcement of contracts between owners and managers (Marks, 1999) (Berle & Means, 1932). Menozzi & Vannoni (2014) identified this aspect as a "double agency" problem that often originate from conflicts that arises between managers and the board of directors, as well as between the politicians and ultimate owners (Menozzi & Vannoni, 2014)

The distinct feature that emanates from the agency theory is the existence of a relationship between two parties, the principal and the agent, and explores the partnership from a behavioural and governance perspective (Jensen & Meckling, 1976). Eisenhardt (1989) points out that this relationship is a depiction of any type of arrangement where tasks are delegated from the principal to a manager (Eisenhardt, 1989), while, Jensen & Meckling (1976) emphasised that this relationship is a contract under which one or more persons engages another person to perform functions on their behalf with the full level of authority (Jensen & Meckling, 1976).

In the context of SOCs, the state assumes the role of the principal due to its shareholding and determines the mandates to be achieved by these organisations, and would appoint members to board structures to carry out the set mandates on its behalf. The manner that this relationship is managed is critical to ensure congruency and afford those in charge with the platform to execute on their mandates without being impeded (Menozzi & Vannoni, 2014).

The literature further purports that modern corporations in which share ownership is widely held, managerial actions often tend to depart from those required to maximise shareholder returns (Donaldson & Davis, 1991), and the principal (shareholder) may at times be tempted to induce the agent (directors and management) to perform tasks that serve the principal's best interests to the detriment of the organisation (Menozzi & Vannoni, 2014). This practice at times fuel a culture that promotes bureaucratic tendencies that frustrates the system and attainment of SOC objectives (Shapiro & Willig, 1990). Eisenhardt (1989) reduces these challenges into two segments, namely;

Challenges	Explanation
The moral hazard	which refers to lack of effort on the part of the agent where the efforts required are not forthcoming and both parties (agent and principal) adopt diverse attitudes towards risk
Adverse selection	reference to the misrepresentation of ability by the agent, where the agents claims to have certain skills or abilities when he or she is hired given the challenge of the claims verification, coupled with principal's inability to verify that the agent behaves appropriately

(Eisenhardt, 1989)

Menozzi & Vannoni (2014) confirmed that in most instances, the agent will usually be in the form of a politician or a connected party to a politician who would have been elevated to a board structure with a predetermined agenda to represent the state's interests in the company. In addition, the same organisations being served may suffer from a "common agency" problem in that they are overseen by several levels of government, or by both the state and minority shareholders with potentially conflicting interests, which may be inconsistent with the agreed mandate for these entities (Menozzi & Vannoni, 2014). The unintended consequence is that this challenge has the potential to impact the calibre of the board structure as some of the nominated candidates may not necessarily be representative of the required expertise, demographic or skill set, and may ultimately inhibits the effectiveness of the board functionality (PWC, 2015). Donaldson & Davis (1991) refers to this tendency as a "model of man" in that self-interested parties rationally maximise their own personal economic gain and that individuals in pursuit of own objectives will often find means to pursue individualistic agendas (Donaldson & Davis, 1991).

In order to address some of these challenges, Jensen & Meckling (1976) developed mechanisms to mitigate the agency risk, and advocates for financial incentive schemes for managers which provides financial rewards that are aligned to the maximisation of shareholder interests (Jensen & Meckling, 1976), while OECD (2004) proposes that in dealing with conflicts of interests and misalignments, the board should be able to exercise objective independent judgement on corporate affairs, and therefore, having a majority of the board members being independent may provide such relief (OECD, 2004). Lastly, Adam (2013) recommends the implementation of adequate information systems which have the potential to curb agent opportunism and provide the principal with an insight into the agent's

behaviour, and that consequently, the agent is also likely to realise that they will not deceive the principal and will change behaviour for the best interests of the principal and organisation (Adam, 2013).

2.8 ORGANISATIONAL EFFECTIVENESS

The concept of organisational effectiveness is among the most elusive and controversial in organisational theory, and is regarded by many as synonymous with goal attainment (Kinnunen, Aapaoja, & Haapasalo , 2013) Cameron and Whetten (1983) specified that there is no definite meaning of this concept as it is a construct that exist in the head of people but have no objective reality as it cannot be pinpointed, counted or observed. It only exists because it can be inferred from the results observable and may include social sciences in the form of leadership, needs, intelligence, motivation and satisfaction (Cameron & Whetten, 1983). Reimann (1975) identified this concept as the ability of the organization, in either relative or absolute terms, to exploit its environment in the acquisition of scarce and valued resources, and that it is synonymous with the attainment of the organisation's goals which may not necessarily be accurate (Reimann, 1975).

Some businesses consider organisational effectiveness as the attainment of measurable progress towards their goals, while others define it as outcome accountability which embraces three aspects;

i. Defining the goals and objectives as appropriate to the organisation and mission
ii. Achieving observable progress towards specific outcomes for those objectives
iii. Demonstrating to stakeholders that the promised outcomes are being attained

Some of the authors that define organisational effectiveness as an outcome accountability distinguish between the inputs, outputs, outcomes and the impact, coupled with the understanding of the difficulties associated with evaluations. An analysis on organisational effectiveness found that organisation competency (executive ratings of organisational performance and executive turnover) is related primarily to management values regarding firm's stakeholders in the form of customers, suppliers, employees and government, and in assessing the effectiveness of the organisation, the challenge appears to revolve around the measurement techniques in that;

- What criteria are to be used in the assessment?
- What factors in the organisation' settings are likely to influence this effectiveness?

Key propositions on organisational effectiveness illustrate the popularity of the goal model, which is interpreted in terms of the accomplishment of goals such as;

- High productivity
- Morale
- Conformity
- Adaptiveness
- Institutionalisation

This model of measuring effectiveness raises the possibility that an organisation cannot be effective if it means attainment of all or even most of its goals, and this requires that a distinction be made between “official” and “operative” goals. Operative goals indicate what the organisation really strives to achieve as opposed to its officially stated aims and tend to be unique to a specific organisation, and make the comparison of the effectiveness of complex organisations impossible (Reimann, 1975).

To understand the concept of organisational effectiveness, reference must be made to notion of organisational competency as it forms the basis under which reliable measurement can be attained. It is said that when an organisation satisfies its various participants by providing incentives which are seen to exceed their contributions, it establishes the base for effective accomplishment of its goals, and this might be called organisational competency.

The use of predictive measurement to determine effectiveness is also essential even though these measurements may derive its own controversy as different factors are likely to predict effectiveness in achieving goals such as high employee morale or low turnover from those predicting the accomplishment of goals such ass productivity or sales growth. Different studies have yielded numerous predictors such as profit growth, sales growth, attraction and retention of high quality manpower, product quality, customer service, employee job satisfaction and morale, protection for growth and competitive strength.

To create organizational effectiveness, business leaders need to focus on aligning and engaging their people, the people management systems, and the structure and capabilities (including organizational culture) to the strategy. Engagement is critical as it results in higher financial performance, higher customer satisfaction, and higher employee retention, and an organization that can sustain such alignment will achieve increased business results (Right Management, 2011).

Although different studies have yielded different individual predictors, some agreement seems to have emerged that certain factors which define the organization's setting or environment, and its internal structure, should be considered as potential contributors to organizational effectiveness. Aspect such as the management philosophy variable can be strongly associated with a number of organizational variables, for instance the more positive or "progressive" the management philosophies, the more decentralized and the more effective in both financial and behavioural terms the firms appeared to be, and have further found that a progressive management attitude toward its important publics or "task environmental agents" is more likely to result in high organizational effectiveness than is a non-progressive attitude (or a low score on management philosophy) (Reimann, 1975).

3 CHAPTER THREE: HYPOTHESIS

3.1 INTRODUCTION

Prasad, Rao & Rehani (2001) referenced (Creswell, 1994; Kerlinger, 1956) to outline what constitutes a hypothesis, and established that it is a formal statement that presents the expected relationship between an independent and dependent variable (Creswell, 1994), a conjectural statement of the relation between two or more variables (Kerlinger, 1956), while a research question is essentially a hypothesis asked in the form of a question (Prasad, Rao, & Rehani, 2001). In this study two research questions have been raised, and are outlined as follows:

i. Whether board compositions are essential for SOCs?
ii. What characteristics of a SOC board structure may influence the effectiveness of these organisations and ultimately, their performance?

3.2 HYPOTHESES

3.2.1 First Hypothesis

Hypotheses were applied to explain how the direct correlation between two variables might suggest a positive or negative effect on an outcome. The literature on corporate governance outlined that there are challenges experienced by some of the SOCs, one of which, is the lack of appropriate implementation of adequate governance guidelines, and the literature has established that proper implementation of corporate governance principles positively impacts on SOE management efficiencies through increased transparency and quality of boards (Jurkonis & Petrusauskaite, 2014), while Adam (2013) established that poor performance and corporate failure, being in the private or public sector and is largely due to inadequate governance challenges as opposed to ownership structure (Adam, 2013). Based on this, a statistical hypothesis was constructed to assess whether the lack of governance structures leads to SOEs poor performance.

H1. The relationship between company performance and corporate board structures is positive

Good corporate governance practices have been determined and assessed based on the compliance and implementation of the following recommended principles;

- Chairman and CEO of the company being two different people
- Chairperson independence (non-executive directorship)
- Independent non-executives in majority
- Diversity (presence of various racial groups in the board structure)
- Diversity (presence of women in the board structures)
- Establishment of the Remuneration committee
- Establishment of the Audit Committee (McGregor, 2014).

3.2.2 Second Hypothesis

The literature also revealed that most of the SOCs lack stable boards and management due to conflict between the PFMA and the Companies Act makes it difficult for boards to function effectively. In accordance with the PFMA, government as a shareholder can appoint and dismiss a SOC's CEO, while the Companies Act empowers the board with such a responsibility. This leads to agency problem, in that political appointees and interference in the management of the boards may at times create agendas that conflicts with the interest of the company. Consequently, a hypothesis was set out below to determine whether agency appointments of board members to SOE board structures negatively influences the overall board performance and sustainability of the SOEs

H2: Political appointees negatively impact the performance of SOCs

This hypothesis has been assessed based on the below outlined attributes;

- Existence of politically affiliated members in relation to company performance
- Assessment of board member background, experience to company performance
- Quality of audit outcomes/ROA, EBIDTA impact

3.2.3 Third Hypothesis

The body of knowledge on board diversity outlines that the link between firm performance and board diversity is weak and questionable (Ferreira, 2014) (Carter, D'Souza, Simkins, & Simpson, 2010) (Murphy & McIntyre, 2007), while other finding were a complete contrast and demonstrated a positive correlation between diversity and company performance (Daunfeldt & Rudholm, 2013). It is this two contrast views that have prompted the formulation of a third hypothesis which was geared to assess whether diversity at board level leads to effectiveness and efficiency of SOEs

H3: The establishment of a diverse board structure and company performance are positively related

This will be assessed based on the following criteria over the period under review:

- Racial profiles (proportional representation of racial groups in a board)
- Age diversity (age profiles within the board structures)
- Gender (proportional representation between males and females)
- Educational background
- Professional experiences
- ROA and EBITDA impact

4 CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

Various studies on board composition and firm performance have used different approaches to reach their outcomes. Some have applied a qualitative approach (Thomas, 2004), while others have applied a quantitative method (Dagsson & Larsson, 2011) (McIntyre, Murphy, & Mitchell, 2007) . This research followed a quantitative approach to build up on already established methodologies to determine the characteristics of a board structure which influences the effectiveness of the SOCs and ultimately, their performance.

4.2 Research Design

According to Creswell (2003) there are three approaches to a research, quantitative, qualitative and mixed methods. Quantitative refers to an approach which uses a scientific method to develop knowledge, reduction of variables, questions and hypotheses and employs strategies of enquiry such as experiments and surveys to collect data predetermined instrument that yield statistical data (Creswell, 2003).

Quantitative studies are based on the notion of a postpositivist (positivism) knowledge claim, which implies that the researcher tests a theory by specifying narrow hypotheses and the collection of data to support or refute the hypotheses, and the data is collected through various methods and analysed using statistical procedures and hypothesis testing (Creswell, 2003). As already outlined, this research is geared towards an understanding of the relationship between board composition and board characteristics, independent variables to overall performance of the organisation, a dependent variable. A regression analysis has been performed to measure the cause and effect (a causal relationship) between two or more variables, an independent variable, represented by the demographic characteristics and the dependent variables, measured through various performance outcomes (EBITDA, ROA and audit outcome (Wegner, 2015).

The regression analysis was represented by a statistical equation that fits a straight line and defined as follows: *y = a + b(x), where;*

Y; represents a dependent variable, EBITDA, ROA and Audit outcome

X; outlines the drivers for outcome reached, and this comes in the form of board characteristics or any other input factor towards the generation of outcomes

4.3 Unit of analysis

The unit of analysis represents the major object that is being analyzed in a study. In a social science research, typical units of analysis include individuals (most common), groups, social organizations and social artifacts (Wegner, 2015). This research is concerned with the characteristics of a board structures of the SOCs in South Africa, and these attributes have been drilled down to the following as per the table below:

Demographic	Description
Age	Defines the length of time that a person has lived and it is relevant criteria in that it has been found to influence organisational performance (Dagsson & Larsson, 2011).
Gender	Describes the state of being male or female in a cultural and social climate. This attribute has been found to have an inclusive impact on firm performance (Rhode & Packel, 2014)
Race	A group of people sharing the same culture, history, language or with common features (ethnic group). It has been established that homogenous top management cannot be ignored as it often contributes to positive firm performance (Marimuthu, 2008)
Directorship experience(Years)	Indicates the knowledge or skill acquired by a period of practical experience of something, especially that gained in a position of directorship.
Professional qualification	Evidence of a higher educational background attained through academic study leading to a qualification.
Experience in business areas	Indicates the knowledge or skill acquired by a period of practical experience of something, especially that gained through business in general.

Quantitative information, which represents the dependent variable covered financial data in the form of profit level, assets base and a return on assets (ROA). Corporate governance attributes were represented in the form of board quality attributes in the form of an existence of a Remuneration Committee, Audit and Risk Committee, Board member independence, compliance in the form of overall audit opinion and legislative adherence. The below table categorises these attributes:

Financial Outcome	Quality of board	Organisational effectiveness
Profitability level or EBITDA	Board independence	Quality of audits outcome
Return on Assets: Profit/Total Assets	Board skills set	Compliance to PFMA
	Diversity levels	Compliance to Companies Act and Corporate governance principles
	Existence of Remco & Risk Committee	Clarity of goals and measurement

(Jurkonis & Petrusauskaite, 2014)

4.4 POPULATION AND SAMPLE

4.4.1 Population

A population is an entire underlying set of observations from which samples are drawn, and reflects all observations that could ever be taken for range of inference, or the broader group of people to whom one intend to generalize the results of the study (Wegner, 2015). The examination of SOC management efficiency has been limited to secondary data analysis based on the annual financial reports. Aspects on better corporate governance and board characteristics were based on published qualitative information found in these reports, restricted by the quality of the information provided.

The data gathered covered a period that ranges from the year 2009 to 2016, in view of the government's Medium Term Strategic Framework (MTSF) 2009 – 2014 which identified the need to review SOCs as a strategic tool to drive its objectives and leverage the financial power and support that the states provides to the SOCs (PRC, 2013). Furthermore, the identified period coincided with the tenure over which there has been changes in the political

landscapes in South Africa characterised by a new presidential leadership structure headed by President Jacob Zuma from that of his predecessors, President Kgalema Motlanthe and President Thabo Mbeki. The transition had triggered changes in economic policies and the direction that SOCs embarked upon.

South Africa has an excess of 700 SOCs and therefore, the coverage of all these entities in this study would have posed a challenge from a timing perspective and impossible to complete, and a result, a list of major SOCs was obtained from the National Government Entities website (National Government Entities, 2017). The list reflected a total of 169 SOCs and based on this, a @Microsoft Excel data matrix was developed to record and analyse the data for a period that ranged from the year 2009 to 2016.

4.4.2 Sample size and selection

The study covered SOCs across a wide range of industries, and for analytical purposes these organisations were initially segmented into various department based on allocations published in the National Government Entities website (National Government Entities, 2017), and subsequently clustered together for ease of data analysis and interpretation.

The use of probability sampling process is highly recommended as it eliminates elements of biasness, however, in this instance, the data sample determination process was a non-probability sampling, judgemental and involved various stages to arrive at the final sample size. The initial population of size was 169 based on the list referred to above, and this was reduced to final sample size of 57 SOCs which were subjected to statistical testing and analysis. The process followed included;

Stages	Outline
Phase 1	The determination of whether all 169 SOCs could be covered given the time constraint under which the data collection was to be undertaken. Post the review and consideration of the magnitude of the data for a time series of ten years, a decision was taken to reduce the population size to an acceptable level
Phase 2	The sample size target was then set at 50% (85 SOCs) of the original available list of entities (169)
Phase 3	The selection of the entities was a judgmental process, with biasness towards an inclusion of key SOCs such as SAA, SABC, Eskom, Transnet & PIC to mention but a few, and the rationale was to ensure that the sample does not exclude SOCs that are at the forefront of driving economic growth. Entities for which there were missing Annual Financial Statements/Reports (AFS) for at least one financial period were then removed from the total size of 85, leaving the sample size at 57 entities. The rationale behind this was to ensure that there is a full representation of data for the time series covered to ensure completeness and validity.
Phase 4	The AFS were sourced from each entity's website, accessed through the National Government Entities website or using google search engine. The data extraction processed was monotonous and extended over a period of two months, with the extraction process being systematic based on the alphabetic order listing of SOCs.

The below table lists the final sample size that has been statistically tested.

List of the companies - Sample size

`	Company Name	No.	Company Name
1	Airports Company South Africa (ACSA)	30	Government Employees Pension Fund (GEPF)
2	Agricultural Research Council (ARC)	31	Health Profession Council of South Africa (HPCSA)
3	Auditor General South Africa (AGSA)	32	Human Science Research Council (HSRC)
4	Air Traffic and Navigation Services Company (ATNS)	33	Independent Communications Authority of South Africa (ICASA)
5	Alexkor	34	Industrial Development Corporation (IDC)
6	Armscor	35	Independent Regulatory Board for Auditors (IRBA)
7	Academy of Science of South Africa (ASSAF)	36	International Trade Administration Commission (ITAC)
8	Brand South Africa	37	Land Bank
9	Broadband Infraco	38	Legal Aid
10	Council for the Built Environment (CBE)	39	Mine Health Safety Council (MHSC)
11	Commission for Conciliation Mediation & Arbitration (CCMA)	40	Mintek
12	Clean Energy for the Future (Pty) Ltd (CEF)	41	National Consumer Tribunal
13	Commission for Gender Equality (CGE)	42	National Credit Regulator
14	Construction Industry Development Board (CIDB)	43	National Development Agency
15	Companies & Intellectual Property Commission (CIPC)	44	National Gambling Board
16	Council for Medical Schemes	45	National Heritage Council
17	Competition Tribunal	46	National Housing Finance Corporation
18	Council for Geoscience	47	National lotteries commission
19	The Council for Scientific Industrial Research (CSIR)	48	National Empowerment Fund (NEF)
20	Development Bank of South Africa (DBSA)	49	Publich Investment Corporation (PIC)
21	Denel	50	Petro SA
22	Export Credit Insurance Corporation SA (ECIC)	51	Passenger Rail Agency of South Africa (PRASA)
23	Engineering Council of South Africa (ECSA)	52	SA Post Office
24	Eskom	53	South African Broadcasting Corporation (SABC)
25	Estate Agency Affairs Board	54	South African National Road Agency SOC Ltd (SANRAL)
26	Financial & Fiscal Commission (FFC)	55	South African Social Security Agency (SASSA)
27	Financial Intelligence Centre (FIC)	56	South African Airways (SAA)
28	Financial Service Board (FSB)	57	Transnet
29	Government Employees Medical Scheme (GEMS)		

4.5 DATA COLLECTION

The Companies Act (2008) stipulates that companies, including SOCs, should publish annual reports. The data gathered covered a period that ranged from the year 2009 to 2016, and the collection process took approximately two months to complete. The annual reports for the entities were obtained from their websites or the national government entities were information had been missing. Some of the reports were not easily obtainable as they were

either deleted from the companies' systems or links were not functional, and thus at times reliance had to be placed on comparatives from prior or preceding financial periods.

The necessary information was extracted from these reports, and as previously indicated, some of the companies had missing records for certain periods, and an additional time was allocated to source these records. At no time was direct contact made with any of these organisations for further assistance as the data already gathered was deemed sufficient to perform the statistical analysis. The time series depicting the data collection was sufficient to ensure that any variation or changes at a point in time are addressed over a lengthier period.

The data collection process took the form of content analysis, where secondary source data was obtained from the published annual financial reports of the SOCs. The data analysis was segmented into two components, qualitative and quantitative. The primary focus of the qualitative was on non-financial data which was categorical in nature and represented the independent variable in the form of demographic information, and was examined to determine the extent over which it has an influence on performance and organisational effectiveness. Some of the key demographic data covered included the following (Donaldson & Davis, 1991):

- Name of each director
- Position of each director
- Gender, age and racial denomination of each director
- Confirmation of educational qualification
- Board experience
- Director's independence (Non-executive vs. Executive)
- Confirmation of political connection

Most of the qualitative information was obtained from the corporate governance section of the annual reports and the disclosure for Directors' emoluments section. The latter was essential for the validation of the board size and members, as it provided a convenient means to ensure that data was not duplicated or omitted. A director who was no longer on the board structure would not have been remunerated during that financial year and was left out of the matrix, the same applied to a director who was new to the organisation as they would not have been compensated during the prior year, therefore, a check was done to ensure that the director has been added to the matrix. For politically connected directors,

reliance had to be placed on disclosed information, and where necessary reliance was placed on generally available information, and at most this was applied to CEOs and Chairman.

4.6 DATA ANALYSIS

An in-depth analysis of the published financial reports was applied to obtain an insight into the board structures, board committee compositions, demographics, experience, board member qualifications and financial performance. As some of the data collected was qualitative in nature, it was coded accordingly (Donaldson & Davis, 1991) and (Baye & Prince, 2013) using the standardised interval scales on a @Microsoft Excel data matrix system to convert the data into a quantitative format and ensure consistency, credibility and ease of comparison.

The completed data matrix was coded appropriately using various scales which ranged from 1 to 8 depending on the attributes being examined. Below is a summary of the coding conventions applied.

Gender	Code
Male	1
Female	2

Age	Code
25 - 34	1
35 - 44	2
45 - 54	3
55 - 65	4
+65	5
N/A	6

Race	Code
Black	1
White	2
Indian	3
Coloured	4

Table: Coded data1

Educational Qualification	Code
Yes	1
No	2
N/A	3

Board Experience	Code
Yes	1
No	2
N/A	3

Political Connection	Code
Yes	1
No	2
N/A	3

Audit Opinion	Code
Qualified	1
Unqualified	2
N/A	3

ROA	Code
< -15%	1
-15% to -5%	2
-5% to -0%	3
0.1% - 5%	4
5.1% - 7.5%	5
7.5% - 10%	6
10.1% - 15%	7
+15%	8

Table: Coded data2

Remuneration Committee	Code
Yes	1
No	2

Risk Committee	Code
Yes	1
No	2

Audit Committee	Code
Yes	1
No	2

Non Executive	Code
Yes	1
No	2
N/A	3

Table: Coded data3

4.6.1 Data interpretation

The data used is quantitative in nature, therefore, the interpretation of the data required the use of statistical models. A linear regression analysis has been performed to measure the relationship between two or more variables, an independent variable, represented by the demographic characteristics and the dependent variables, measured through various performance outcomes (Wegner, 2015). To determine the existence of a relationship between the input variables and output, a multiple regression was simulated using the STATA statistical tool at 95% confidence interval, applying a time series which uses auto regression.

STATA software is a program that uses Monte Carlo simulation to convert the raw output of statistical procedures into results that are of direct interest to researchers, without changing statistical assumptions or requiring new statistical models. The program, designed for use with the Stata statistics package, offers a convenient way to implement the techniques (Michael, Wittenberg, & King, 2003).

4.6.2 Validity and reliability of the results

The regression analysis was represented by a statistical equation that fits a straight line and defined as follows: $y = a + b(x)$. The equation was also applied in respect of each defined hypothesis as follows:

5 CHAPTER 5: RESULTS

5.1 Introduction

The aim of the study is to assess the appropriate board structures within South African SOCs that can optimise performance and generate value for all stakeholders.

This chapter focuses on the data analysis, presentation and interpretation of the findings resulting from the study. The results of the research are presented by means of tables, graphs and charts. The presentation of the results begins with the descriptive statistics which provide means, standard deviations of the time series data. This is followed by the normal distribution tests, followed by unit root tests to establish stationarity. This is followed by vector autoregressive models that test stationarity and cointegration. Long and short run relationships are then tested using vector error correction models, Granger causality test. To establish the direction of causality a multiple time series regression (ARIMA) is run which addresses the objectives this study.

Table 1: Respondents gender

Gender						
Year	**Male**		**Female**		**Total**	
	Count	**%**	**Count**	**%**	**Count**	**%**
2009	391	11.22	178	10.08	569	10.84
2010	394	11.31	188	10.65	582	11.09
2011	443	12.72	209	11.83	652	12.42
2012	454	13.03	227	12.85	681	12.97
2013	467	13.40	240	13.59	707	13.47
2014	470	13.49	235	13.31	705	13.43
2015	433	12.43	245	13.87	678	12.91
2016	432	12.40	244	13.82	676	12.88
Total	**3484**	**100.00**	**1766**	**100.00**	**5250**	**100.00**

There were 5250 valid cases to investigate in this study. Among males, there was a very small percentage point increase between 2009 and 2010. The numbers increased by year reaching a maximum in 2014 (13.49%). A similar trend occurs among females, a gradual increase over years reaching a maximum in 2015. The deviation from year to year is negligible, leading to a normal distribution

5.2 Race of board members

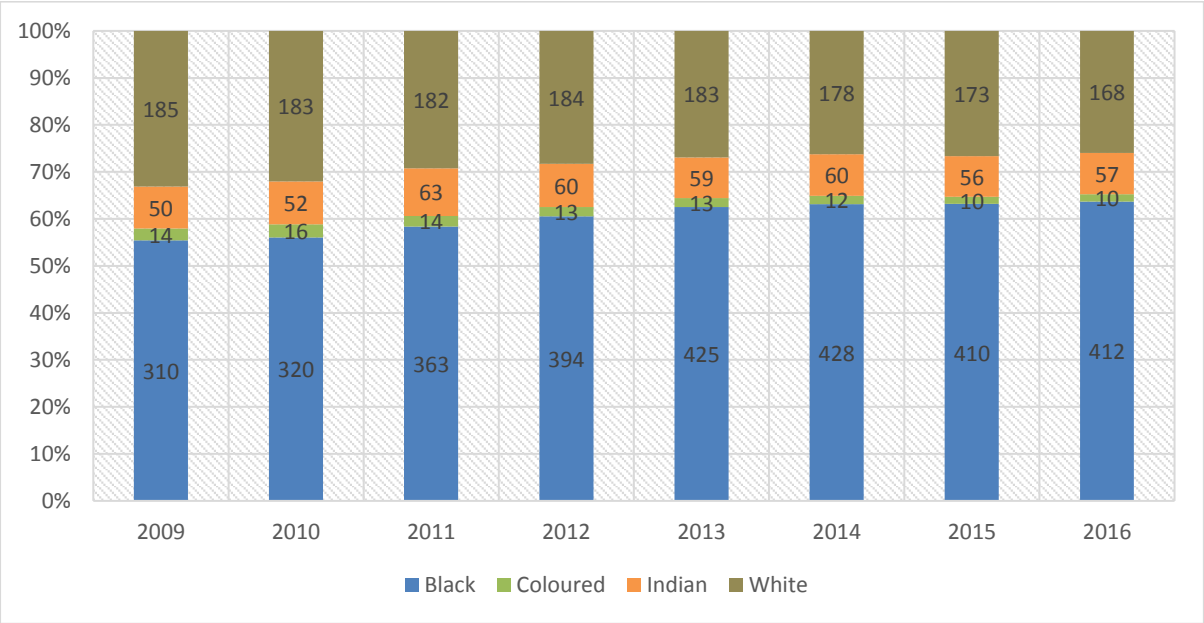


Figure 1: Board members by race

Most board members were found to be of the Black race, followed by whites. There were few representations of Indian and Coloured descents. Notably, the number of black board members increased each year, while number of Whites decreased over the same period.

Table 2: Education levels, Board experience and political connection

Year	Educational	Board experience	Political Connection	
	Yes	Yes	Yes	Total
2009	551 (96.8%)	559 (98.2%)	8 (1.4%)	569
2010	562 (96.6%)	571 (98.1%)	10 (1.7%)	582
2011	629 (96.5%)	637 (97.7%)	13 (2.0%)	652
2012	657 (96.5%)	664 (97.5%)	11 (1.6%)	681
2013	680 (96.5%)	683 (96.6%)	9 (1.3%)	707
2014	679 (96.3%)	682 (96.7%)	8 (1.1%)	705
2015	657 (96.9%)	660 (97.3%)	8 (1.2%)	678
2016	657 (97.2%)	660 (97.6%)	9 (1.3%)	676

Table 2 above indicates that generally there is high preference towards board members with the relevant educational background and board experience, and this trend has remained

consistent through the time series. Political connectedness appears quite insignificant and reached its maximum level in 2011.

5.3 Position

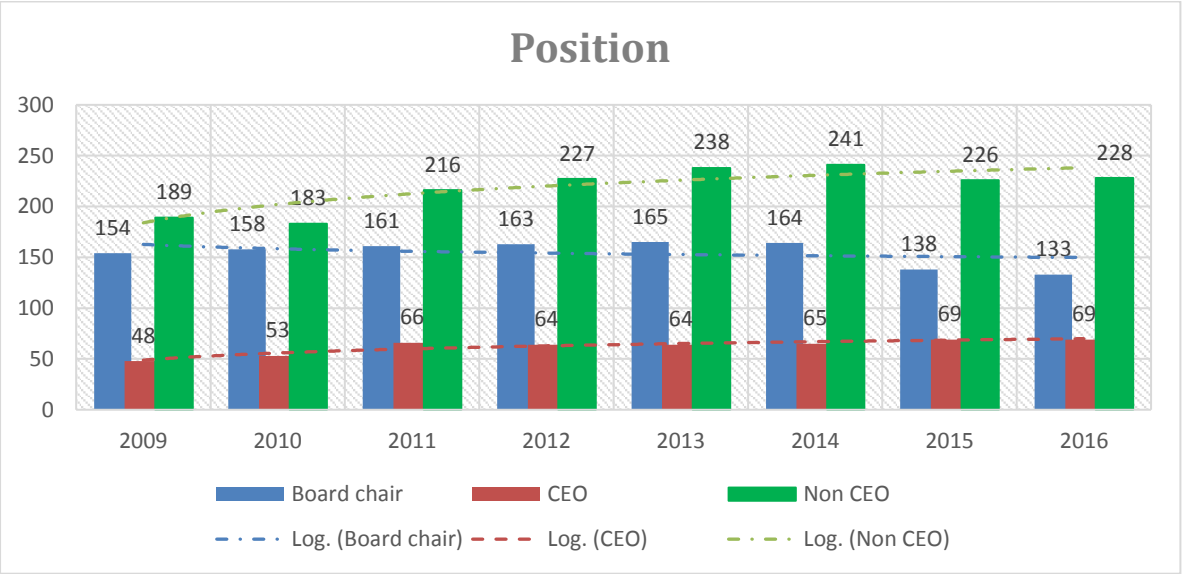


Figure 2: Board members by position

Figure 2 indicates that the sample consisted of more non-Chief Executive Officers (CEOs), followed by Board Chairpersons and lastly Chief Executives. Generally, the number of non-CEOs seemed to increase over time (2009-2016). Their number slightly decreased between 2009 and 2010, increasing exponentially from 2011, through 2012, 2013 and 2014 before declining in 2015 and 2016. The number of Board Chairpersons was almost constant over the years with very slight increases from 2010 through 2011/14 before declining in 2015 and 2016. The number of CEOs, who were least also had a constant slight increase over the years with no decline at any point.

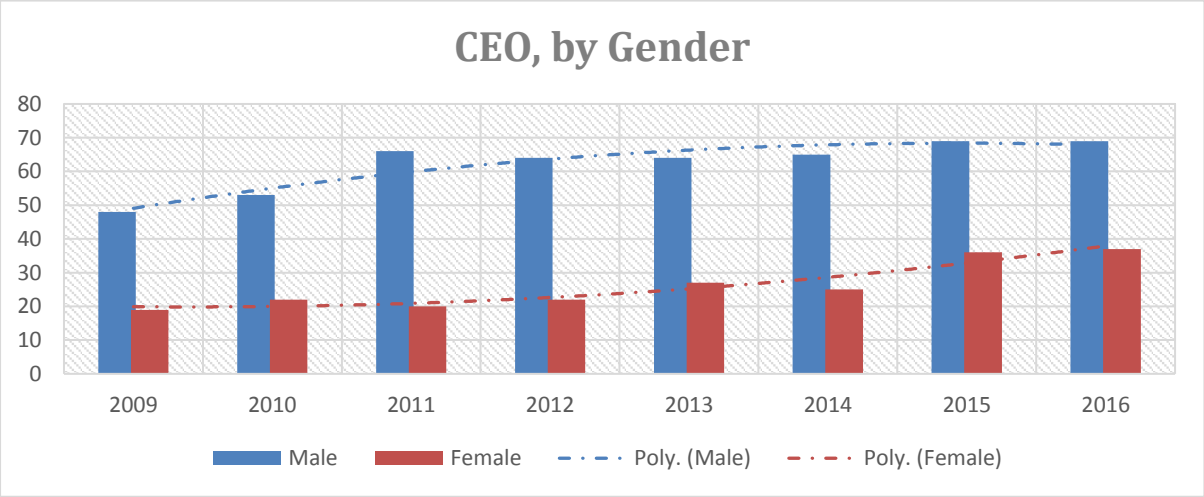


Figure 3: CEO by gender

Figure 3 above shows that generally there was a huge difference in terms of absolute numbers between male and female CEOs. Secondly, there was a general increasing trend over the years for both males and females. For males, the numbers increased with a steep upward slope between 2009 through 2010 to 2011, before declining in 2013 and 2014 periods. The numbers increased slightly between 2014, 2015 and 2016. For females, the numbers increased between 2009 and 2010, before decreasing in 2011. The numbers increased again in 2012 and 2013 before declining in 2014 and increasing again in 2015 and 2015.

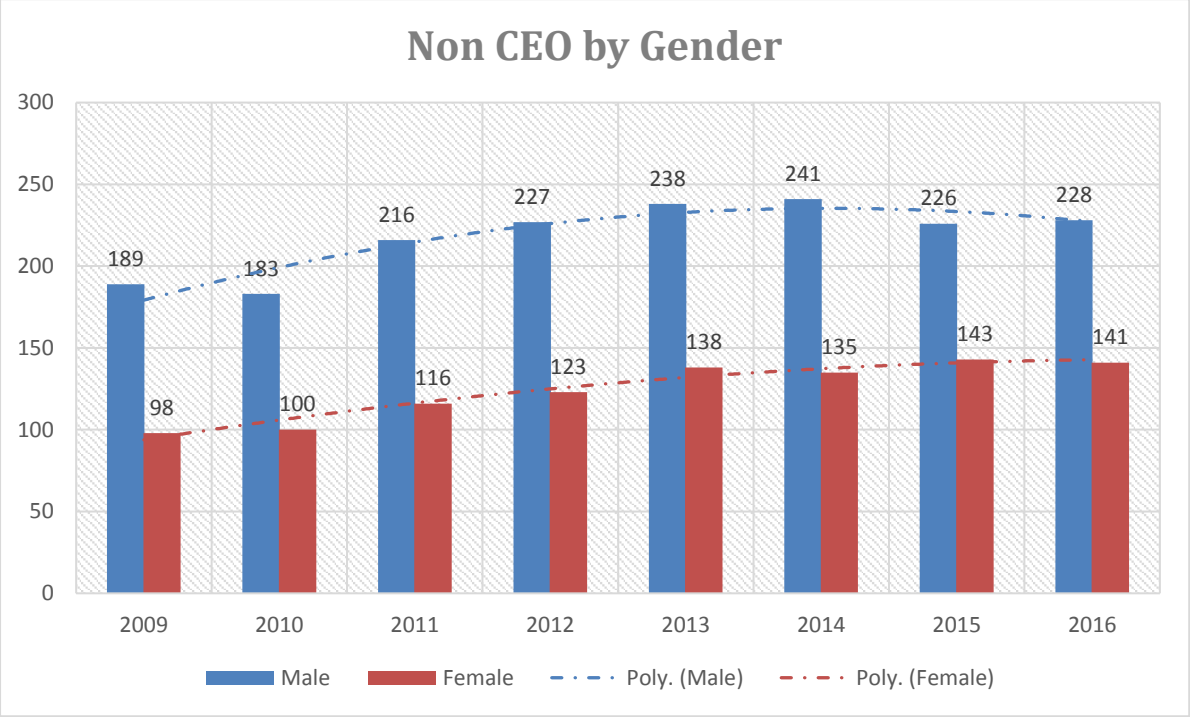


Figure 4: Non CEO by gender

Figure 4 above shows the distribution of non- CEOs over the years (2009-2016). There was a general slight net increase in both males and females over the years. Their numbers increased drastically between 2009-2011, continuing the trend up to 2014 before declining in 2015 and 2016. In respect of females, the numbers also increased steadily throughout the period 2009-2016.

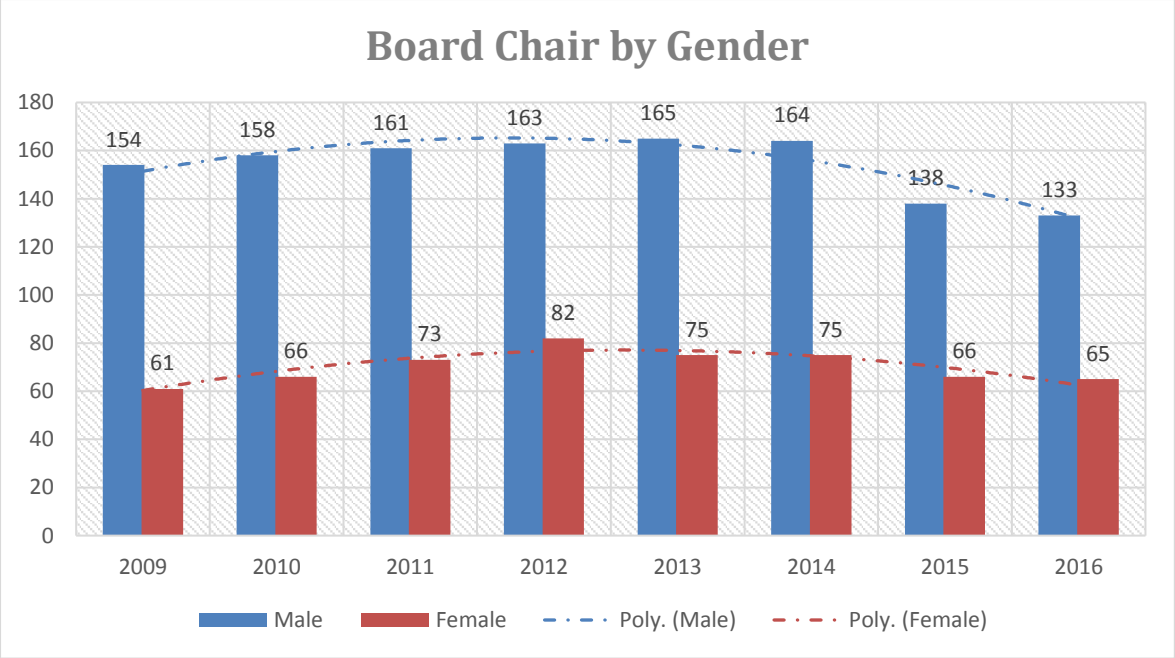


Figure 5: Board Chair by gender

The number of Board Chairpersons saw an increasing trend among males up to 2013 before drastically decreasing between 2015 and 2016. Females numbers increased up to 2012, before slightly declining in in 2013 up to 2016.

5.4 Trends Analysis

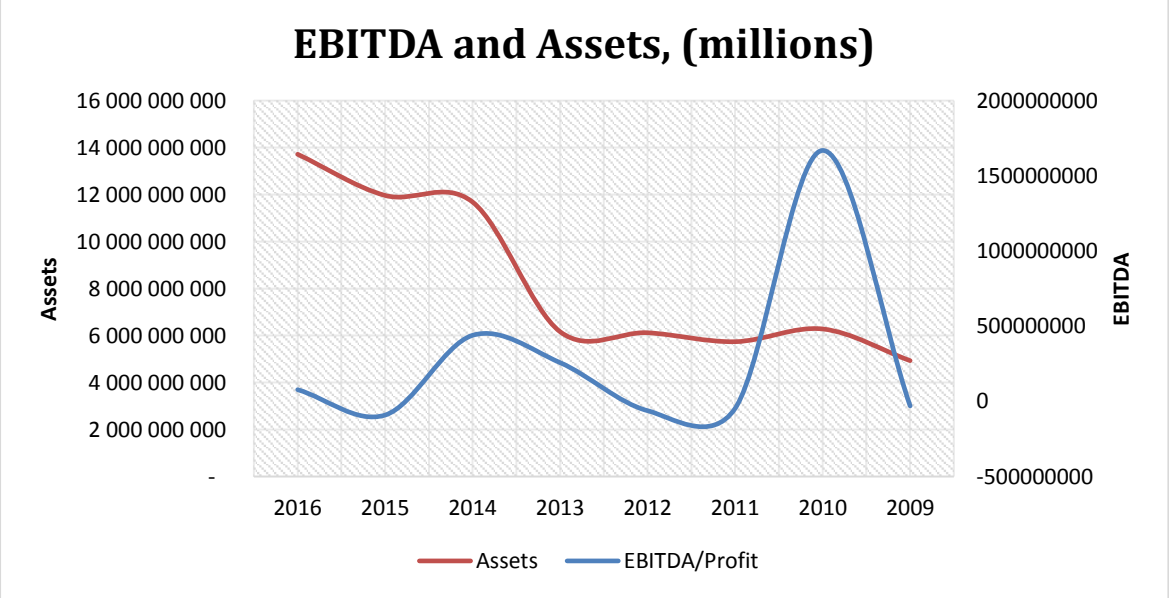


Figure 6: EBITDA & Assets trend

Profitability/EBITDA had a trend that was not constant over the years, it was characterised by short cycles of highs and lows. Between 2009 and 2010, there was a very steep increase in the EBITDA, followed by a record low in 2011. This was followed by a steady increase from 2012 through 2013 to 2014. A steep decline occurred between 2014 and 2015, followed by a slight increase towards 2016. Assets value increased throughout the study period with three periods of lows (2011; 2013, 2015) and four periods of highs (2010, 2012, 2015 and 2016. The steepest increase (gradient) was between 2013/14. Graphically there seems to be no similar pattern between the stochastic trends of ABITDA and assets value.

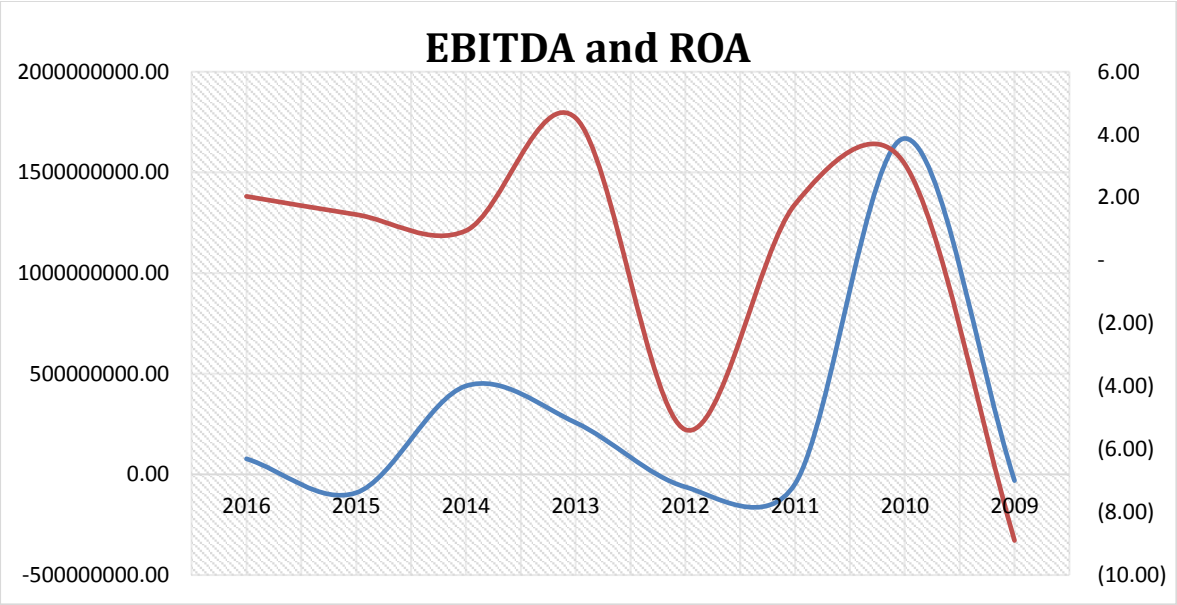


Figure 7: EBITDA & ROA trend

Return on Assets and EBITDA seem to follow a somewhat similar pattern over the years. As ROA drastically increases between 2009 and 2010, so does EBITDA. ROA drastically decreases between 2010 and 2011, so does EBITDA between 2010 and 2012. ROA drastically increases from 2012 towards mid-2013, while EBITDA increases at a decreasing rate towards 2014 before dropping to a record low in 2015. Notably, ROA had a drop in 2015 while EBITDA had a high peak.

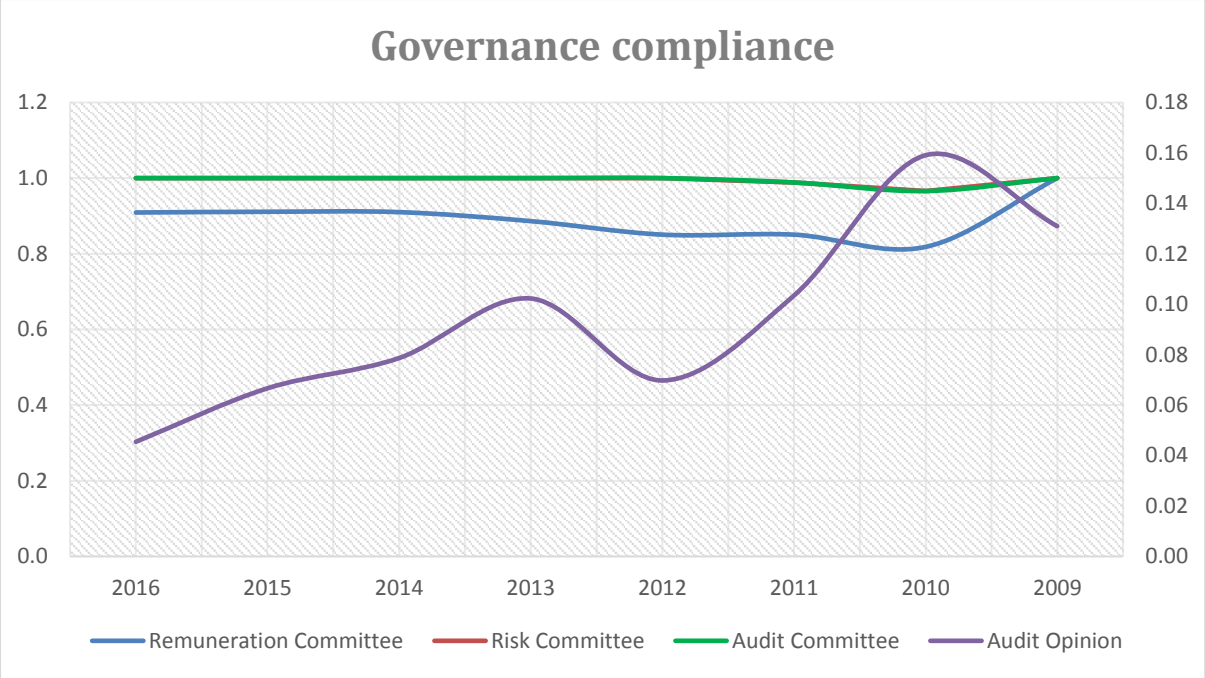


Figure 8: Governance compliance figure

Audit opinion has a stochastic trend, it increases between 2009 and 2010, followed by an accelerated decrease between 2010 through 2011 to 2012. The trend continues with an increase towards mid-2013, followed by a steady decline through 2015, and a record low in 2016. Remuneration committee and Risk committee seem not to have trends, the data series seem to be stationary (a mean and standard deviation that does not vary over time. Such non-trends could affect the inferential models.

5.5 Autocorrelation

When examining the relationship between two continuous variables always look at the scatterplot, to see visually the pattern of the relationship between them and look for outliers (observations lying away from the main body of points). Scatterplots should be produced for each independent with the dependent variables to so see if the relationship is linear (scatter forms a rough line) (Sasieni & Royston, 1996)

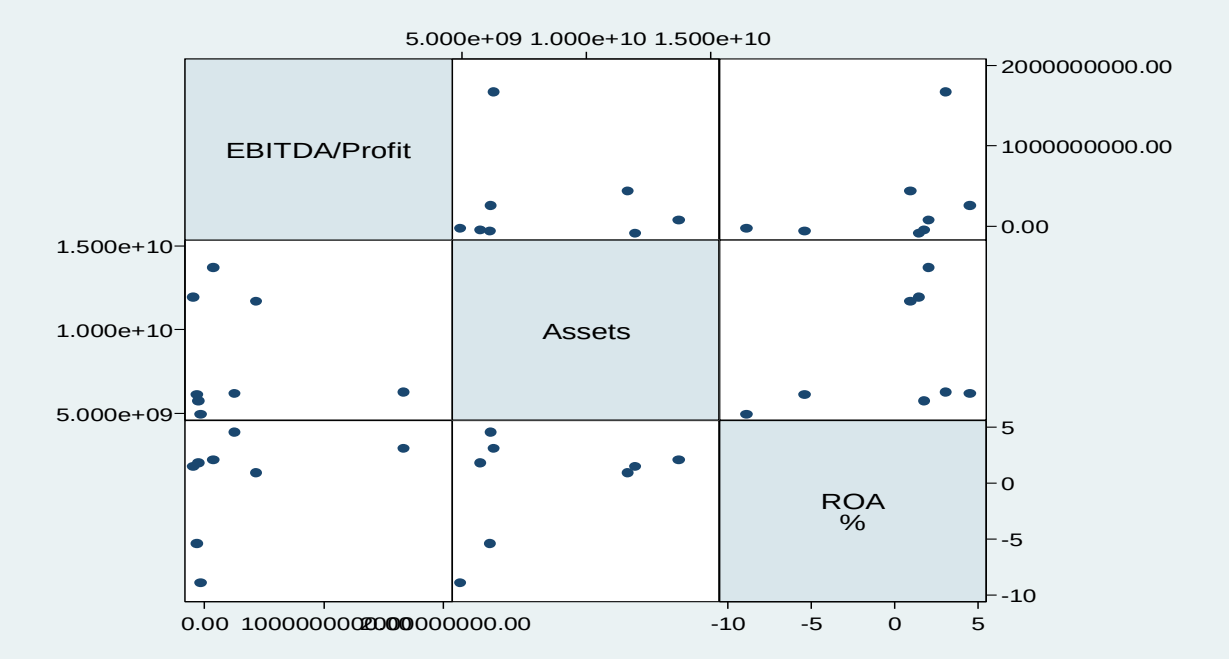


Figure 9: Autocorrelation - Financial

Generally, there seem to be existence of very weak relationship-linear trend between EBITDA and Assets, ROA as well as Assets and ROA. The data points are scattered with weak linear patterns. There is an outlier in EBITDA that is extreme enough to be a data error, so does assets and ROA. The scatter plot shows that there is a moderate relationship between ROA and Assets, with a many outliers, a weak association between EBIT and Assets and ROA.

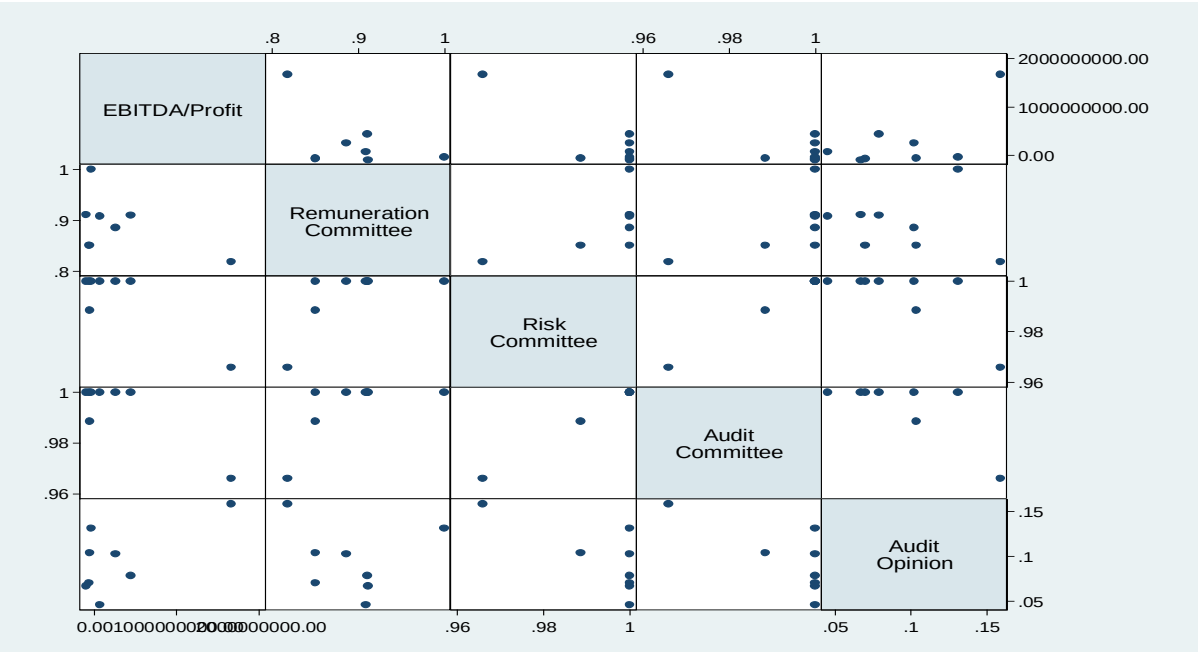


Figure 9: Autocorrelation – Board Committees and outcomes

Figure 9 indicates that EBITDA has very weak associations with remuneration, Risk, Audit and Audit opinion committees, as displayed by the scatter plots with dots that do not reflect a linear line. This pattern is a sign of data that is full of outliers, not normally distributed and skewed.

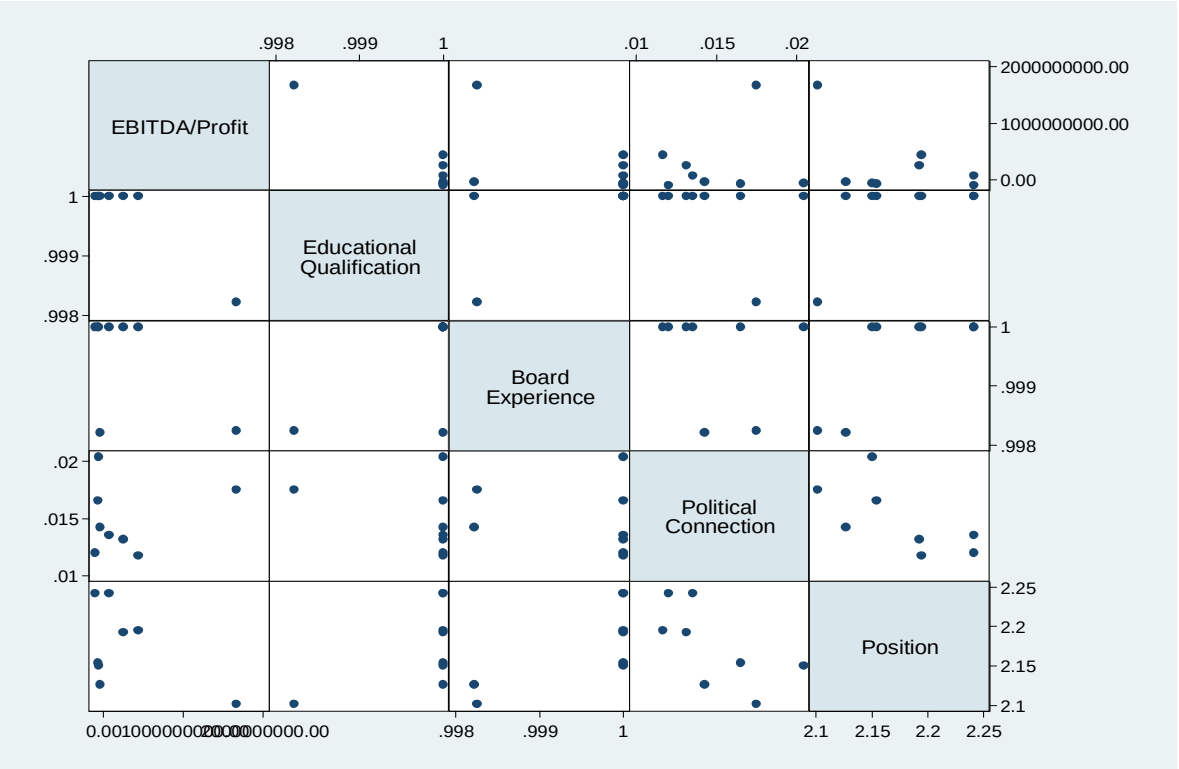


Figure 10: Autocorrelation – Board member attributes

Figure 10 indicates that EBITDA has very weak associations with education qualifications, Board experience, political connection, and position. The scatter plots with dots do not reflect a linear line, a pattern that is a sign of data that is full of outliers, which could be a sign of stationary data (with weak trends). It is to this effect that before running the models to establish the relationship between EBITDA and the independent variables, we must run several tests to ascertain the data is fit to run autoregressive lagged time series analysis.

5.6 Portmanteau test for white noise

Successive values over the years in the time series often correlate with each other (autocorrelation). Correlation of a time series with its own past and future values is called Autocorrelation. White noise refers to the fact that a variable does not have autocorrelation

(Perron, 2006). Series correlation can drastically reduce the degrees of freedom in time series modelling. To be able to test the hypothesis of independence between variables (autocorrelation), a test of the white noise process given by the Ljun-Box-Pierce portmanteau test statistics was used (Ljung, 1978) (Pierce, 1970). The null is that there is no serial correlation.

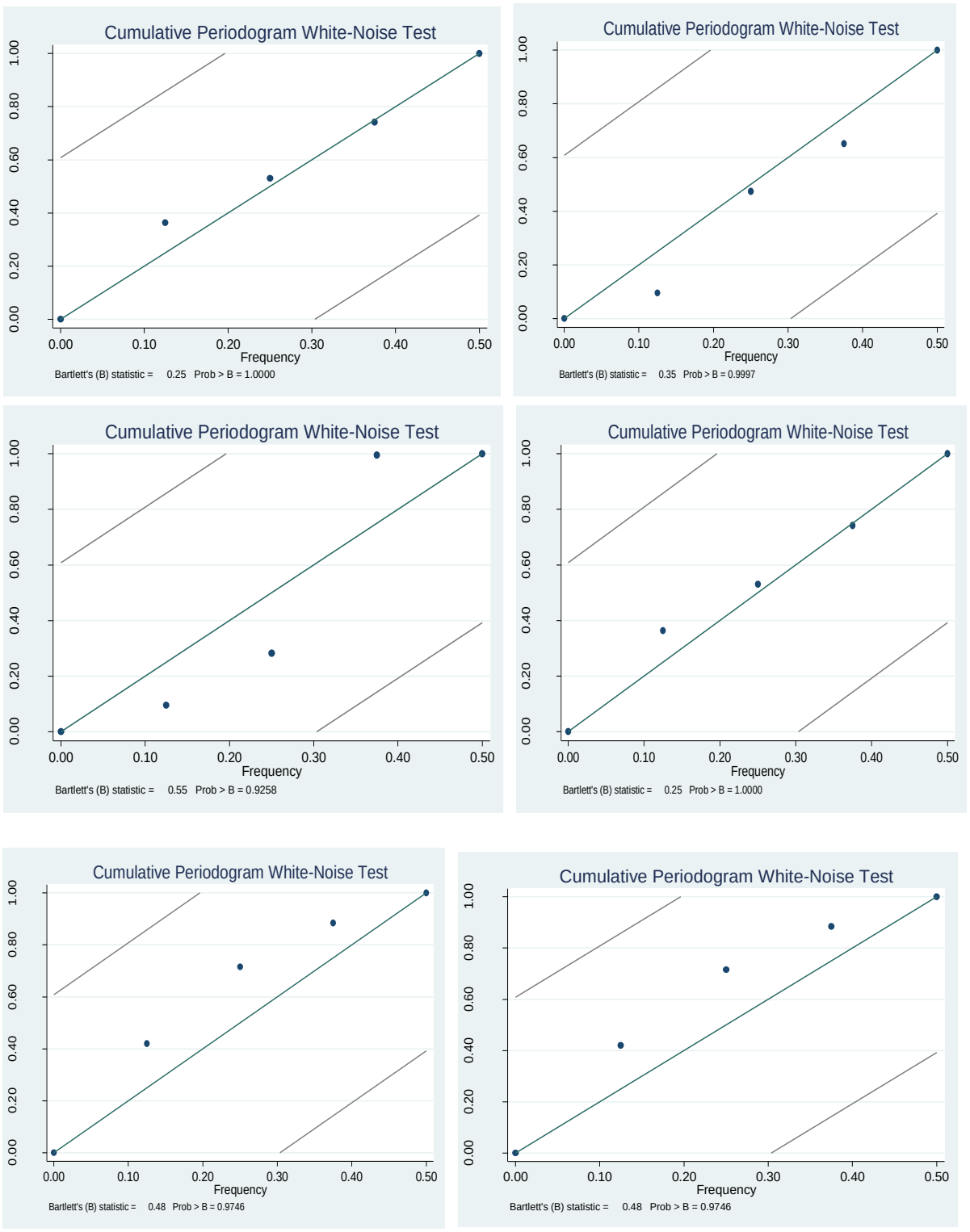


Figure 11: White-Noise Test effects

In the graphs above, most the values appear inside the confidence bands, indicating that there are no strict white noise processes within the data series. The test statistic (p-value) is higher than 0.05 for all the variables. In this case, there is no white noise in all the variables- there are spurious outliers that may affect the analysis (regressions). Because of this white noise non presence in all variables, further tests are done to check for stationarity (existence of trends) of the data. Data has to be stationary for a good model (has to have a trend).

5.7 Normal Distribution test

Tests for normality calculate the probability that the sample was drawn from a normal population. When testing for normality, probabilities > 0.05 mean the data are normal while probabilities < 0.05 mean the data are NOT normal. The data series that do not 'look' normal could lead to misinterpretation of regression analysis. Below is a Shapiro Wilk test of normal distribution.

Table 3: Shapiro Wilk Test for normal distribution

Variable	Obs.	W	V	z	Prob.>z
EBITDA/Profit	8	0.67072	4.587	3.077	0.00105
Assets	8	0.79892	2.801	1.913	0.02788
ROA	8	0.81634	2.559	1.72	0.0427
Remunerati~e	8	0.93071	0.965	-0.056	0.52252
RiskCommit~e	8	0.81998	2.508	1.678	0.04664
AuditCommi~e	8	0.81998	2.508	1.678	0.04664
AuditOpinion	8	0.95806	0.584	-0.811	0.7914
Gender	8	0.90532	1.319	0.461	0.32227
Age	8	0.96479	0.491	-1.055	0.85425
Race	8	0.77422	3.145	2.168	0.01507
Educationa~n	8	0.56517	6.058	3.838	0.00006
BoardExper~e	8	0.98551	0.202	-2.168	0.98491
PoliticalC~n	8	0.91571	1.174	0.264	0.39602
Position	8	0.97181	0.393	-1.352	0.911

Data series are not normal due to outliers or unusual very high and low values displayed in the graphs. Remuneration, Audit opinion, Gender, Age, Board experience, Political connection and position seem to have near normal distribution of the data series. The results confirm those from the scatter plots. The non-normality of distribution could lead to misinterpretation of the general trend of the data, hence it is important to then interpret inferential models with caution.

5.8 The Dickey-Fuller test

Having a unit root in a series mean that there is more than one trend in the series. Testing for unit root implies testing for stationarity in the series. The Dickey-Fuller test is one of the most commonly use tests for stationarity (Dickey & Fuller, 1979). Stationarity means that the marginal distribution of the process (mean and variance) does not change with time. Time series with persistence changing mean with time are non-stationary. For time series analysis, it is imperative to work with stationary process (MacKinnon, 1994). In ADF tests, the null hypothesis is that the series has a unit root. The decision to reject or not to reject the null hypothesis of alpha = 0 is based on the Dickey-Fuller (DF) critical values of the (t) statistic (MacKinnon, 1994). If the DF test fails to reject, conclude that Yt has a unit root, and where there is a unit root then the forecasts can be poor. The following section tests for the presence of unit roots in each of the series.

Table 4: Dickey-Fuller (DF) unit root test

Variable		Test Statistic -Z(t)	1% Critical Value	5% Critical Value	10% Critical Value	MacKinnon approximate p-value	Unit Root
EBIT/Profitability	Z(t)	-3.146	-3.75	-3	-2.63	0.0233	Yes
Assets	Z(t)	-0.148	-3.75	-3	-2.63	0.9444	Yes
ROA	Z(t)	-5.194	-3.75	-3	-2.63	0	No
Remuneration Committee	Z(t)	-4.124	-3.75	-3	-2.63	0.0009	Yes
Risk Committee	Z(t)	-2.032	-3.75	-3	-2.63	0.2726	Yes
Audit Committee	Z(t)	-2.032	-3.75	-3	-2.63	0.2726	Yes
AuditOpinion	Z(t)	-0.913	-3.75	-3	-2.63	0.7838	Yes
Educational Qualification	Z(t)	-2.646	-3.75	-3	-2.63	0.0839	Yes
Board Experience	Z(t)	-1.92	-3.75	-3	-2.63	0.3226	Yes
Political Connection	Z(t)	-1.081	-3.75	-3	-2.63	0.7226	Yes
Position	Z(t)	-0.358	-3.75	-3	-2.63	0.9987	Yes

The critical values at the 10% level of significance are lower than the test statistic (Z(t)) for all variables except for volume. The MacKinnon approximate p-values are greater than p=0.05 except for volume. In this case the null hypothesis is rejected for the presence/existence of a unit roots during all periods is not rejected. This means that the variables have a data series that are stationary, that do not show to vary much over time, hence lack of a trend (evidenced by graphs that have sharp ups and downs. This is likely to influence the inferential models since there seems to be co-movement of the minor trends over time (trend repeats itself). Because of this, the next step is to test whether the integration of these two variables are of the same order- cointegration among EBITDA (profitability) and the explanatory variables.

5.9 Johansen co-integration test

Johansen co-integration test procedure consists of estimating a vector autoregressive (VAR) model which includes difference as well as the levels of the non-stationary variables (Johansen, 1995). The output of VECM is the Johansen-Juselius (1988) cointegration test that was used to determine whether there is a long run relationship between *EBIT (profitability)* and the independent variables

Table 5: Johansen Co-integration Test

maximum				**Trace**	**5% Critical**
rank	Parms	LL	**eigenvalue**	**statistic**	**value**
0	21	-319.213	.	43.7521	29.68
1	26	-301.238	0.67483	7.8031*	15.41
2	29	-298.518	0.15636	2.362	3.76
3	30	-297.337	0.07115		

Johansen-Juselius cointegration test utilizes the eigenvalue of a parameter to test whether the series is cointegrated with another series. Since Johansen-Juselius test is based on the Likelihood Ratio, it is also referred to as the Trace Statistic. At rank=1 the calculated test statistic is lower than the critical value (15.4) extracted from at the 5% level of significance, hence the null hypothesis of no cointegration is rejected. Thus, we accept the null hypothesis that there is one cointegrating equation in the bivariate model. This means that the data series are cointegrated with another series, implying there could be presence of long run relationships between *EBIT (profitability)* and the independent variables over the years. If there is cointegration among the variables in the model, it is possible that there is at least unidirectional causality among the variables (Gujarati, 1999: 623). The next step is to check whether there is a causal relationship between the various variables as stipulated in the hypotheses.

5.10 Vector Error Correction Model (VECM)

Vector Error Correction Model (VECM) is applied to check if the modelling has empirically meaningful relationships (Watson, 1994; Granger, 1981). The table below consists of multiple equations. These equations often are interpreted as long-run or equilibrium relationships between xt (EBITDA) and yt (independent variables). Short-run dynamics which may fluctuate around this long-run relationship can also be established. Long-run causality is determined by the error correction term, whereby if it is significant, then it indicates evidence of long run causality from the explanatory variable to the dependent variable. Short-run causality is determined as before, with a test on the joint significance of the lagged explanatory variables, using an F-test or Wald test. The sizes of the parameters α1 and β1 determine the short-run dynamics of the resulting volatility time series. If α1 is relatively high and β1 is relatively low, then volatilities tend to be more 'spiky'.

5.11 Vector Autoregression

Vector Autoregression (VAR) fits a multivariate time-series regression of each dependent variable on lags of itself and on lags of all the other dependent variables.

Table 6: Vector Autoregression

	Coef.	Std. Err. z	P>z	[95% Conf.	Interval]
EBITDAProfit					
EBITDAProfit					
L1.	7.20	7.09	0	7.20	7.20
Gender					
L1.	-1.24	.0436	0	-1.24	-1.24
Age					
L1.	-1.40	.0028	0	-1.40	-1.40
Race					
L1.	-7.91	.04323	0	-7.91	-7.91
Educational Qualification					
L1.	8.57	0.005	.	.	.
Political Connection					
L1.	7.09	.29509	0	7.09	7.09E
_cons	-8.28	.09510	0	-8.28	-8.28E

R-squared=0.67 Sample: 2010 - 2016

Table 6 suggests that there was no long run causal relationship between EBITDA and demographic factors (age, race, education) and political affiliation. Overall, the output indicates that the model fits well (R-squared=0.67). The large lag coefficients, β1, for education and political connection variables indicate that if there were relationships between the variables, shocks to conditional variance could take a long time to die out, hence volatility could be 'persistent' for this relationship.

Table 7: Position to EBITDA

	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
EBITDAProfit						
EBITDAProfit						
L1.	-0.1329807	0.026322	-5.05	0.043	-0.1845705	-0.0813909
Position						
L1.	5.64E+09	6.39E+08	8.83	0.012	4.39E+09	6.90E+09
_cons	9.14E+09	8.19E+08	11.16	0.000	7.53E+09	1.07E+10

Table 7 suggests that there was no long run causal relationship between EBIT and position (CEO or Non-CEO). Overall, the output indicates that the model fits adequately (R-squared=0.56). The large lag coefficient, β1, indicate that if there were relationships between profitability and position it was persistent.

Table 8: Political connection to EBITDA

	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
EBITDA/Profit						
EBITDA/Profit						
L1.	-0.159	0.193	-0.8	0.423	-0.5484779	0.2303362
Political Connection						
L1.	1.03E	0.548	0.02	0.985	-1.05E+11	1.07E+11
_cons	-1.27	2.809	-0.45	0.65	-6.77E+08	4.22E+08

Table 8 suggests that there was a long run causal relationship between EBIT and political connection (p>0.05)). Overall, the output indicates that the model fits adequately (R-squared=0.69). The small lag coefficient, β1, indicate that if there were relationships between profitability and position it was not persistent, it was temporal.

Table 9: Board Experience to EBITDA

	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
EBITDA Profit						
EBITDA Profit						
L1.	-0.86700	0.178	-4.86	0	-1.216722	-0.5172789
Board Experience						
L1.	-7.43	1.31	-5.66	0	-1.00	-4.86
_cons	7.44	1.31	5.67	0	4.86	1.00

Table 9 suggests that there was a long run causal relationship between EBIT and board experience. Overall, the output indicates that the model fits adequately (R-squared=0.89). The large lag coefficient, β1, indicate that if there were relationships between profitability and position it was persistent.

5.12 Regression analysis

A linear regression analysis has been performed to measure the relationship between two or more variables, an independent variable, represented by the demographic characteristics and the dependent variable (profitability and position), measured through various performance outcomes (Wegner, 2015). This can be mathematically represented in the following equation.

Profitability/EBITDA = a + b1 (gender) + b2 (age) + b3 (race) + b4 (education) + b5 (board experience) + b6 (position) + b7(political connection)

Table 10: Regression with Newey-West standard errors

(dependent variable)		**Newey-West**				
EBITDAProfit	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
Gender	1.32	3.86	3.42	0.181	-3.59	6.23
Age	1.88	3.49	0.54	0.685	-4.25	4.63
Race	1.51	1.33	1.13	0.461	-1.54	1.84
Educational Qualification	-9.81	1.63	-6.02	0.105	-3.05	1.09
Board Experience	1.68	0.54	3.07	0.002	3.45	1.06
Political Connection	1.08	0.37	2.95	0.003	-5.14	3.35
Position	-5.30	0.36	-1.52	0.129	-6.34	2.56
_cons	1.23	2.29	5.38	0.117	-1.68	4.14

Significant results indicate that education qualifications ((β=-9.81), board experience (β=-2.94), and political connection (β=-8.94) have statistically negative impacts on profitability. This suggests that as qualifications, experience and political connections decreased, so did profitability. Table xx indicates that not all results were statistically significant at 5% and 10% levels. Although they are not significant, they are worthwhile since they provide a direction of causality. Gender (β=1.32), age (β=1.88), and race (β=1.51) has as much as 1.3, 1.9, and 1.5 times effect on profitability respectively (p>0.05).

Table 11: Autoregressive integrated moving average (ARIMA) model

		OPG				
Position	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Remuneration Committee	0.40	0.11	3.56	0.007	0.1804	0.6219
Audit Opinion	0.21	0.12	1.73	0.083	-0.0278	0.4555
Gender	-1.98	0.18	-11.1	0.009	-2.3272	-1.6285
Age	0.01	0.01	0.76	0.449	-0.0105	0.0238
Race	1.15	0.47	2.43	0.015	0.2219	2.0705
Political Connection	-0.45	0.12	-12.5	.0.335	-0.3562	1.3459
_cons	0.62	0.84	0.73	0.467	-1.0406	2.2708
/sigma	0.00	0.00	1.14	0.126	0	0.004233

Note: Educational Qualification dropped because of collinearity
Sample: 2009 - 2016 Wald chi2(5) = 1898.49 Log likelihood = 40.3, Prob > chi2 = 0.0000

Remuneration Committee (β=0.40), audit opinion (β=0.21), and race (β=1.15) all have as much as 0.4, 0.21and 1.5 times effect on position respectively (p<0.05), results are statistically significant at 5% level. Gender (β=-1.98) has a negative strong effect on position, being female was associated with being non-CEO. Political connection could have negative impacts on position; the less connected the less probability of becoming a CEO, although the results are not statistically significant. Age has nothing to do with position, the effect is almost zero and not statistically significant.

6 Chapter 6: DISCUSSION OF RESULTS

6.1 Introduction

This chapter discusses the outcomes of the research on based on the hypotheses determined in chapter four. The discussion of the results follows the order in which the hypotheses have been laid out.

i. relationship between between company performance and corporate board structures of the SOC.
ii. Political appointees negatively impact the performance of SOCs
iii. The establishment of a diverse board structure and company performance are positively related

The discussion of the findings has also been referenced to the literature review covered in Chapter three of this research paper.

6.2 Analysis

6.2.1 Board structures and performance

The board structure of the SOC was assessed based on attributes that were set up in the designed matrix, and this covered aspects such as board independence, establishment of board committees, and attainment of positive audit outcomes. Independence is measured through the presence of a high number of non-executive directors in relation to executives within the boards of SOCs, and this has been observed through the following;

- The percentage of politically connected individuals is negligible as per Table 2, and this suggests that the board structures are not infiltrated by a heavy presence of politically appointed personalities. Furthermore, this may imply that there is a high level of adherence to guidelines as set out in the PFMA, Companies Act and corporate governance principles which advocates for the board to assume the responsibility in the appointment of the majority of the board members, including that of the Chairman, and CEO, thus reducing the role of the ministry/state to an insignificant role.

- The current political landscapes in South Africa have also shifted and seen an active participation from the official opposition parties such as the Democratic Alliance (DA) and the Economic Freedom Fighters (EFF), as they have been actively involved in ensuring that the management of SOCs are not infested with political appointees. The most notable examples are;
    - Legal actions by the Public Protector to remove the interim COO of the SABC
    - Active participation by the opposing political parties to ensure that the former CEO of Eskom (Brian Molefe) is denied a platform to be reinstated to his position post his initial resignation when he attempted to pursue what would be deemed a failed political career
    - Direct involvement by the opposition parties to nominate suitable candidates to serve on both the interim and official SABC board
    - Participation in parliamentary processes to hold SOCs accountable

Furthermore, the outcomes from Figure 2 above suggest that the role of CEO and Chairman are held by two different people, and that there is high prevalence of non-executive directors as represented by a proportion of non-CEO roles. This also means that the level of conformance to the recommendations of the OECD and corporate governance guidelines is adhered to when it comes to ensuring that the roles of the CEO and chairperson of the board are separated, and lastly, the Figure on (governance compliance) is consistent with the literature on board structures and committees, in that there is a consistent prevalence of established board committees in the form of Risk and Audit, coupled with the Remuneration Committee, though these attributes have proven to have a weak relationship with the positive audit outcomes (unqualified audit opinion). The descriptive stats outline a stochastic trend on audit opinion, it increases between 2009 and 2010, followed by an accelerated decrease from 2010 through to 2012, and this is consistent with the adverse finding by the Auditor General 2013 that SOCs continue to receive adverse audit findings mainly due to a high prevalence of expenditure which in not authorised, fruitless and unaccounted mainly due to perceived inadequacies in their procurement policies and poor accounting practices (Auditor General, 2013).

6.2.2 Political appointees negatively impact the performance of SOCs

Literature as discussed in Chapter three, found that there has been little evidence within the SOCs in Italy to indicate that politically affiliated directors have an impact on the performance of the SOCs. The results from the regression analysis tests as indicated in table xxx confirms that political connection have statistically negative impacts on profitability. This suggests that as political connections decreased, so did profitability.

The outcome further suggests that a politically connected personality does not have direct influence on the entity's performance, more when the entity has close ties to the government. This is in contrast to Ferreira (2010) who purports that firms choose directors for their characteristics, and that different board compositions provide diverse connections with the outside environment such as competitors, suppliers, investors, politicians, the media and other stakeholders, and as a result, the director's characteristics could affect their competency, incentive to monitor and advise managers, and create an avenue to be pursued in maximizing shareholder value or protect the interests of executives (Ferreira, 2010). These results may suggest that perhaps politically connected individuals based within the private sector are more likely to benefit and contribute to performance growth of their entities as they can source business opportunities with the state and leverage on their existing relationship.

6.3 The establishment of a diverse board structure and company performance are positively related

6.3.1 Ethnic diversity

The matrix segmented board members in accordance with the demographic classification of the country in accordance with the Broad Based Black Economic Empowerment (BBBEE) Act. The classification refers to Blacks, Whites, Indian and Coloured denominations as a key classification of individuals by race. In accordance with figure 1, the majority of board members have been found to be Black, followed by whites, with a few Indians and Coloureds. Notably, the number of blacks increased each year, while number of Whites decreased. The statistical inference points to a positive correlation between race and performance. The notable increase in black directors may be attributed to a strive to attain the BBBEE targets, while the reduction

in white board members may be attributed to the similarity-attraction theory which found that diversity on the board structures decreases firm performance, as individuals prefer to affiliate with other individuals whom they perceive as like them based on demographic characteristics. This also stems from individuals having experienced similar historical events and simultaneously reaching similar stages in private and family lives. It has also been found that excessive diversity can negatively impact performance because of conflicts and communication breakdowns (Murphy & McIntyre, 2007). The findings suggest that White employees have moved away from state employment in pursuit of career interests within the private sector as they provide clearer career path and have structured approaches in doing business. The private sector has also been found to lack the willingness to transform and accommodate other race groups, and this argument seem to be in support of the similarity-attraction theory.

6.3.2 Gender Diversity

The theory on gender diversity have yielded somewhat opinions that differs, where in Scandinavian countries, there has been evidence of a positive correlation between performance of SOC and gender diversity (Daunfeldt & Rudholm, 2013). The gender metrics are presented in Figure 3 to 5, outline a variety of outcomes as outlined below;

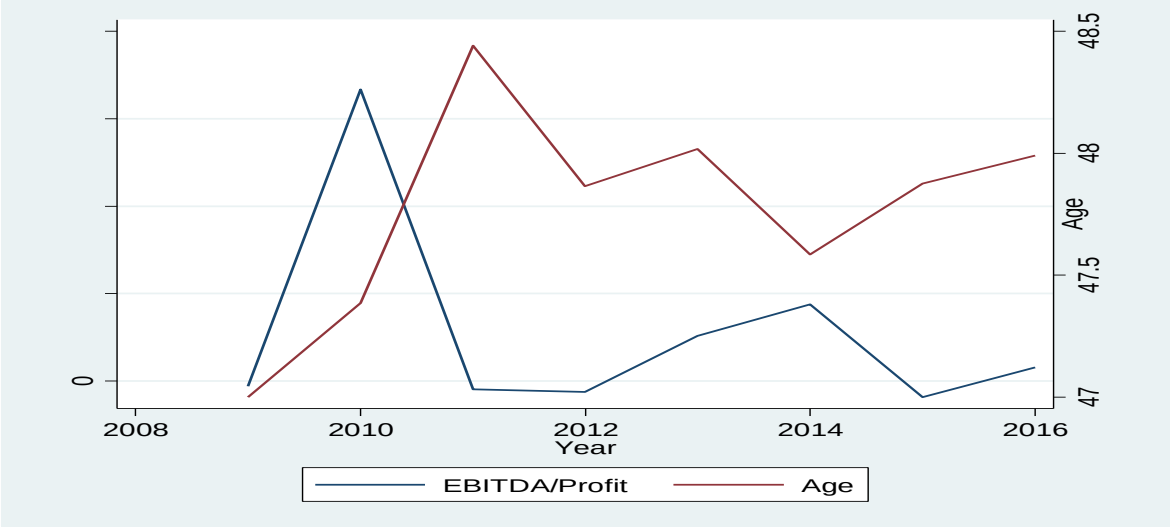
- Figure 3 reflects a CEO profile by gender, and overall there has been an upward trend in 2014, when a dip was recorded, and this may be attributed to the inability to find suitably qualified professional females, coupled with a biased approach towards the appointment of male directors as emphasised by the similarity-attraction theory, where males may adopt a biased approach towards female appoints.
- A similar trend is noted when it comes to the profiles of non-executive directors as reflected in Figure 4, and Chairperson of the board.

In accordance with the Regression with Newey-West standard errors, there is a positive correlation between gender and the level of profitability, as the p value was 0.181, and greater than 0.05 and has proven to be significant, and confirms the finding as found in the literature review. It should also be noted that 2010 provides an outlier in terms of the overall EBITDA/profitability due a spike in economic activities driven by the hosting of the 2010 FIFA

Soccer World Cup, while the year 2011 was impacted by the financial crisis which destabilised the financial sector and led to a general decline in economic activities.

6.3.3 Age Diversity

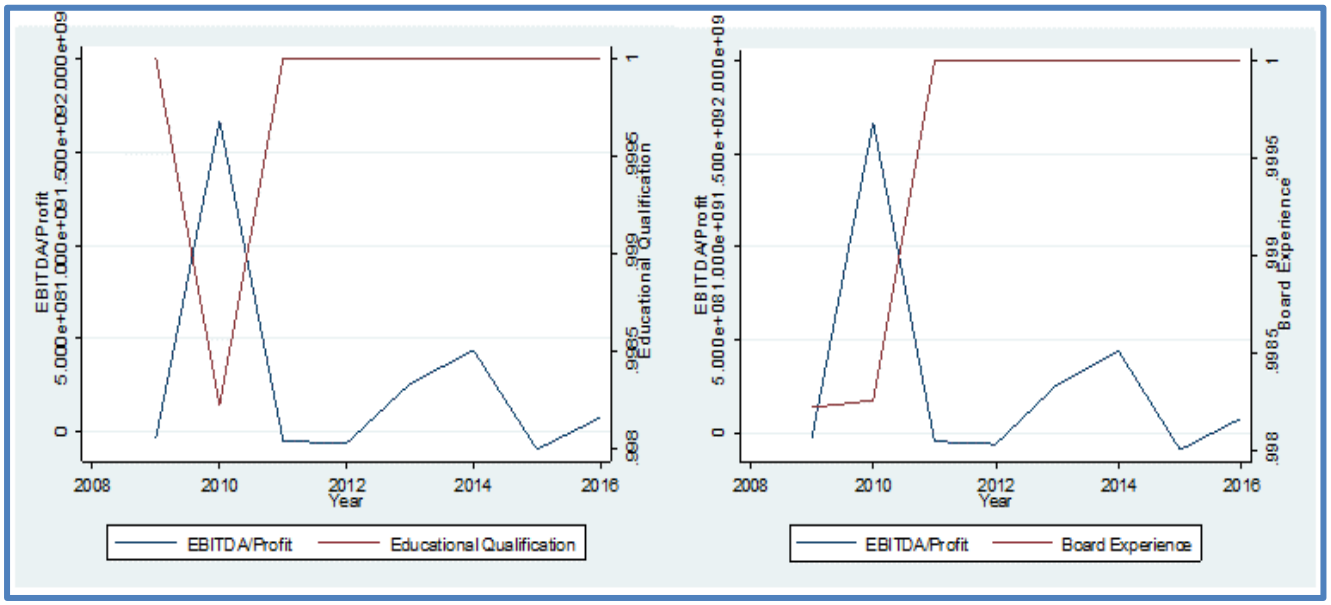
The theory on age diversity indicates that it has a positive effect on team performance in situations where the task is complex (Wegge, Roth, Kanfer, & Neubach, 2008), a finding confirmed by (McIntyre, Murphy, & Mitchell, 2007) in that age diversity was positively related to firm performance. Based on the outcome of the Regression with Newey-West standard errors, age has a positive relationship with the level of profitability, as depicted by a p value of 0.685, which is greater than 0.05, proving the existence of a significant relationship.



From the above graph, the trend suggests that there is an inverse relationship between age and profitability level of the organisation. The average age peaked at around 48.5 years in 2011, yet performance was at one of its lowest point. The same applied to the 2014 results, where the decline in average age of 47.5 years yielded a higher profitability level. This results suggests that the younger generation tend to bring with them new ideas and innovative mindset to drive profitability, while the older generation tend to take longer to new innovative means and technological advancements, which in turn, hampers the overall performance of the SOCs. The results for the financial period of 2010 represents an outlier for reasons related to the hosting of the FIFA world cup.

6.3.4 Board experience and educational background

The principle on good governance outline that a board should be made up of individuals with the right skill set and expertise to assist in driving performance for the business. The findings from the statistical results points to significant results pertaining to education qualifications and board experience as they have a p value greater than 0.05, which statistically means that they have a negative impact on profitability.



Based on the above, 2010 represents a period marked with an outlier, and thereafter, the pattern remains relatively similar in terms of profile, therefore, no inference can be deduced between the variables and the level of profitability.

7 CHAPTER 7: SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The research study assessed the corporate governance elements in SOCs across various industries for a time series that span from the year 2009 to 2016. This chapter presents the main research findings, limitations and plausible recommendations for future research.

7.2 Summary of main findings

The objective of this study was to determine the board characteristics within the SOC structures that can optimize the level of organizational effectiveness, and in doing so two research questions were raised, on;

i. Whether board compositions are essential for SOCs?
ii. What characteristics of a SOC board structure may influence the effectiveness of these organisations and ultimately, their performance?

The attributes essential for determination of corporate governance adherence where existence of the Audit and Remuneration Committee, the proportion of independent and executive directors, availability of politically connected individuals in the board structures. The determination of organizational effectiveness was based on the level of EBITDA/Profitability, return on assets and audit opinion attained. The findings in respect of various hypotheses points to the following outcomes;

H1: The relationship between company performance and corporate board structures is positive

- The establishment of board committees in the form of Risk and Audit, coupled with the Remuneration Committee proved to have a weak relationship with the positive audit outcomes (unqualified audit opinion)
- The boards of SOCs are dominated by independent directors, and that the roles of CEO and Chairman are held by different individuals.

These findings are consistent with previous studies as outlined in Chapter two of this research study.

H2: Political appointees negatively impact the performance of SOCs

- The presence of politically connected individuals is negligible and have a weaker impact on board structure's independence and overall performance measured in terms of ROA and EBITDA level

H3: The establishment of a diverse board structure and company performance are positively related

- Ethnic diversity has been found to have a positive correlation to firm performance
- There is a positive correlation between gender and the level of profitability
- Age diversity has a positive relationship with the level of profitability
- Board experience and educational background has no impact on the level of profitability

7.3 LIMITATIONS

The data collection process and analysis was quite extensive and several challenges were experienced, and this provided limitations which had implications on the findings and conclusions, and these are outlined as follows:

- Inability to cover all SOCs largely due to there being a significant variety of these organisations and time constraint
- Poor quality of financial reports and lack of consistent standards of reporting from SOCs. The disclosures of financial reports are not consistent across all these entities due to an element of subjectivity in terms of what is considered essential for disclosure purposes
- Certain board member profiles were not adequately disclosed, as essential information such as age, racial background and gender were excluded and additional checks were performed using prior year financials or google search engine
- Gaps in financial data which meant certain companies were excluded from the population size
- Existence of biasness as the data selection process ensured that key SOCs such as Eskom, PRASA, SAA and SABC are not excluded from the population
- Lack of transparency due to non-full disclosure of the required information in the financial reports

7.4 RECOMMENDATIONS

This research has extended the study on aspect of board composition and company performance for SOCs. The study results were not conclusive in respect of the inclusion of education and professional background on the strength of the board. The study can be extended to cover additional entities, although the process will be time consuming and monotonous.

Furthermore, the influence of politically connected directors and their role on the quality of the boards can be assessed and extended to private ownership business. Lastly, the application of a qualitative study in addressing this subject may be explored.

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APPENDIX A

Sample of data collection completeness per entity

Listing	Company	2016	2015	2014	2013	2012	2011	2010	2009
1	Accounting Standards Board	x	x	x	x	x	x	x	x
2	ACSA	x	x	x	x	x	x	x	x
3	Agricultural Research Council	x	x	x	x	x	x	x	x
4	AGSA	x	x	x	x	x	x	x	x
5	Air Traffic and Navigation Services Company	x	x	x	x	x	x	x	x
6	Alexkor	x	x	x	x	x	x	x	x
7	Armscor	x	x	x	x	x	x	x	x
8	ASSAF	x	x	x	x	x	x	x	x
9	Brand South Africa	x	x	x	x	x	x	x	x
10	Broadband Infraco	x	x	x	x	x	x	x	x
11	CBE	x	x	x	x	x	x	x	x
12	CCMA	x	x	x	x	x	x	x	x
13	CEF (Pty) Ltd	x	x	x	x	x	x	x	x
14	CGE	x	x	x	x	x	x	x	x
15	CIDB	x	x	x	x	x	x	x	x
16	CIPC	x	x	x	x	x	x	x	x
17	CMS	x	x	x	x	x	x	x	x
18	Competition Tribunal	x	x	x	x	x	x	x	x
19	Council for Geoscience	x	x	x	x	x	x	x	x
20	Cross Border Road Transport Agency	x	x	x	x	x	x	x	x

Sample of demographic data collected

Listing	Company	Board Members	Position	Gender	Age	Race	Educational Qualification	Board Experience	Non Executive	Political Connection
1	ACSA	FRANKLIN SONN	Chairman	Male		White	Yes	Yes	Yes	Yes
1	ACSA	MONHLA HLAHLA	MD	Female		Black	Yes	Yes	Yes	No
1	ACSA	SINDI ZILWA	Deputy Chairman	Female		Black	Yes	Yes	Yes	No
1	ACSA	MARTINA ROLENE WISWE (Tinka)	Company Secretary	Female		White	Yes	Yes	Yes	No
1	ACSA	SELLO HLALELE	Group Executive: Internal Audit	Male		Black	Yes	Yes	No	No
1	ACSA	JOHN NEVILLE	Group Executive: Aviation Services	Male		White	Yes	Yes	No	No
1	ACSA	NICOLETTE KNAPP (Nicky)	Group Executive: Communications and Brand Management	Female		White	Yes	Yes	No	No
1	ACSA	HAROON JEE NA	Group Executive: Commercial Services	Female		Black	Yes	Yes	No	No

APPENDIX B

Sample of financial data collected

Listing	Company	2016						
		EBITDA/Profit	Assets	ROA	Remuneration Committee	Risk Committee	Audit Committee	Audit Opinion
1	ACSA	1 900 000 000	29 875 000 000	6%	Yes	Yes	Yes	Unqualified
2	Agricultural Research Council	(73 000 000)	1 534 000 000	-5%	Yes	Yes	Yes	Unqualified
3	AGSA	104 731 000	1 281 865 000	8%	Yes	Yes	Yes	Unqualified
4	Air Traffic and Navigation Services Company	243 142 007	2 436 671 926	10%	Yes	Yes	Yes	Unqualified
5	Alexkor	(40 652 056)	672 726 634	-6%	Yes	Yes	Yes	Unqualified
6	Armscor	200 100 000	2 824 800 000	7%	Yes	Yes	Yes	Unqualified
7	ASSAF	(6 249 583)	17 887 744	-35%	Yes	Yes	Yes	Unqualified
8	Brand South Africa	23 348 946	27 352 978	85%	Yes	Yes	Yes	Unqualified
9	Broadband Infraco	(91 394 000)	1 558 410 000	-6%	Yes	Yes	Yes	Unqualified

Listing	Company	2015						
		EBITDA/Profit	Assets	ROA	Remuneration Committee	Risk Committee	Audit Committee	Audit Opinion
1	ACSA	1 600 000 000	28 465 000 000	6%	Yes	Yes	Yes	Unqualified
2	Agricultural Research Council	14 000 000	1 592 000 000	1%	Yes	Yes	Yes	Unqualified
3	AGSA	138 003 000	1 197 262 000	12%	Yes	Yes	Yes	Unqualified
4	Air Traffic and Navigation Services Company	283 463 221	2 186 418 050	13%	Yes	Yes	Yes	Unqualified
5	Alexkor	71 355 808	697 254 644	10%	Yes	Yes	Yes	Unqualified
6	Armscor	84 200 000	3 037 500 000	3%	Yes	Yes	Yes	Unqualified
7	ASSAF	3 695 288	18 253 854	20%	Yes	Yes	Yes	Unqualified
8	Brand South Africa	(3 690 182)	14 080 120	-26%	Yes	Yes	Yes	Unqualified
9	Broadband Infraco	(244 693 000)	1 751 466 000	-14%	Yes	Yes	Yes	Unqualified
10	CBE	2 564 000	18 698 000	14%	Yes	Yes	Yes	Unqualified

Listing	Company	2014						
		EBITDA/Profit	Assets	ROA	Remuneration Committee	Risk Committee	Audit Committee	Audit Opinion
1	ACSA	1 700 000 000	27 987 000 000	6%	Yes	Yes	Yes	Unqualified
2	Agricultural Research Council	156 000 000	1 526 000 000	10%	Yes	Yes	Yes	Unqualified
3	AGSA	99 000 000	1 073 000 000	9.23%	Yes	Yes	Yes	Unqualified
4	Air Traffic and Navigation Services Company	244 262 255	1 863 431 085	13.11%	Yes	Yes	Yes	Unqualified
5	Alexkor	47 003 528	904 933 551	5.19%	Yes	Yes	Yes	Unqualified
6	Armscor	103 300 000	2 902 600 000	3.56%	Yes	Yes	Yes	Unqualified
7	ASSAF	4 561 680	17 179 238	26.55%	Yes	Yes	Yes	Unqualified
8	Brand South Africa	(11 241 467)	29 930 264	-37.56%	Yes	Yes	Yes	Unqualified
9	Broadband Infraco	(143 484 000)	2 093 084 000	-6.86%	Yes	Yes	Yes	Unqualified
10	CBE	6 219 000	15 686 000	39.65%	Yes	Yes	Yes	Unqualified

Listing	Company	2013						
		EBITDA/Profit	Assets	ROA	Remuneration Committee	Risk Committee	Audit Committee	Audit Opinion
1	ACSA	991 000 000	28 188 000 000	3.52%	No	Yes	Yes	Unqualified
2	Agricultural Research Council	89 000 000	1 372 000 000	6.49%	Yes	Yes	Yes	Unqualified
3	AGSA	19 000 000	981 000 000	1.94%	Yes	Yes	Yes	Unqualified
4	Air Traffic and Navigation Services Company	194 804 079	1 729 085 391	11.27%	Yes	Yes	Yes	Unqualified
5	Alexkor	29 705 709	906 223 241	3.28%	Yes	Yes	Yes	Unqualified
6	Armscor	1 193 600 000	2 744 700 000	43.49%	Yes	Yes	Yes	Unqualified
7	ASSAF	(80 415)	13 053 717	-0.62%	Yes	Yes	Yes	Unqualified
8	Brand South Africa	(2 227 950)	39 676 759	-5.62%	No	Yes	Yes	Unqualified
9	Broadband Infraco	(174 339 000)	1 609 952 000	-10.83%	Yes	Yes	Yes	Unqualified
10	CBE	2 073 000	8 700 000	23.83%	Yes	Yes	Yes	Unqualified

APPENDIX C

Data coding dimensions

Gender	Code
Male	1
Female	2

Age	Code
25 - 34	1
35 - 44	2
45 - 54	3
55 - 65	4
+65	5
N/A	6

Race	Code
Black	1
White	2
Indian	3
Coloured	4

Educational Qualification	Code
Yes	1
No	2
N/A	3

Board Experience	Code
Yes	1
No	2
N/A	3

Political Connection	Code
Yes	1
No	2
N/A	3

Audit Opinion	Code
Qualified	1
Unqualified	2
N/A	3

ROA	Code
< -15%	1
-15% to -5%	2
-5% to -0%	3
0.1% - 5%	4
5.1% - 7.5%	5
7.5% - 10%	6
10.1% - 15%	7
+15%	8

Remuneration Committee	Code
Yes	1
No	2

Risk Committee	Code
Yes	1
No	2

Audit Committee	Code
Yes	1
No	2

Non Executive	Code
Yes	1
No	2
N/A	3

APPENDIX D

Statistical logs - Refer to excel files

APPENDIX E

Listing of SOCs from the National Government Entities website

APPENDIX F

Ethical Clearance