INFLUENCE OF BOARD ATTRIBUTES AND INFORMATION TECHNOLOGY MATURITY ON PERFORMANCE OF STATE-OWNED ENTERPRISES IN KENYA

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Influence of Board Attributes and Information Technology Maturity on Performance of State-Owned Enterprises in Kenya

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university

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DEDICATION

Dedicated to my parents, Virginia and Charles Nyingi for the discipline they instilled in me; and to my wife Mary Waithiegeni and my children Virginia, Frank and Victoria for their constant encouragement, support and prayers that made the completion of this thesis possible.

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ACRONYMS AND ABBREVIATIONS

BoD : Board of Directors

CCG : Centre for Corporate Governance

CEO : Chief Executive Officer

CMA: Capital Markets Authority

IT : Information Technology

NSE : Nairobi Stock Exchange

OECD: Organization for Economic Cooperation and Development

PSCGT: Private Sector Corporate Governance Trust

ROA : Return on Assets

ROS: Return on Sales

SOE : State Owned Enterprises

TMT: Top Management Teams

UK: United Kingdom

USA: United States of America

DEFINITION OF KEY TERMS

Corporate Governance: Corporate governance refers to the system by which companies are directed and controlled (Cadbury, 2000)

Organizational Performance: Organizational performance refers to the extent to which an organization achieves its intended goals or outcomes (Foreman, 2006; Rojas, 2000). The outcomes may be financial performance outcomes, market performance outcomes and shareholder return outcomes (Johnson & Scholes, 1999; Ochieng, 2016). In this study performance has been captured by examination of efficiency and effectiveness indicators.

Board of Directors: An internal governance mechanism responsible for monitoring and controlling management team (Hitt, Ireland & Hoskinsson, 2009)

Board Attributes: Board attributes in this study refer to board structure, board demographics, board roles and board operating environment. As such the reference is to both the aspects that should be in place for board of directors to perform their functions effectively, the actual board mechanisms and operating environment for the board of directors. Consequently, this review is not restricted to the constructs of board attributes in totality, but to selected dimensions, whose review in relation to organization performance is under

independent headings (Balta, 2008; Namoga, 2011; Zahra & Peace, 1989).

Information Technology Maturity: Managerial characterization of organizations in terms of their evolution in information technology systems planning, organization, control, and integration aspects function. A higher level of IT maturity would imply a significant formalization of planning, control, organization, and integration of IT activities. The integrated firms show a more proactive orientation toward IT and not just data processing, and tight integration between business strategy and IT is cited as a key to firms' success (Gupta et al. 1996).

State Owned Enterprises: Statutorily authorized corporate entity publicly owned by the State or Government and is a legal entity created by a government to undertake its activities with a view to develop and grow its economy. The provisions of establishment of State Corporations in Kenya are set out under the State Corporations Act Cap 446 laws of Kenya (Republic of Kenya)

ABSTRACT

Empirical research on corporate governance and particularly on the role of boards with regards to corporate performance has been growing over the last decade. Most of these studies have focused on listed companies indicating that a lot of attention has been laid in strengthening the corporate governance of these institutions. However, corporate failures and malfeasance continue to be experienced. There has been a spirited effort by the public sector to replicate the corporate governance practices and board attributes set by the private sector but the results in terms of improved performance have been mixed. Increasingly the influence of board attributes, especially structure, role, operating environment and demographics, on organizational performance has been questioned. Considering the uniqueness of having the government and public as principals in governance of state-owned enterprises and the attendant challenges of clarity of objectives, transparency and political insulation, information generation and sharing is critical. The role of information technology maturity of state-owned enterprises in determination of how successfully they are governed by their boards and the ultimate performance remains questionable. This study sought to assess the influence of board attributes on the performance of state-owned enterprises in Kenya applying an integrated analytical framework. The population of the study was the 145 state owned enterprises that had participated in performance contracting over the five-year period 2010 to 2015 in Kenya. Using multistage sampling technique, a stratified sample of 75 respondents was selected from 145 organizations. The main instrument of primary data collection was self-administered semi-structured questionnaire, administered on a stratified sample comprising senior managers. Secondary data was collected from the State Corporations Advisory Committee Secretariat as well as from company secretaries of selected corporations. Reliability and convergent validity of the questionnaire was tested using the Cronbach's alpha and principal component analysis respectively. Descriptive statistics of means and standard deviation of Likert scores were calculated. The study found that board structure; board operating environment, board demographics, and board role and information technology maturity were positively correlated with performance of state-owned enterprises in Kenya. Regression analysis established that board structure; board operating environment and board role had statistically significant influence on performance of state-owned enterprises in Kenya. However, board demographics did not statistically significantly influence performance of state-owned enterprises. Information technology maturity moderated the relationship between and board attributes and performance of state-owned enterprises in Kenya. Further, the four predictor values considered statistically significant (board structure, board operating environment, board role and information technology maturity) accounted for 58.1% of the variations in performance of state-owned enterprises. The study recommends that board attributes that support performance be adopted and considered in development of new codes for governance; and that further research be undertaken applying integrated theoretical framework for corporate governance and taking into consideration external governance mechanisms; longitudinal methodology and comparisons with private organizations in similar sectors.

CHAPTER ONE

INTRODUCTION

This chapter provides a background to the study, definition of key concepts, statement of the problem and research objectives. The chapter also outlines the justification for the study, research setting, conceptual framework and research hypothesis.

1.1 Background of the Study

Corporate governance has truly emerged as a major area of focus in the last two decades in multidisciplinary areas of research – business, management, economics and law- mainly propelled by corporate failures and scandals that have attracted global attention. It is such lessons that have generated issues of corporate governance in a widest sense resulting to an increasing emphasis on corporate governance codes and recommendations aimed at facilitating transparency and accountability of the management processes within organizations. Good corporate governance practices' role in enhancing the performance of government linked and funded institutions governance structures has been highlighted in the recent past and focus on ensuring that strategies are of interest to all stakeholders and relevant sectors (Waduge, 2011).

Numerous studies have investigated the essential features of corporate governance; most of the discussion on corporate governance has been driven by concerns regarding the effectiveness of board of directors that is assumed to represent the interests of the owners through controlling the opportunistic behavior of organization managers and through provision of resources to the firm. The increasing interest on Corporate Governance in Kenya may be ascribed to prevalence of issues such as dysfunctional boards, executive misconduct and international pressures for a more shareholder-oriented model of governance.

The board of directors, an internal mechanism of governance is widely considered as the most important mechanism in corporate governance (Hermalin & Weisbach,2003; Namoga,2011; Shleifer & Vishny,1997) and its responsibilities including: monitoring and controlling the top management team (Hitt, Ireland & Hoskinsson, 2009), service role and strategic role (Zahra & Pearce, 1989) that are premised on the theories (Maassen,1999) of agency, resource dependency, stakeholder, stewardship, institutional, managerial hegemony is critical in determining the performance of the boards and organizations (Ochieng, 2016; Balta, 2008; Ongore, 2008).

Board structure and demographics (Daily & Dalton, 1992; Letting 2011) are considered to be critical elements in determining the performance of boards and thus the overall organizational performance. However, these relationships are not simplistic and may be moderated by factors that include stakeholder engagement maturity (Ayuso, Rodriguez, Garcia & Arino, 2007), Information technology maturity (Dutzas, 2008; Wibowo, 2011) and institutional features (Yermack, 1996).

There have been several cases of board backed ousters of state corporation executives such as those experienced at Communication Commission of Kenya, National Social Security Fund and Postal Corporation of Kenya; coupled with rising tension between directors of SOEs and the chief executives and divisive call for one stop oversight authority (National Assets Holding Corporation) in attempt to resolve constant wrangling between boards and management. Further, the contention regarding diversity in composition of boards of SOEs, rallying calls for increased public participation in recruitment of directors and senior management of SOEs in line with the Constitution of Kenya (2010) and lining up of several SOEs for privatization have raised the clamor for reviewing the governance structures of state owned enterprises (Kisero, 2012).

Additionally, persistent pressure on commercial corporations to generate increased returns in form of dividends and non-commercial enterprises to deliver services in a cost effective manner as well as pressure to align with parent ministry and Treasury's strategic objectives (Irungu, 2012; Kisero, 2012; Michira, 2012; Omwenga, 2012) have

called into question the contribution of boards of directors in enhancing performance of state corporations and thus the need for further examination of the context in which the boards operate to deliver their mandate and in particular, the critical appraisal of role of information technology in enhancing the engagement of the boards as agents and the public as principals.

State Owned Enterprises (SOEs), or parastatals, are businesses that are owned and managed by the government for the purposes of meeting both commercial and social goals (Centre for Governance and Development, 2005). The SOEs contribute significantly to the Kenyan economy in terms of not only offering products and service to the citizens of Kenya but also by offering employment (Koigi, 2011). Although, the exact performance may not be well backed through matched investments, the SOEs sector share of GDP was 11% between 1986 and 1990 (Centre for Governance and Development, 2005) and they have accounted for about 20% of the wage employment in the public sector (Kenya National Bureau of Statistics, 2006).

Despite this acknowledged contribution, the State Owned Enterprises 'performance in Kenya has been decried as suboptimal (World Bank, 2007). A World Bank's (2000) study on performance of SOE in sub- Sahara Africa that examined the links between SOE and the rest of the economy applying indicators such as factor productivity growth, growth in utilization of inputs and revenue contribution to government established that the performance of SOE was worse than that of private sector. Such poor performance has led to a drain on the exchequer and perhaps explains the pressure for privatization and replication of corporate governance principles applied in private sector (Center for Governance and Development, 2005).

1.1.1 Corporate Governance

Despite the extensive extant literature on corporate governance, there are still differences on what it is and how it is manifested. Shleifer and Vishny (1997) define corporate governance as the way in which supplier of finance to corporation assure

themselves of getting a return on their investments. Broadly corporate governance relates to the way relationships between principals, agents and other stakeholders, who may have differing interests are managed.

Capital Markets Authority (CMA)(2002) defines corporate governance as the process and structure used to direct and manage business affairs of the company towards enhancing prosperity and corporate accountability with the ultimate objective of realizing shareholder long term value while taking into account the interest of other stakeholders. Weiner and Pape (1999, p. 152) view corporate governance as a system where economic, social, political and cultural factors interact under *"*a more or less country specific framework of legal, institutional and cultural factors shaping the patterns of influence that stakeholders (for example managers, employees, shareholders, creditors, suppliers and the government) exert on managerial decision-making".

Kaplan and Norton (2000), take a political perspective and define corporate governance as the connection between directors, managers, employees, shareholders; customers, creditors and suppliers to the corporation and to one another. Cadbury (2000, p. 8) defines corporate governance as "the system by which companies are directed and controlled".

In this perspective, the board of directors is deemed to be a critical link between providers of capital and those who direct the flow of the capital. Notably, there are common themes that emerge from examination of corporate governance dimensions literature such as addressing corporate governance mechanisms from internal and external control mechanisms perspectives. Internal mechanisms are those governance structures that emanate from within the organization and include executive ownership, institutional ownership and board of directors (Jensen & Meckling, 1976). On the other hand, the external environmental mechanisms are those that are exogenous to the organization and include market for corporate control, the regulatory environment, and the competitive environment.

1.1.2 Board Attributes

The board of directors, considered the most critical internal governance mechanism, has received increased interest in literature and is deemed to have the responsibility of monitoring and controlling the top management team (Hitt, Ireland & Hoskinsson, 2009). Board studies have largely been anchored on agency theory, stewardship theory, resource dependence theory, stakeholder theory, institutional theory (Namoga, 2011). The value of these theories in understanding the contribution of board of directors in corporate governance, specifically in attempting to provide explanations as to how board structure and board demographics influence board performance and ultimately the performance of organizations is important.

Prior studies on boards have adopted two methodological approaches- direct and process approach (Namoga, 2011).The direct approach assumes that key board attributes such as size and composition have a direct effect on performance of organizations (Daily& Dalton, 1994) while the process approach proffers the collection and analysis of data on board processes to improve understanding of what boards do and behave and not just how they should look (Balta, 2008, Namoga, 2011; Zahra & Peace, 1989).

There is a prevailing assumption that effective board role is a requirement for good organizational performance as it positively influences organization performance (Ongore, 2008; Kiel & Nicholson, 2003). Boards are generally viewed to perform three critical roles that include monitoring and control role, service role and strategic role (Zahra & Pearce, 1989) and these roles are anchored on the board theories (Maassen,1999) and do actually overlap. The capacity of boards to perform their roles is likely to be influenced by board structure and board demographics as well as other factors such as how they utilize and manage information and stakeholders (Daily & Dalton, 1992; Fama & Jensen, 1983; Hermalin & Weisbach, 2003; Kiel & Nicholson, 2003).

1.1.3 Information Technology Maturity

Technological changes in the business environment have alerted organizations on the need to develop technological policies that are consistent with their business strategies as they embark on improving adoption of technology in the delivery of their products and services. No wonder, effective deployment of information technology has been recognized as one of the single most critical success factors in creating and sustaining competitive advantage for organizations (Duztas, 2008; Porter, 1997).

Wibowo (2011) argues that it is the responsibility of the organization's top executive to ensure that organization's information technology supports the goals and objectives of the organization using variety of structural mechanisms for communication relationship. He suggests that the effective governance of Information Technology may have influence on the bottom line performance of SOEs and that corporate governance regulations is one of the key enablers in this relationship.

The role of information technology in improving governance and transparency structure of organizations has been acknowledged anecdotally. Management information systems reporting, organizations websites, Internet, email and business intelligence systems improve information quality and veracity and thus have the potential to facilitate achievement of key achievements of public enterprises (Duztas, 2008; Wibowo, 2011).

In terms of corporate governance, the utilization of information technology may enhance the connectivity among board members and management and thus facilitate strategic decision making and overall board effectiveness. Considering that Information technology Maturity is ranked high by top management teams as a critical success factor for business today and recognizing that Information Technology is not necessarily related to organization performance, it is important to explore the moderating effects of information technology management maturity in the corporate governance performance relationship. IT Maturity is perceived as the evolution in planning, organization, control

and integration aspects of the Information System function with higher integration implying a more proactive orientation towards Information Technology (Duztas, 2008).

1.1.4 Organizational Performance

Organizational performance is a multidimensional construct owing to differing stakeholders and differing measuring needs (Oluoch, 2014). The construct is interpreted variously and thus definitions and measures applied will vary depending on the context and even the discipline under which studies are undertaken. Strategic management discipline has tended to discuss performance of organizations in terms of economic gain as well or poorly an organization does in market activities. As such it has considered performance in terms of financial performance outcomes, market performance outcomes and shareholder return outcomes (Johnson & Scholes, 1999). Operations Management Perspective views performance in terms of operations effectiveness, customer management and product innovation and as such considers both the inputs and outputs perspectives. This perspective is aligned to the Balance Score Card perspective of incorporating both financial and non-financial measures of performance.

While this taxonomy appears straight forward and use of organization performance as dependent variable in management research is pervasive, the challenge remains determining the methods and aspects of organizational performance to measure (Okwiri, 2010). In literature, it appears that organizational performance and organizational effectiveness are terms often used interchangeably and as such leading to the assumption that measures of performance is also measures of effectiveness (Foreman, 2006; Rojas, 2000) despite the fact that the two have fundamental conceptual differences.

Perhaps one of the most elaborate definitions of organizational effectiveness is that of Robbins (1998), who defines it as the degree to which an organization attains it short-term (ends) and long-term (means) goals, the selection of which reflects strategic constituencies, the self-interest of the evaluator, and the life stage of the organization.

As such effectiveness is construed to be a rating of performance determined by comparing actual performance with the target performance (Foreman, 2006).

Existing literature on corporate governance and performance studies has mainly relied on accounting – based financial indicators, market-based indicators or a combination of both. Van Ness, Miesing and Kang (2009) in a meta-analytical review found that corporate performance has largely been measured using one category of measurement such as accounting, market or Tobin's q and that an application of two or three measures was seldom. In SOEs studies, performance may be best captured by examination of efficiency and effectiveness indicators (Ochieng, 2016).

1.1.5 Corporate Governance and Boards in Kenya

The development of formal corporate governance, and as such the interest in board of directors' roles, may be traced to 1986 when Sessional Paper 1 titled "Economic Management for Renewed Growth" was introduced. This paper called for far reaching reforms in the economic and corporate governance mechanisms. Subsequently, corporate governance was popularized in the 1990s through debates on the role of executive directors spearheaded by leading organizations with interest in corporate governance such as Nairobi Stock Exchange, Capital Markets Authority and Professional association of accountants.

Notably, the 1990s period was also characterized by changes in political governance leading to political pluralism and greater awareness of citizens on their rights to participate in seeking solutions including those for better management of corporations in the country (Ongore, 2008; PSCGT, 2002).Other positive influences in the Kenyan realm of corporate governance and focus on boards have been the establishment of the Centre for Corporate Governance (an affiliate of Commonwealth Association for Corporate Governance) that is involved in creating and dissemination knowledge with a view to improving corporate governance practices and contribution of boards in the

country. So far, the center has developed principles of corporate governance in Kenya and produced a Code of Best Practices for Corporate Governance.

The Capital Markets Authority has also been playing a significant regulatory role and has even issued a mandatory Corporate Governance code for public listed companies, modeled alongside the Centre for Corporate Governance principles of corporate governance in Kenya, compiled in 1999 (Barako, 2007). These bodies are supplemented by other regulatory agencies and professional bodies especially the Institute of Certified Public Accountants of Kenya that issues pronouncements for strengthening financial reporting. Underlying the regulatory framework is the Kenyan Companies Act (Chapter 486, Laws of Kenya) that articulates the general framework for management of registered companies in Kenya and which is substantially based on the UK Companies Act of 1948 (Barako, 2007). The model of corporate governance in Kenya is thus market oriented or outsider system of governance, which is typical in Anglo-Saxon countries, where the role of board of directors is prescribed in law, and management and directors are expected to maximize shareholder value through allocative, productive and dynamic efficiency (Reddy, 2010).

Despite these influences in Kenya, a key impetus in seeking better corporate governance practices has been the intermittent corporate scandals largely manifested in gross mismanagement of corporations especially the state owned ones such as the Kenya National Assurance and Kenya Taxis Company(KENATCO), Kenya National Assurance Company (KNA), Uchumi Supermarkets, Kenya Cooperative Creameries(KCC), National Bank of Kenya, Kenya Meat Commission(KMC), Rift Valley Textiles (RIVATEX), Kisumu Cotton Mills(Kicomi), National Social Security Fund (NSSF), Kenya Ports Authority(KPA)and National Housing Corporation (NHC), Agricultural Finance Corporation (AFC) (Koigi, 2011; Mwaura, 2007; Ongore,2008).The role of board of directors in these cases has been questioned.

1.1.6 State Owned Enterprises in Kenya

State Owned Enterprises in Kenya are statutorily authorized corporate entities which earn revenue from the sale of goods and services and in which the government holds a majority of shares (State Corporations Act (1986). State owned enterprises also referred to as state corporations in which the government has controlling equity interests directly or indirectly or through public institutions are governed under the State Corporations Act (SCA) of 1986. Under the State Corporations Act, state corporations can be established as either statutory corporations or companies. Parastatals established as ordinary companies are governed by the Companies Act.

Notably, unlike a private company that has a single principal and agent, a state-owned enterprise is governed by multiple agents – managers, and the state or public officials while voters who elect public officials are the principals of both board of directors and the State (Mwaura, 2007).State owned enterprises (SOEs) unlike privately owned enterprises are expected to allow for greater political control and influence and as such be able to deliver on tasks that are politically sensitive. Therefore, they have to meet the requirements for both public governance and corporate governance and thus generating the politics versus markets dilemma. State Owned Enterprises (SOEs) are a feature of the public sector landscape that has been in existence for decades in developed and developing countries (Bernier & Simard, 2007). SOEs focus on multiple and conflicting objectives unlike private enterprises (Wong, 2004).

The role of SOEs in the economy through the provision of public services such as infrastructure, transport and energy as well as employment and social amenities is well acknowledged in Kenya (Atieno, 2009; Barako, 2007; Mwaura, 2007). History of parastatals in Kenya dates to the 1950s during the colonial era when they were established to provide services that were not provided by the private sector.

They were thus established in areas of infrastructural services such as ports, railways, airlines, posts and telecommunications; crop marketing, education, health amongst others. The number of SOEs in Kenya has changed significantly over last two decades owing to privatization, mergers and dissolution. In 1995 there were 240 state corporations, but the number has declined to 142 as of 31 December 2011. SOEs in Kenya largely fall under four major categories – utilities, regulatory, commercial and industrial, and development finance (Mwaura, 2007). The State Corporations Act classifies them under eight categories namely financial, commercial/manufacturing, regulatory, public universities, training and research, service, regional development authorities, tertiary education and training.

In the 1990s buoyed by pressures arising from inefficiencies, loss making and poor delivery of services and products as well as pressure from International Organizations such as the IMF (International Monetary Fund) and the World Bank, Kenya begun privatizing parastatals under the popular Structural Adjustment Program. Subsequently, privatization was popularized as the panacea to infusing management efficiency in the state corporations against the failure of state as owner of enterprises to realize competitive business standards. One of the hallmarks of this process was the enactment of Privatization Act in 2005 and attendant creation of a Privatization Commission. Further, the establishment of the Inspectorate of State Corporations Advisory Committee to strengthen the supervisory role and Office of Auditor General for State Corporations is also a notable institutional change. Following the wave of privatizations in the 1980s and 1990s, most governments in developed and developing countries have slowed down on privatization and reconsidered the value of the SOEs in fulfilling certain core functions (Vagliasindi, 2007).

Despite this trend, the performance of SOEs across countries has differed with countries in Africa recording poor performance and yet some East Asian countries like Singapore, Malysia, South Korea and India managing to use their SOEs to contribute to economic development and growth (Kohli, 2004).The possible root causes of decline in

performance of state corporations in Kenya according to the Centre for Governance and Development (2005) study are poor corporate governance, weak legal system, and excessive control over state owned enterprises amongst others.

Mwaura (2007) identified the main reasons for poor performance of state corporations as: conflicting objectives in supplementing the private sector, non-competitive remuneration, lack of autonomy, overlapping regulation, fraudulent transactions as well as conditionalities imposed by international lending agencies. These issues have a governance orientation and appear to be recurrent (Atieno, 2009), thus the compelling need for further examination. To address poor performance, the government of Kenya has institutionalized performance contracting for all its agencies.

Annually, the government publishes the results of evaluation of performance against a set of criteria, the weights of each being set at the beginning of the contract period. The criteria includes: financial and stewardship, service delivery, non-financial aspects, operations and other qualitative criteria. Performance contracts for state corporations are signed at the first level between the government and the board of directors (Obong'o, 2009). The permanent secretary representing the ministry of the corporation signs with the board of the directors on behalf of the government while the board chair and one independent director signs on behalf of the board. The board subsequently signs a performance contract with the chief executive to transfer the responsibility of achieving targets to management (Obong'o, 2009).

1.2 Statement of the problem

Board attributes such as board structure and board demographics have been considered to have a significant influence on performance of organizations (Koech, 2018). This is despite the fact that prior studies on corporate governance and particularly on board of directors' attributes and the relationship with organizational performance have not been consistent whether empirically, methodologically, or even theoretically (Daily, Dalton & Cannella, 2003; Van Ness, Miesing & Kang, 2009).

State owned enterprises contribute significantly to the Kenyan economy in terms of not only offering products and service to the citizens of Kenya but also by offering employment (Koigi, 2011). These enterprises account for about 20% of the wage employment in the public sector (Kenya National Bureau of Statistics, 2006) and approximately 11% of the Kenya's GDP (Centre for Governance and Development, 2005). Despite these critical investments, the state of governance of state owned enterprises and their performance has been decried as suboptimal (Mwaura, 2007; World Bank, 2007) and persistent calls have been made to reform the corporate governance regime of Kenyan state owned corporations (Kisero, 2012).

Governance of state owned corporations has been characterized by board backed ousters of chief executives, divisive call for one stop oversight authority (National Assets Holding Corporation) to resolve constant wrangling between boards and management; contention regarding diversity in composition of boards of SOEs; rallying calls for increased public participation in recruitment of directors and senior management of SOEs in line with the Constitution of Kenya (2010); and continued lining up of several SOEs for privatization.

Additionally, there exists persistent pressure on commercial corporations to generate increased returns in form of dividends and non-commercial enterprises to deliver services in a cost effective manner as well as pressure to align with parent ministry and Treasury's strategic objectives (Irungu, 2012; Kisero, 2012; Michira, 2012; Omwenga, 2012). These issues underpin the reigning questions on contribution of boards of directors (in terms of their attributes and roles) in enhancing performance of state corporations and thus the need for further examination of the context in which the boards operate to deliver their mandate. Further, the role of information technology in enhancing the engagement of the boards as agents and the public as principals has not been adequately appraised (Mwaura, 2007). These contradictions call for further reexamination of the influence of board attributes on performance of state-owned enterprises in Kenya.

1.3 Research Objectives

1.3.1 General Objective

The main objective of the study was to establish influence of board attributes on the performance of state-owned enterprises (SOEs) in Kenya.

1.3.2 Specific Objectives

The study's specific objectives were:

i. To find out the influence of board structure on performance of State Owned Enterprises (SOEs) in Kenya
ii. To establish the influence of board operating environment on the performance of State Owned Enterprises (SOEs) in Kenya
iii. To determine the influence of board demographics on performance of State-Owned Enterprises (SOEs)in Kenya
iv. To establish the influence of board roles on performance of State Owned Enterprises (SOEs)in Kenya
v. To determine the influence of information technology maturity, on the relationship between board attributes and performance of State Owned Enterprises (SOEs) in Kenya

1.4 Research Hypothesis

To examine the influence of each of the independent variables on the response variables, the study tested the following null/statistical hypotheses

H_{01}: Board structure does not significantly influence performance of state owned enterprises

H_{02}: Board Operating Environment does not significantly influence performance of state owned enterprises

H_{03}: Board Demographics do not significantly influence performance of state owned enterprises

H_{04}: Board Role does not significantly influence performance of state owned enterprises

H_{05}: Information Technology Maturity does not significantly influence the relationship between board structure and performance of state owned enterprises

1.5 Justification of the Study

This study is of significance to several beneficiaries. The state owned enterprises have a significant contribution to the economy of Kenya, estimated to contribute over 10% of the Country's GDP in nominal terms and also provide significant employment (Executive Office of the President, 2013). There have been persistent attempts by the state to withdrawal from the sector through privatizations but also demand for establishment of more state owned enterprises. Governance of the state owned enterprises has been cited as a contributor to the varying level of performance of state owned enterprises. Examination of the influence of board attributes on performance is therefore crucial to the organizations themselves, especially the boards of directors and management. The Government, particularly the Treasury and agencies responsible for monitoring the performance of state owned enterprises such as State Corporations Advisory Committee and the Inspectorate of State Corporations will also benefit from information on the relationship between governance variables and performance in terms of efficiency and effectiveness. This study is of benefit to these policy makers in shaping the corporate governance practices that enhance competitiveness.

The study is of benefit to academicians who have interest in corporate governance and state owned enterprises at large as it contributes to the knowledge gap that is currently evident (Ludvigsen, 2010). It provides evidence of the relationship between corporate

governance practices and performance of state owned enterprises and moderating effect of information technology maturity. With regards to board characteristics or demography the study examined the effects of gender, civil service career background of directors and political background and as such enriched the empirical evidence available. Unlike majority of the published studies that have focused on developed countries, this research was situated in a developing country, Kenya.

1.6 Scope of the Study

This study focused on one hundred and five state owned enterprises state owned enterprises created under the State Corporations Act Chapter 446 Laws of Kenya. These are enterprises that had been in existence for at least five years before 31 December 2014. The unit of analysis for the study was the selected state owned enterprises while the unit of observation was top managers of the selected state owned enterprises. Although there are many aspects of corporate governance, the study was limited to the independent variables of board structure, board demographics, board role, and operating and board environment and information technology maturity. The study utilized both primary and secondary data. Primary data was collected between June and December 2016. Performance of the organizations was examined from the effectiveness perspective using the customer satisfaction index and also efficiency perspectives through return on sales and return on assets. Data on performance was collected from secondary reports covering the five year period 2010 to 2015.

1.7 Limitations of the Study

This study focused on internal aspects of governance- board attribute and utilized both scaled up measures to assess the perceptions of the players in state owned enterprises on the influence of identified variable on performance of state owned enterprises. The study covered selected state owned enterprises as a sample to derive conclusions and inferences on the influence of board attributes on performance of state owned enterprises in Kenya. This in itself had a limitation as the optimal results could only be obtained by

examining the entire population. A representative sample was utilized to address the limitation. Further, the study focused on internal mechanisms of corporate governance but it acknowledges that there could be other aspects of corporate governance that affect the performance of state owned enterprises.

The study also acknowledges that a significant proportion of the literature on board attributes is premised on studies undertaken in the developed world as opposed to developing countries like Kenya. Therefore, there may be a limitation on the available literature on board attributes to draw lessons from. To address this limitation, the study explored literature from other sectors and fields to support empirical evidence.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of existing literature that is focal to this study. The literature under review is drawn from across disciplines of management, public administration, and is centered on the themes of corporate governance with emphasis on the role of board of directors, information technology maturity, and board role effectiveness and organization performance. The nature and theoretical underpinnings of concepts within these themes are included in the review.

2.2 Theoretical Framework

Literature brings out at least seven theories that are considered significant to our understanding of the contribution of boards to organizations namely: agency theory, stewardship theory, resource dependence theory, stakeholder theory, institutional theory (Ochieng, 2016; Namoga, 2011) and managerial hegemony theory. This section briefly examines each of the seven important theories of board governance as well as the New Public Management theory that relates to public enterprises which are the focus of this study.

2.2.1 Agency Theory

Agency theory (Berle & Means, 1932; Jensen & Meckling, 1976; Fama & Jensen, 1983) stresses on the board's monitoring and control function. Agency relates to the relationship between principals and agents, and specifically how the principals(owners) ensure that agents (management) act in the best interests of the principals bearing in mind that principals and agents might have incongruous goals and that ordinarily agents will possess more information that the principals. The agency theory asserts that most

businesses operate under conditions of incomplete information and uncertainty. Such conditions give rise to two agency problems- adverse selection and moral hazard.

Adverse selection occurs when a principal cannot ascertain whether an agent accurately represents his or her ability to do the work for which he or she is paid, whereas moral hazard is a condition under which a principal cannot ascertain whether an agent is putting best effort (Eisenhardt, 1989). Fama and Jensen (1983) propose that a board of directors with powers to ratify and monitor the most important decisions as well as ability to hire and fire senior managers reduces the agency problem. As such the proponents of agency theory argue for formal systems of control including budget controls and limitations, audits, incentives that align managers' interests to those of the principals (Jensen & Meckling, 1976), boards comprising outside and independent directors and separation between the role of chairman and that of the chief executive officer (Balta, 2008; Daily & Dalton, 1994). The explanatory power of agency theory in corporate governance research has been questioned (Daily et al., 2003; Hermalin & Weisbach, 2003) owing to scant empirical evidence and the fact that it does not explain the central issue of board impact on performance.

This study sought to determine the influence of various agency dimensions (board structure, board demographics, board role, and board operating environment) and therefore agency theory is considered relevant as it assumes of goal incongruence between the principal and the agent.

2.2.2 Resource Dependency Theory

The contribution that directors make in resourcing organizations has largely been articulated in the resource dependency perspective and formed the early part of research on boards (Pfeffer, 1972; Pfeffer & Salancik, 1978). This perspective has focused on the influence of board of directors in adding value to the organization and specifically the role of directors in providing access to resources by the firm through their linkages to the external environment through their coalitions (Hillman & Dalziel, 2003). The outside

directors are a critical link to the external environment (Pfeffer & Salancik, 1978) and facilitate the organization in responding to external environmental factors (Kiel & Nicholson, 2003). Of key concern also is how organizations select and process information and thus the information technology maturity as a consideration in this study.

Pfeffer and Salancik (1978) assert that information systems reflect the ease of collecting, processing and presenting data, the criticality and utility of information and the degree of need for organizational self-justification. The main criticism of this perspective relates to its use in explaining interlocks, ignoring pressures on organizations and their boards to conform to institutional norms. The resource dependence theory is relevant to this study as it supports the appointment of directors to boards of state owned enterprises owing to their opportunities to gather information and networks variously. It thus attempts to explain how the resources available to the directors can be utilized to enhance performance of the state owned enterprises.

2.2.3 Stewardship Theory

The stewardship theory view directors as the stewards of the organizations and acting in the best interest of the owners. Its underlying assumption is that managers are good stewards of the firm (Donaldson, 1990; Barney, 1991). The steward theory thus focuses on mutual trust between the principals and steward and has implications on the managerial control systems, especially with regards to information sharing mechanisms to address the information asymmetry problem. Bathula (2008) links superior performance of a firm to having more inside directors as they understand the firm better than outsiders and can thus make superior decisions. This argument is also supported by Kiel and Nicholson (2003) who contend that having a majority inside directors makes decision making efficient and effective. Stewardship perspective argues that there is no motivational problem on the side of management and that governance structure should be designed to facilitate high organizational performance rather than bonding management to corporate and shareholder interests (Donaldson & Davis, 1991).

Proponents of steward theory therefore contend that situations where the chief executive officer and the chairman of the board are the same, facilitates a better working environment for management with less complex structure and monitoring routines, and ultimately improved performance. This theory is therefore relevant to this study, applied in a liberalist perspective in defining the roles of the boards in a normative manner based on the assumption that the directors who have delegated authority exercise stewardship and that the operating environment is created and enhanced in such a manner that there is extrinsic motivation.

2.2.4 Stakeholder Theory

Stakeholder theory argues that management has duties and responsibilities to constituencies other than shareholders, which include duties to employees, suppliers, customers, local community and general public (Donaldson, 1990; Donaldson & Davis, 1991; Hills & Jones, 1992). As such management has organization objectives to pursue beyond the owner's main interest of generation of maximum returns and increasing the value of the firm. The main difficulties with this perspective is the challenge in balancing stakeholders objectives and making the necessary trade-offs in practice and thus granting management excuses to justify self-interests. Indeed, according to Jensen (2001), these could have been the causes of the early demise of corporate governance philosophy of state owned enterprises and the failure of the socialist and communist experiment in the last century. In terms of board of directors, the stakeholder theory views boards as the means through which organizations are able to take into account the legitimate interests of various individuals and groups of stakeholders who can affect (or be affected by) the undertakings of the organization (Donaldson & Preston,1995; Freeman,1994).

2.2.5 Managerial Hegemony Theory

Proponents of the managerial hegemony theory perceive boards of directors as mere statutory additions with minimal / passive role in the process of directing corporations

(Kosnik, 1987). As such they consider boards to be management dominated (Pfeffer, 1972) and ineffective in dealing with the agency problems arising from conflicting interests between owners and management of organizations.

This theory views boards of directors as just rubber stamps of management decisions and argues that management carefully select directors, who are inferior to them in skills and expertise and can rubber stamp their decisions (Herman, 1981). The preference of management in this case is external directors who devote limited time to the organization and thus have little knowledge on the activities of the organization and can hardly challenge management decisions.

The board of directors are therefore deemed to be passive, lacking in knowledge about the corporation's affairs and depend entirely on information and insights that are provided by the corporations top management. In such situations, the directors are expected to refrain from overt criticism of management behavior so as not to lose their board seats that are associated with perks and prestige in society (Herman, 1981). This weakens the board's role of monitoring and control and therefore the relevance to this study. The theory is also important in terms of the composition of board for SOEs as effective corporate governance assumes that a board dominated by independent outside directors who have not been appointed by management or have social links with them is more effective.

2.2.6 Theory

The institutional theory argues that over time conventional behavior or practices in organizations, including the role of board of directors, is significantly determined by the institutional environment (DiMaggio & Powell, 1983; Eisenhardt, Kahwajy & Bourgeis, 1997; Judge & Zeithaml, 1992; Peng, Tan & Tong, 2004). In terms of understanding the nature of board structure and practices, Scott's (2000) framework of institutionalization comprising three pillars namely: regulative, normative, and cognitive is key.

The regulative pillar or component considers enactment of legal or regulatory requirements such as corporation law or coercive isomorphism (Meyer & Rowan, 1977; Scott, 2000) requires board of directors to be structured and undertake their responsibilities in certain way. Cognitive pillar considers cognitive pressures that force organizations to carry themselves in certain ways too. Normative pressures also influence changes in board structure and processes in organizations, either in the presence or absence of regulative and cognitive pressures (Miller – Millesen, 2003).

Responding to normative pressures, organizations and their boards embrace norms, beliefs, values and expectations that are not in conflict with their peers and as such are likely to make changes in board structures and process during performance difficulties to gain moral legitimacy or gain normative approval (Meyer & Rowan, 1977; Scott, 2000) based on accepted and accomplished norms(Zucker,1987).

2.2.7 New Public Management Theory

The role of the public as well as the government as principals has recently gained interest in research. The government relies on a multiplicity of agents under various institutional arrangements. As a public principal, the government can have different interests from those it has as a performance contractor thus creating difficulties in balancing the role between political influence and management capacity to act (Lane, 2003; Wicaksono, 2009). The difficulties in balancing arise from the fact that social objectives such as education and health care are mixed with private incentives such as power and prestige that are closer to the individual as a government official (Lane, 2003).

The adoption of private sector management model with emphasizes on accountability and results orientation dubbed “public governance” or New Public Management has gained prominence in the recent past. The public governance proponents argue that it has a focus on intrinsic motivation such as employee involvement, appointments to board and titles for recognition (Wicaksono, 2009). Nevertheless, corporate governance

of state owned enterprises remains unique because of ownership by state and indeed state owned enterprises have some unique challenges compared to the private sector enterprises. This uniqueness was captured by Wong (2004) in his three pillars of SOE reforms as clarity of objectives, transparency and political insulation.

The lessons for corporate governance from public governance propelled the development of Hilb (2004)'s New Corporate governance that aims at keeping the principles situational, strategic, integrated and controlled and aims to balance the value orientation of shareholder with the stakeholder perspective. Hilb (2004) proffers a new, holistic approach to corporate governance which has been popularized as the New Corporate Governance based on a reversed KISS principle: keep it Situational, keep it Strategic, keep it Integrated and keep it Controlled, contemporaneously adding value to shareholders, customers, employees and society.

Perhaps, this one of the best attempts to integrate components of corporate governance that has historically been treated in isolation in research and practice. The situational dimension anchored on institutional theory acknowledges that corporate governance practice differ not only across nations and industries but also across organizational cultures. Strategic dimension is anchored on Stewardship theory (Donaldson & Davis, 1991; Donaldson & Preston, 1995). The integrated board management dimension relates well with resource dependency theory (Daily et al., 2003) whereas the controlling dimension closely related to agency theory (Jensen & Meckling, 1976) and Stakeholder theory (Freeman, 1984).

By adding the state ownership dimension to these definitions, one may argue that the definitions that take an outsider perspective such as those by Weiner and Pape (1999), Kaplan and Norton (2000), and Hilb (2004) apply. However, there are additional elements in the governance of the state owned corporations like political interference and conflicting objectives (Vagliasindi, 2007; Wong, 2004) that may call for additional examination of alternative theoretical perspectives in the discussion and definitions of corporate governance in State Owned Enterprises. The role of operating environment

should be critically examined and thus the consideration of Institutional Theory and New Public Management Theory in literature has been made.

2.3 Conceptual Framework

A conceptual framework according to Kothari (2014) is a hypothesized framework that identifies the model under study and the relationship between the dependent and independent variables or the explanatory variables. It aims at categorizing and describing concepts relevant to the study and indeed maps relationships amongst them.

The conceptual framework presented here was developed from the literature review and contains the conceptual model. This section examines the variables of interest in the study and the expected relationships amongst them. The dependent variable was organization performance while the independent variable is board attributes which is a comprised of four variables (board structure, board demographics, operating and board environment and board role) mutually influencing each other. This relationship was expected to be moderated by the organization's information technology maturity. Board attributes which is the independent variable of this study was proposed to influence the performance of state owned enterprises. Board attributes were assumed to comprise aspects of board structure, board demographics, board operating environment and board role, and which were deemed to be complex and multidimensional and dependent on interactions of various parameters.

Board structure in this study was viewed in terms of board size, board independence, board committees while board demographics was viewed in terms of age, tenure, education, gender and public service and political backgrounds. Board role was viewed in terms of board leadership, stewardship; monitoring and reporting effectiveness while board operating environment is viewed in terms of board culture, information access and formal independence of board members.

Organizational performance was the dependent variable and was measured both in financial and non-financial terms. Financial terms included return on revenue and return on assets while non-financial performance included customer satisfaction and employee satisfaction. The variables were identified and described in the literature review are incorporated the proposed study's conceptual framework presented in diagrammatically in Figure 2.1

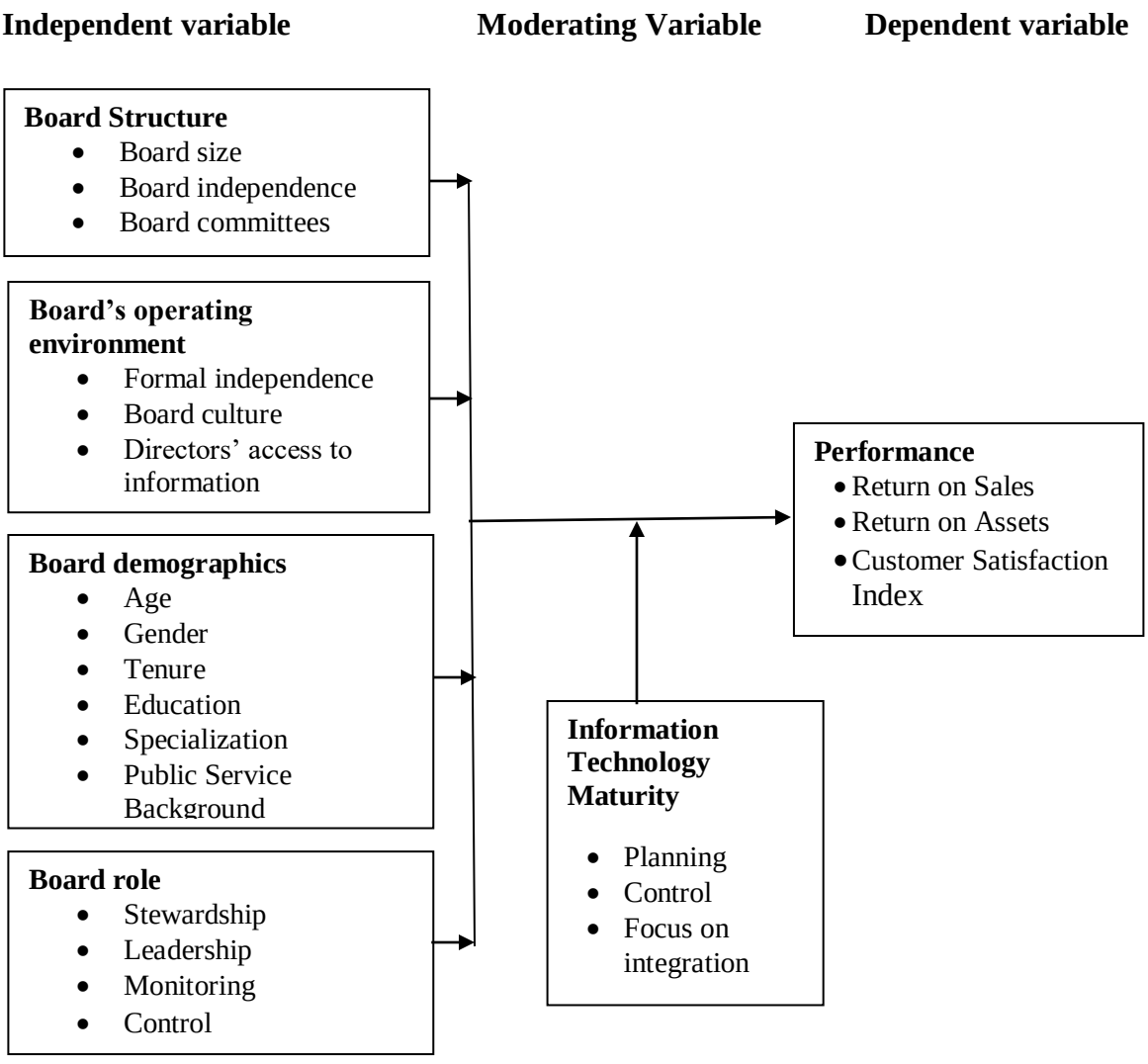


Figure 2.1: Conceptual Model

Review of Literature on Variables

Notably, there are common themes that emerge from examination of corporate governance dimensions literature such as addressing corporate governance mechanisms from internal and external control mechanisms perspectives. Internal mechanisms relate to those governance structures that emanate from within the organization and include executive ownership, institutional ownership and board of directors (Jensen & Meckling, 1976). The board of directors, viewed as the most important mechanism in corporate governance (Hermalin & Weisbach,2003; Namoga,2011; Shleifer & Vishny,1997,) has been extensively examined in literature and is deemed to have the responsibility of monitoring and controlling the top management team (Hitt et al., 2009).

Board characteristics that have been deemed critical in literature include; board size, independent and non-independent members, interlocking, CEO duality as well as individual board member demographics (Letting, 2011). Literature shows differing perspectives on these features as well as their relationships with organizational outcomes. On the other hand, the external environmental mechanisms are those that are exogenous to the organization and include market for corporate control, the regulatory environment, and the competitive environment. Literature on regulatory environment also has differing perspectives on how corporate governance practices are influenced by the regulation in the industry as well as performance (Letting, 2011).

Board studies have largely been anchored on agency theory, stewardship theory, resource dependence theory, stakeholder theory, institutional theory (Namoga, 2011). The value of these theories in understanding the contribution of board of directors in corporate governance, specifically in attempting to provide explanations as to how board structure, board demographics, board operating environment and board role influence the performance of organizations is important.

Prior studies on boards have adopted two methodological approaches- direct and process approach (Namoga, 2011).The direct approach assumes that key board attributes such as size and composition have a direct effect on performance of organizations (Daily & Dalton, 1994) while the process approach proffers the collection and analysis of data on board processes to improve understanding of what boards do and behave and not just how they should look (Balta, 2008; Namoga, 2011; Zahra & Peace, 1989). There is a prevailing assumption that effective board role is a requirement for good organizational performance as it positively influences organization performance (Ongore, 2008; Kiel & Nicholson, 2003).

Boards are generally viewed to perform three critical roles that include monitoring and control role, service role and strategic role (Zahra & Pearce, 1989) and these roles are anchored on the board theories (Maassen,1999) and do actually overlap. The capacity of boards to perform their roles is likely to be influenced by board structure and board demographics as well as other factors such as how they utilize and manage information and stakeholders (Daily & Dalton, 1992; Fama & Jensen, 1983; Hermalin & Weisbach, 2003; Kiel & Nicholson, 2003).

2.3.1 Board Structure

The board plays a major role in protecting the interests of the shareholders/owners of an organization (Fama & Jensen, 1983). The board is ordinarily elected by the owners to act on their behalf and in turn monitors the top management and ratifies key decisions. The structure of the board of directors, which includes board leadership, board composition and board size in delivering the above role, is recognized especially in agency theory.

The focus on board leadership has been on CEO duality, where the CEO is the Chairperson of the board as well as the separation between the duties of chairperson and CEO. As demonstrated in the review of the corporate governance theories, there are varying arguments on the same depending on the underpinning theory- agency theory, stakeholder theory, resource dependency theory, stewardship theory.

Board size, which means the number of directors on the board, may be understood variously from the agency, resource dependency and stakeholder perspectives (Daily & Dalton, 1992). Agency theory argues for larger board to be more vigilant in monitoring and controlling management through greater engagement in review of management actions, while resource dependency theory concurs with regards to large size, its justification is that increased opportunities of co-opting external links and thus obtaining valuable resources will arise (Kiel & Nicholson, 2003).

Further, size is also viewed as being a proxy for director expertise and great asset in strategic decision making (Forbes& Milliken, 1999). Stakeholder perspective argues that the board should be representative of stakeholders of the organization. Past studies have found the average size of a board to be between 12 and 14 members and established that as board size increases, "expertise" and "critical resources" of a firm are enhanced (Pfeffer, 1973). While larger boards may be protective of shareholders' interests (Singh & Harianto, 1989; Conyon & Peck, 1998), they may stifle initiative & strategic actions and generate unproductive interactions (Forbes & Milliken, 1999; Hermalin & Weisbach, 2003) and may have negative effects on strategic change (Judge & Zeithaml, 1992). This means that boards may have difficulties in making critical decisions and thus affect effectiveness in board task performance. The issue of optimal size is increasingly being discussed (Hermalin & Weisbach, 2003) based on Jensen (1993) recommendation of not more than eight members.

The issue of board independence has attracted a lot of interest of scholars, professionals and regulatory bodies, anchored on the argument that high participation of independent directors is needed in the board as they contribute value from diversity. Dalton et al. (1998) contends that "outside directors may be best able to fulfill the control role when they are not encumbered by personal and/or professional relationships with the firm or firm management". This argument is supported by Hillman, Cannella, and Paetzold (2000) and Zahra and Pearce (1989) in their support for contribution of external directors as resourceful persons based on their networks.

Agency theory also proffers outsider dominated boards (Jensen & Meckling, 1976) while stewardship promotes insider dominated boards (Donaldson & Davis, 1991) on the assumption that managers are motivated by intrinsic satisfaction and challenging tasks and should be empowered to participate in boards as executive directors. The resource dependency theory argues for striking of an ideal balance (Namoga, 2011) by acknowledging the contribution of outsiders in accessing resources (Pfeffer & Salancik, 1978) and insiders with information for effective evaluation of managers (Baysinger & Hoskinsson, 1990).

There is limited empirical research on the relationship between board independence and board task performance (Namoga, 2011) with most research attempting to link board independence to organization performance directly (Dulewicz & Herbert, 2004). These studies (mostly focusing on listed firms and applying agency theory) have yielded inconsistent results with some revealing board independence being positively correlated to firm performance (Baysinger & Butler, 1985; Daily & Dalton, 1992) and others showing negative relationship (Yermack, 1996). SOEs have outside directors appointed by government to safeguard the government interests but the question of whether such members are truly independent remains owing to politicization and lack of rigor in appointment and as such the need for further research (Namoga, 2011).

2.3.2 Board Operating Environment

The environment in which board of directors operate has been considered to influence organization performance (Koech 2018). The operating environment of the board is considered from three perspectives according to Letting (2011), the board culture, board information access and formal independence of board members. Darweesh (2015) argues that boards of directors need to be adaptable to respond effectively to opportunities that arise from the environment. This is in line with organizational fit studies that attempt to fit the organizational structure to the external environment.

According to OECD (2015) board of directors do need relevant and timely information for them to play their role effectively and thus contribute significantly to the performance of organization. Information access capability vary amongst board members depending on whether the board members are independent or not; and also between the board members and the organization's managers. Contribution may be enhanced through provision of access to information by improving access to key managers within the organization.

Environmental impact to the success of board of directors has been acknowledged to have significance (Keramati. et al., 2016). Notably, environment varies by the extent of unpredictability and unexpected change (Aosa, 2013) and as such the information uncertainty and resource dependence are critical considerations. The process of perceiving and interpreting information from the environment sources is deemed complex and uncertain (Mwanje, 2017) and the decision makers background do affect impact the direction that the organizations strategically takes. This necessitates the case for co-alignment between the environmental dimensions and strategic orientations.

2.3.3 Board Demographics

Board diversity is another key attribute of board of directors that includes gender, ethnicity, age, functional characteristics such as experience, education, knowledge, occupation, organizational memberships and personal characteristics (Cheng et. al., 2017). Demography generally refers to the composition, in terms of basic attributes such as age, sex, educational level, length of service or residence, race, and so forth of the social entity under study (Oluoch, 2014).

Demographics are considered in the context of diversity. In the view of stakeholder theory, the demographics should be wide enough to accommodate different stakeholders' interests adequately. However, such diversity must be tempered with the shareholders interest. Prior studies on demographics have yielded inconsistent results (Balta, 2008; Ongore, 2008) owing to examination of different characteristics and

application of varying measures of performance. Recently there has been increasing interest in gender equality in organizational life (Namoga, 2011) but evidence to support the effects of women participation in boards is limited.

Prior empirical studies on women participation in boards and firm performance have shown varying results with some such as McKee (2005) and Siciliano (1996) showing positive relationship while Rose (2007) and Balta (2008) showed no significant relationship and Letting (2011) revealing a negative relationship. Other directors' characteristics of interest are their knowledge and education, with a lot of prior studies focusing on the contribution of financial knowledge (Agrawal & Chandha, 2005). The contribution of board members is through committees and the audit committee is considered one of the most critical committees in shaping financial planning and keeping a check on internal controls.

Multiple directorships also referred to as interlocking directorships or cross directorships (Namoga, 2011) has also attracted a lot of interest consistent with the resource dependency perspective of pooling diverse skills and expertise and improving access to resources. Prior studies on multiple directorships and performance have varied in results with some failing to establish any significant relationships (Balta, 2008; Kiel & Nicholson, 2003) others showed negative relationships (Letting, 2011) with some claiming positive relationships with organization performance (Namoga, 2011).

Institutional theory is concerned with the structure of rights and responsibilities among the parties with an interest in the firm (Aoki, 2001) and views corporate governance as a set of self enforceable rules (formal and informal) that regulate the contingent action choices of stakeholders in the organization. Indeed it connects the organization with other domains such as political regime, labor market and legal. In this study institutional theory was applied to understand the organizational characteristics of interest.

The organizational characteristics examined borrowing from prior studies was organizational size and age of the organization. Prior studies have shown the existence of a positive relationship between organizational size with board size (Bennedsen, Kongsted & Nielsen, 2006; Coles, Daniel & Naveen, 2004; Yermack, 1996). In terms of organizational age, prior studies have argued that age reflects accumulated knowledge and experience (Carroll & Harrison, 1998; Lin & Hui, 1999) and that as an organization ages, reliance on rules increases (Zhou, 1993) and aspects of structure and policies dominate (Denis & Sarin, 1998).

2.3.4 Board Role

There is a prevailing assumption that effective board role is a requirement for good organizational performance as it positively influences organization performance (Koech 2018; Ongore, 2008). Boards are generally viewed to perform three critical roles that include monitoring and control role, service role and strategic role (Aggarwal, 2013) and these roles are anchored on the board theories (Maassen,1999) and do actually overlap. The monitoring role is largely anchored on agency theory (Fama & Jensen, 1983) and has been popularized by emergency of corporate scandals (Kiel & Nicholson, 2003; Namoga, 2011).

Board monitoring role has also increased as a result of coercive pressures arising from legislation of board duties (Kiel & Nicholson, 2003) and especially so with capital markets that require boards to enhance oversight roles over management (Vagliasindi, 2008). Critics of this role, argue that boards are weak in monitoring and do exercise passivity in times of satisfactory performance and as such their monitoring may only be necessary when there are critical issues (Namoga, 2011).The service role of the board is premised on the resource dependency and stakeholder theories (Pfeffer & Salancik, 1978).

In terms of resources, organizations appoint external directors to enhance access to resources such as: appointing executives of financial institutions to enhance access to credit, lawyers to provide legal advice, government officers to enhance lobbying (Daily et al., 2003, Maassen, 1999). Board members also serve in managing relationships with key stakeholders perhaps explaining why some government owned institutions emphasize representation of stakeholders to accommodate wide interests (Namoga, 2011).

Strategic role of the board assumes that the boards are critical in providing guidance to management in formulation and implementation of strategies (Mulili, 2012) by applying their professional expertise throughout the strategy decision making process (Koech, 2018). In this case boards are expected to review, evaluate and analyze propose changes to strategies (Zahra & Pearce, 1989) applying their broad range of experience (Kiel & Nicholson, 2003). The strategic activities of boards are best captured by Zahra and Pearce (1989) as: provision of advice to the CEO and management; refinement of strategic plans; initiation of own analysis or suggestions for alternatives; probing of managerial assumptions about the organization and environment; and ensuring alignment on strategic direction.

2.3.5 Information Technology Maturity

Technological changes in the business environment have alerted organizations on the need to develop technological policies that are consistent with their business strategies as they embark on improving adoption of technology in the delivery of their products and services. No wonder, effective deployment of information technology has been recognized as one of the single most critical success factors in creating and sustaining competitive advantage for organizations (Duztas, 2008; Porter, 1980).

Wibowo (2011) argues that it is the responsibility of the organization's top executive to ensure that organization's information technology supports the goals and objectives of the organization using variety of structural mechanisms for communication relationship.

He suggests that the effective governance of Information Technology may have influence on the bottom line performance of SOEs and that corporate governance regulations is one of the key enablers in this relationship. The role of information technology in improving governance and transparency structure of organizations has been acknowledged anecdotally. Management information systems reporting, organizations websites, Internet, email and business intelligence systems improve information quality and veracity and thus have the potential to facilitate achievement of key achievements of public enterprises (Duztas, 2008; Wibowo, 2011). In terms of corporate governance, the utilization of information technology may enhance the connectivity among board members and management and thus facilitate strategic decision making and overall board effectiveness.

Considering that Information technology Maturity is ranked high by top management teams as a critical success factor for business today and recognizing that Information Technology is not necessarily related to organization performance, it is important to explore the moderating effects of information technology management maturity in the corporate governance performance relationship. IT Maturity is perceived as the evolution in planning, organization, control and integration aspects of the Information System function with higher integration implying a more proactive orientation towards Information Technology (Duztas, 2008).

2.3.6 Organizational Performance

Organizational performance is a multidimensional construct owing to differing stakeholders and differing measuring needs (Ongore, 2008; Okwiri, 2010). The construct is interpreted variously and thus definitions and measures applied will vary depending on the context and even the discipline under which studies are undertaken. Strategic management discipline has tended to discuss performance of organizations in terms of economic gain as well or poorly an organization does in market activities. As such it has considered performance in terms of financial performance outcomes, market performance outcomes and shareholder return outcomes (Johnson & Scholes, 1999).

Operations Management Perspective views performance in terms of operations effectiveness, customer management and product innovation and as such considers both the inputs and outputs perspectives. This perspective is aligned to the Balance Score Card perspective of incorporating both financial and non-financial measures of performance. While this taxonomy appears straight forward and use of organization performance as dependent variable in management research is pervasive, the challenge remains determining the methods and aspects of organizational performance to measure (Okwiri, 2010).

In literature, it appears that organizational performance and organizational effectiveness are terms often used interchangeably and as such leading to the assumption that measures of performance is also measures of effectiveness (Odundo, 2012) even though the two have fundamental conceptual differences. Perhaps one of the most elaborate definitions of organizational effectiveness is that of Robbins (1998) who defines it as the degree to which an organization attains it short-term (ends) and long-term (means) goals, the selection of which reflects strategic constituencies, the self-interest of the evaluator, and the life stage of the organization. As such effectiveness is construed to be a rating of performance determined by comparing actual performance with the target performance (Foreman, 2006).

Existing literature on corporate governance and performance studies has mainly relied on accounting – based financial indicators, market based indicators or a combination of both. Van Ness et al. (2009) in a meta-analytical review found that corporate performance has largely been measured using one category of measurement such as accounting, market or Tobin's Q and that an application of two or three measures was seldom. In state owned enterprises studies, performance may be best captured by examination of efficiency and effectiveness indicators (Oluoch, 2014; Okwiri, 2010).

Accounting-based performance uses accounting numbers taken from organization's annual report, which include income statements, balance sheets and statements of changes in financial position. This approach remains an important dimension in helping

organization to determine how well it is performing in the marketplace. It also helps managers to effectively plan, control, and achieves the goals of the organization. However, accounting-based performance are limited in that they capture only the historical aspect of firm performance and are therefore subject to biases from managerial manipulation and differences in accounting procedures (Ochieng, 2016).

The two most applied accounting measures of financial performance are return on net assets (ROA) and return on sales (ROS). ROA is viewed as a measure of efficiency of a firm while ROS reflects how well a firm relates to the environment (Odundo, 2012). Market-based measures unlike accounting-based measures are less vulnerable to differential accounting procedures and managerial manipulation and are a good in representing investors' evaluation of a firm's ability to generate future economic earnings rather than past performance. However, since firms have numerous stakeholders, sole concentration on investors' evaluation may not be sufficient (Pfeffer & Salancik, 1978).

One of the most common market based measure is stock market ratios that relate earnings and dividends to the number of ordinary shares in issue and to stock market prices. These ratios include: Earnings per share (EPS), Price earnings ratio, Dividend yield and Tobin's Q. Tobin's Q compares the value of a company given by financial markets with the value of a company's assets. It is calculated by dividing the market value of a company by the replacement value of its assets and reflects the value added by intangible factors that include governance (Hermalin & Weisbach, 2003; Letting, 2011; Ongore, 2008).

2.4 Empirical Review

This section reviews empirical literature on board attributes and performance with a focus on board structure, board demographics, board role and board operating environment as well as information technology maturity, corporate governance studies, their context and key findings are highlighted.

Koech (2018) examined the determinants of effectiveness of corporate governance in State Corporations in Kenya in terms of the board characteristics, executive and director compensation policies, board audit committee and legal and regulatory framework through application of agency and stewardship theories. The study established that board characteristics, executive compensation, audit committee characteristics, directors compensation policies and legal and regulatory framework were all positively correlated with corporate governance in state corporations in Kenya.

Mbo (2017) examined the drivers of organizational performance in state owned enterprises in Africa analysed 23 SOEs across 10 countries over a 12-year period from 2001 to 2012 and across industries. The study established that the telecommunications industry was the best performing sector in terms of financial and productivity performance owing to competition induced efficiencies in the sector and high level of independent regulation. Power and postal industries were the lowest performers owing to being burdened with diverse stakeholder needs and massive political pressures. In terms of factors determining performance, the study noted that good SOE performance could be explained in terms of agency and resource based theories, with a positive correlation between good performance and strong boards. An indiscriminate pursuit of stakeholder interest was noted to negatively influence performance.

Riza and Ozcan (2016) examined the influence of board size and board composition on performance of 30 Turkish Commercial Banks. The study found that board size had a significant positive effect on bank's financial performance measured by return on assets but did not establish a significant relationship between board composition (measured by ration of outside directors on the board) and the bank's financial performance.

Korir and Cheruiyot (2014) in a study on the influence of board demographics on financial performance of firms listed at the Nairobi Stock Exchange in Kenya established that there was a significant positive influence between board independence and board size, and performance.

Andrés, Guasch, and Azumendi (2011) in their study on governance structures of State owned enterprises(SOEs) in the water and electricity sectors of Latin America and the Caribbean found a positive correlation between corporate governance (based on an aggregate index of board, performance orientation CEO, legal framework and transparency/disclosure) and utilities' performance. Their study underlined the importance of looking at the public sector governance's wider context in the examination of SOEs.

Koigi (2011) in a study on the influence of strategic management, leadership (style and personality) and organizational culture (entrepreneurial and market oriented) and corporate ethics on organizational effectiveness (as measured by overall organizational performance and the performance intent of managers in Public enterprises in Kenya). The study established that entrepreneurial, market and strategic management orientation positively influenced organizational performance and that strategic management positively influenced individual performance intent. The study suggested that leadership styles and leadership personalities be taken into recruitment and development as well as implementation of entrepreneurial, market and strategic management principles to improve performance. Therefore, the manner in which the top management including the board of directors carries out its roles and the relationship with performance was considered to be critical.

In a study on the relationship between ISO 9001 certification status and operational performance of government agencies in Kenya, Okwiri (2010) established that ISO 9001 practices were key enablers of performance and could help in improving performance with appropriate application. The study recommended further study on role of organization size and culture in influencing implementation.

Muli (2015) studied corporate governance-strategic decision making co-alignment, external environment and performance of Mission Hospitals in Kenya through a cross sectional survey and established that corporate governance, strategic decision making, and co-alignment and external environment had a significant joint effect on the

performance of Mission Hospitals in Kenya. Further, there was significant moderating influence of the external environment on the relationship between the independent variables and performance. This study recommended application of secondary data to measure financial and non-financial performance.

In a study on corporate governance, risk management, firm characteristics and financial performance of Commercial Banks in Kenya, Ochieng (2016) established that there was a statistically significant relationship between corporate governance and bank financial performance. This relationship was moderated by firm characteristics, but the intervening effect of risk management was established to be insignificant. The effect of board role on performance was examined in the banking industry in Kenya by Waithaka (2014). The study established that technical expertise of board members, tenure, and independence had significant positive relationship with performance.

Cheng, et.al (2017) surveyed 2,390 directors of global companies about their boards' size and composition, internal dynamics, internal governance, and effectiveness. In this study, most directors rated their board size as just right despite the wide variation in board size, consistent with optimal board size being endogenous. They noted that new board members were typically identified through social networks of executives and board members; low frequency of women and minorities serving in boards; and the use of self-assessments was common in evaluation of boards though the evaluation of CEOs was rated as low.

Naushad and Malik (2015) examined the influence of corporate governance (expressed by board size, duality and agency costs) on the performance of selected 24 Gulf banks. They found that smaller boards were more capable in monitoring the management closely. The dual role of CEO was found to have a positive influence on performance and presence of block holders in ownership structure also had a positive influence in the banking sector. Mang'unyi (2011) in a study of the effects of ownership structure and corporate governance on performance of banks in Kenya established that there was no significant difference between type of ownership and financial performance and no

significance difference between banks ownership structure and corporate governance practices. Further, there were significant differences between corporate governance and financial performance of foreign owned and domestically owned banks. Tusiime et al., (2011) in their study on ownership structure, board structure and their relationship with public sector entities performance in Uganda underlined the significance of board structure and ownership structure in influencing performance.

Oluoch (2014) studied demographic diversity in top management team, corporate voluntary disclosure, discretionary accounting choices and financial reporting quality in commercial state corporations in Kenya. Utilizing secondary data for a ten year period and longitudinal analysis, the study examined demographics of gender, education, tenure, functional background and age.

The results revealed demographic diversity of TMTs in commercial corporations in Kenya influenced the level of financial reporting quality, while education and gender were inversely related to financial reporting quality. In an earlier study by Hillman and Cannella (2007) on the contribution of women in corporate boards, it was established that organization size, industry type, firm diversification strategy and linkages through networks had a significant effect on the likelihood of women representation on boards of directors. Similarly, Bathula (2008) in a study focused on board characteristics such as women in boards, directors with PhDs, directors ownership and CEO duality and their effects on performance of listed companies in New Zealand established that there were significant effects but highlighted the need to examine the effects in developing countries set up.

The context of study of corporate governance practices has also been underlined in various studies. Waduge (2011) studied the relationship between governance and performance of publicly funded Australian Universities. In this study no significant relationship was found between external governance mechanisms and internal mechanisms with performance. However, establishment of councils (boards) was positively related to financial and research performance.

The stage of development of corporate governance practices has also been highlighted as a critical study factor. For example, Melyoki (2005) in a study on determinants of effective corporate governance among industrial corporations in Tanzania using four case studies of listed companies established that the corporate governance was still in its early stages of development, and challenges related to ownership, legal framework as well as board of directors' frameworks being addressed. Atieno (2009) in a study on the corporate governance problems facing Kenyan parastatals in the Sugar Industry had also observed the need to model governance in SOEs in Kenya based on critical understanding of context. The study questioned the applicability of agency and stewardship theories in the context.

Indreswari (2006) in a study on corporate governance of Indonesian SOEs noted that applying agency theory to explain the relationship between agents and the principals was more problematic for SOEs than those in private enterprises because SOEs are loose coalitions of various agents with no real owner. The study recommended the use of agency theory at two levels – at the micro level by examining the agency relationships among SOE management and at the macro level by examining the corporate governance tripod and SOE stakeholders (the public, labor unions, politicians and others). In a study by Wicaksono (2009) on corporate governance of state-owned enterprises with a focus on investment holding structure of Government-linked companies in Singapore and Malaysia and applicability for Indonesian state-owned enterprises, it was established that holding structure should be applied across countries with caution on the context and political decision making process, further underlining the importance of the operating environment.

Odundo (2012) examined the relationship between environmental context, implementation of strategic plans and performance of state corporations in Kenya. The cross-sectional survey study established that political goodwill and support has a significant effect on the relationship between the extent of implementation of strategic

plans and financial performance. However, policy framework did not moderate the relationship with efficiency as a performance measure.

In a study on the impact of business environment and strategic decision making process in listed companies in Greece (Europe), Balta (2008)established that there was no relationship between board size and performance, no relationship between board characteristics and strategic decision making process but positive significant relationships existed between dynamic environment and strategic decision process, and financial reporting and performance. With regards to the board operating environment, Seng (2009) studied capabilities-strategy match and board governance focusing on their impacts on financial performance and accountability for government business enterprises. The study found board governance, percentage of non-executive directors, politically related directors and financial literate directors to be positively related to economic rate of return but unrelated to accountability. Capability strategy match had a strong effect on accountability but not economic rate of return.

Düztas (2008) studied the effects of board characteristics, information technology maturity and transparency on company performance in Turkey. This study found that improved governance practices had some positive effects on company performance; IT maturity has positive effect on company transparency (degree of transparency) and transparency and IT maturity did not moderate the relationship between board structure and company performance. The study particularly recommended further examination of IT maturity and governance relationship in other contexts such as developing countries and other than listed companies.

Ongore et al. (2011) in a cross-sectional study on the influence of firm ownership, managerial discretion and board role effectiveness on performance of Kenyan listed companies observed a significant negative relationship between government ownership and firm performance and significant influence of the board role on performance. Letting (2011) studied the relationship between board of director's attributes, strategic decision making, and corporate performance of firms listed in the Nairobi Stock

Exchange. The study established that there was a positive significant relationship between involvement of executive and interlocking directors in strategic decision making and corporate performance. A non-significant relationship was found between number of non-executive directors and board involvement in strategic decision making and also between demographics and performance.

2.5 Critique of Related Literature

Empirical literature reviewed highlights that determinants of effective corporate governance and performance are numerous. Board characteristics are considered to be one of the key determinants (Koech, 2018; Nguyen. *Et al.,* 2014). However, the conceptualization of these characteristics has been applied in varied manner in different contexts.

Key considerations have been the board size, board composition, board independence and board demographics (Riza & Ozcan, 2016). The relationship between board characteristics and organization performance though studied widely, has consistently yielded varying results some studies showing significant positive relationships (Korir & Cheruiyot , 2014; Ochieng ,2016; Tusiime et al.,2011) while others reveal no significant relationships (Balta, 2008; Letting, 2011; Naushad & Malik, 2015; Mangunyi, 2015).

In terms of influence on performance of state owned enterprises, the studies appreciate the need to study performance applying both financial and non-financial performance measures and preferably applying panel data analysis (Mbo, 2017; Ochieng, 2016). Further, there is acknowledgement that the results found in studies in private sector, listed companies and commercial banks may vary significantly from those of state owned enterprises owing to unique factors of state owned enterprises (Melyoki, 2005; Waduge, 2011). These factors have informed the selection of the measures of performance of return on sales and return on assets for commercial state owned enterprises and customer satisfaction index for all the selected state owned enterprises in this study.

The reviewed studies also reveal that there is need for cautious application of the theoretical framework specifically applicability of agency, stakeholder and resource based theories (Indreswari, 2006; Mbo, 2017; Atieno, 2009; Odundo, 2012). Board demographics and the relationship with performance of organization were also noted to vary. Some studies showed positive and significant relationships (Andrés et al., 2011; Korir & Cheruiyot, 2014; Oluoch, 2014) while others did not yield any positive relationships (Waduge, 2011).

The board and top management operating environment is considered critical in determining organizational effectiveness and performance of organizations (Muli, 2015). The relationship between board role and performance of organizations was also noted to be significant (Ongore et al., 2011; Waithaka, 2014) when considered jointly with the board demographics. However, this may vary depending on the nature of study design and whether or not the views of the directors themselves are examined (Cheng et al., 2017). The need to examine information technology maturity and its relationship with corporate governance and performance of organizations is also highlighted as results are inconsistent (Düztas, 2008).

Most of the studies reviewed were noted to have been undertaken in the developed world context and private sector in particular. The observations regarding the need for studies in developing economies and also in public sector context have been considered in the selection of the design and variables for this study. This study is focused on board structure, board operating environment, board role, board demographics and information technology as the explanatory variables and performance of state owned enterprises as the dependent variable.

2.6 Research Gaps

The corporate governance practices applied in developed countries may not be replicated with success in developing countries owing to environmental differences (OECD, 2015). There is acknowledgement that there has been little research in corporate governance

and in particular on board attributes and dynamics, in developing economies specifically those in Africa. This calls for more research to build evidence to support development of models of corporate governance that suit conditions in each developing economy.

The Kenyan government is making attempts to strengthen the governance regime of state owned enterprises so as to ensure that the enterprises run more efficiently and effectively (Executive Office of the President, 2013). The need for more research on corporate governance in Kenya cannot be overemphasized. This study is therefore an effort to bridge the existing gap in literature. The study design is informed by identified gaps that relate specifically to investigating relationships between board of directors attributes and performance of state owned enterprises (Koigi, 2011) considering improvements in methodology by testing various moderating variables (Koech, 2018) such as information technology management maturity (Duztas, 2008) stakeholders (Indreswari, 2006), diversity (Hillman & Cannella, 2007), sectoral contribution (Andrés et al., 2011) and improving the theoretical framework selection (Odundo, 2012).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the proposed research methodology for the study. Since the study's main objective was to test the relationship between corporate governance practices on performance of state owned firms, the design was informed by prior research into these relationships. The chapter outlines and discusses the research design and methodology that was applied beginning with the identification of the population for the study, sample selection and data collection and analysis.

3.2 Research Design

3.2.1 Philosophical Orientation

At the philosophical level, researchers respond to three basic questions that relate to the ontological, epistemological and methodological assumptions underpinning the research. Ontological assumptions relate to the form and nature of reality and how it exists (Parkhe, 1993). The key consideration is whether social entities can and should be considered objective entities that have a reality that is external to social actors or whether they should be treated as social constructions built up from perceptions and actions of social actors (Bryman & Bell, 2003).

Epistemological assumptions establish the relationship between reality and what is to be known and as such relate to what is or should be regarded as knowledge in a discipline thus yielding the positivism, interpretivism and phenomenological schools (Parkhe, 1993; Bryman & Bell, 2003). Methodological assumptions relate to techniques used to acquire research data (Zikmund, 2010) and the two major paradigms are quantitative and qualitative (Bryman & Bell, 2003).

This study adopted a positivist philosophy by examining what causes particular relationship. As such it was positivist paradigm applying deductive reasoning and quantitative techniques. Babbie (2010) asserts that positivistic research attempts to explain social phenomena by establishing a relationship between variables which are information converted into numbers and thus the term quantitative research. The research objective of this study was to examine the influence of selected variables on performance of state owned enterprises, and as such quantified the significance of the relationships between or among the variables guided by a quantitative approach. The reasoning was deductive because, hypothesis was developed first followed by data collection to confirm or fail to confirm the hypothesis or propositions.

3.2.2 Research Design

Research design specifies the framework of how research is conducted in order to solve the research problem (Bryman & Bell, 2003) taking into account the purpose and resources available (Cooper & Schindler, 2010; Zikmund, 2010). In view of the philosophical orientation chosen and described above, this study was a descriptive study as it aimed at describing the characteristics of a population or phenomenon (Zikmund, 2010) as well as exploratory as it began with identification of gaps in existing literature and reaffirmed the relevance of the research problem (Parkhe, 1993; Zikmund, 2010).

The study utilized descriptive cross-sectional survey design. Cross sectional design takes a snapshot of a population at a point in time and thus allowing conclusions about phenomena across a wide population to be drawn through data collection and testing of relationships (Cooper & Schindler, 2010). The design has been applied by prior researchers amongst them: Koech (2018), Odundo (2012), Letting (2011), and Irungu (2007) who were able to test hypothesis and derive plausible conclusions.

3.3 Target Population

Population refers to the aggregate of all cases that conform to the same designated set of specifications (Paton, 2002) and to the entire group of individuals, events or objects having common observable characteristics. The target population according to (Mugenda & Mugenda, 2008) is the entire set of units for which the study will be used to make inferences.

According to the report of the Taskforce on Corporations Reforms (2013) the actual number of state owned enterprises is 187. The Taskforce recommended reclassification of the state owned enterprises into five categories namely purely commercial agencies, agencies with strategic function, regulatory agencies, executive agencies and research institutions, public universities, tertiary education and training. This study target population was 145 state owned enterprises that were in existence for a period of at least five years prior to 2013 and had participated in the performance contracting exercise (Office of the Prime Minister, 2012). These were believed to have the knowledge in the study area. The list of state owned enterprises/corporations is included as Appendix I.

3.4 Sample and Sampling Technique

A study of this nature with a heterogeneous population and with a manageable number would ideally have sought to obtain information from all the organizations (Odundo, 2012; Okwiri, 2010). However, with the mix of issues for examination, need for accuracy of data, cost and time constraints, a sample is considered the best for reliability, accuracy and speed in data processing. The sample size was determined using Mugenda and Mugenda (2003) statistical technique for selecting a sample from the target population. Given the population above and in accordance with Mugenda and Mugenda (2003), the sample size of the study was 75. The study applied stratified sampling to establish the number of respondents in each class. The following formula was used to calculate the sample size:

$n = (z^2\ p\ q)/d^2$

Where:

n = is the desired sample size when the target population is > 10,000.

z = standardized normal deviations at a confidence level of 95% which is 1.96.

p= the proportion in the target population that assumes the characteristics being sought.

q = 1-P, which in this case will be 1- 50% (0.5).

d = Significance level of the measure, that is at 92.15% confidence level the significance level is 0.0785 Using the above formulae, the number of companies to be sampled was calculated as below.

$n = (1.96^2 \text{ X } 0.5 \text{ X } 0.5)/ (0.0785)^2 = 155$

Target population in this study is less than 10,000, thus the sample of 155 was adjusted using the formula below (Mugenda & Mugenda, 2003).

nf = n/(1+n/N) where nf is the desired sample size when sample size is less than 10,000 and n is the sample size when the target population is more than 10,000.

N is the target population size.

nf = n/(1+n/N) = 155/(1+155/145) = 75

Sampling was systematic with organizations being arranged in alphabetical order after stratification by sectors. In terms of stratification of population, the study considered the categorization of the performance of state owned enterprises by the five categories as outlined in

Table 3.1: Population Stratification and Sample

Category	Sampling Frame	Sample
Public Universities	7	3
Training and Research Corporations	11	5
Service Corporations	37	15
Tertiary Education and Training Corporations	6	2
Regulatory	29	15
Commercial /Manufacturing	33	24
Financial	22	11
	145	**75**

Observations, feelings and attitudes of the members of these corporations can be considered as indicators of the orientation of these organizations and as such the extent, nature or level of application of governance practices, information technology maturity can be discerned from these observations, feelings and attitudes. As such, primary data regarding selected attributes was obtained from informants drawn from senior management of the organizations.

Senior managers of state owned corporations at director level were considered to have the knowledge and understanding regarding these attributes. The study therefore targeted the senior managers as the respondents. The total number of senior managers at director level in these organizations was established to be 5. The target number of respondents was therefore 375 (5 for each of the 75 selected organizations). Since the unit of analysis was the organization and the interest was the sample means for each organization rather than the individual questionnaire, the sample was deemed adequate being greater than four as recommended by Zikmund (2010).

3.5 Data Collection Instrument

The study utilized both primary and secondary data. Primary data based on issues derived from review of extant literature as well interviews with experts, was collected using a semi structured questionnaire. The questionnaire was structured to gather the following: general information regarding the state enterprises, the board structure, board demographics, board role, and board operating environment, and information technology maturity.

3.6 Data Collection Procedure

Data for the study was collected by administering the specially designed questionnaire to a sample of 375 senior managers of state corporations in Kenya. The target respondents in this study were chief executives of state enterprises, the corporations' secretaries, and three senior managers. These were considered appropriate as they have interactions with the board of directors and information that was required for this study. The questionnaires were completed in the presence of the researcher or the research assistants. The respondents who felt they could complete their questionnaires during their free time were allowed to do so and then the questionnaires were collected later. To encourage open responses to sensitive questions, the questionnaire was anonymous. The completed questionnaires were then collected for analysis.

Secondary data relating to the state enterprises performance (both financial and non-financial) was obtained from annual reports of the corporations for the period 2010 to 2015. The annual reports were obtained from the corporation secretaries. The data included financial indicators such as total net assets, surplus/deficit per year, profit/loss per year, earnings before interest and tax, customer satisfaction index from surveys undertaken. Panel data was used for organization performance so as to enable more information on performance and limit the influence of any short term irregularity inherent in the annual data.

3.7 Pilot study

At the beginning of this study, a pilot survey was undertaken to identify the board characteristics and demographics that influence performance of the boards of state enterprises. The pilot study was undertaken before distribution of the questionnaires to representative firms to test the responses of the subjects to the overall research design. Further, it also assisted as recommended by Zikmund (2010) in ensuring that the questions measured what they were supposed to, are interpreted similarly by all respondents, reduce bias, ensure efficiency and format completeness.

The pilot test targeted 19 respondents, being a sample of five percent of the total targeted respondents. This was in line with recommended samples by Cooper and Schindler (2010) and the method has effectively been applied by other researchers such as Ochieng (2016) and Odundo (2012). The results gathered using the survey tool in appendix III were used to refine the proposed data collection instruments. In this process, interviews were carried out with key staff from the State Corporations Advisory Committee and one corporation secretary. The result was quite interesting and significant in the construction of the final sample questionnaire for this study.

3.7.1Reliability of the Research Instrument

Reliability refers to the stability or consistency with which we measure something. It is concerned with whether alternative researchers would yield similar information (Bryman & Bell, 2003). It thus measures the extent to which a research instrument yields consistent results or data after repeated trials. Cronbach's alpha reliability test was used to determine the internal consistency or average correlation of items in the survey instrument to gauge on reliability (Reynaldo, 1999). This study drew from literature that has been tested for reliability by other researchers and adopted. In line with the recommendation of Reynaldo (1999), this study also applied a cutoff point coefficient of 0.7 and above as a strong measure of reliability.

3.7.2 Validity of the Research Instrument

Validity of an instrument refers to its ability to measure the constructs as purported. It is concerned with accuracy and meaningfulness of inferences which are based on research results. Although absolute validity is very difficult to realize, demonstrating validity of a measure is key in research (Bryman & Bell, 2003).

This study tested face, construct validity and content validity. Face validity was treated as judgmental through a pilot study and it tested whether the indicators included in the questionnaires really measured the constructs that they were intended to measure. For construct validity, the questionnaire was divided into sections addressing specific objectives and aligned to the conceptual framework of this study.

Content validity was ensured through double check by independent resource persons, one from the State Corporations Advisory Committee and another from the Centre for Corporate Governance. The resource persons contributed their expert judgment towards confirming whether theoretical dimensions were relevant, meaningful and clear. This enhanced quality items selected and included in the questionnaire, an approach applied in prior studies by Koech (2018), Oluoch (2014) and Letting (2010). Predictive validity was demonstrated by the results of hypothesis testing.

3.8 Data Analysis and Presentation

Data analysis was guided by the objectives of the research and the measurement of the data collected. A blend of tools was applied owing to the fact that data collected was both qualitative and quantitative. For qualitative data collected using the Likert –type scale, Factor analysis was used to inform the reduction of items measured into single variables for testing hypothesis (Cooper & Schindler, 2010; Creswell, 2009). Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy, confirmed with Bartlett's test of Sphericity was used to examine the appropriateness of the data for factor analysis. As

per recommendation by Creswell (2009) high values of between 0.5 and 1.0 indicated factor analysis was appropriate.

Data collected was sorted, coded then entered and analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 21 premium. Data analysis involved both descriptive and inferential statistics. Descriptive statistics including frequency tables, measures of central tendency (arithmetic mean, median and mode). Measures of dispersion (Bryman & Bell, 2003) were used mainly in analyzing demographic data and thus provided deeper insight into the characteristics of the variables. The study employed multivariate statistical analysis -correlation analysis and multiple linear regression analysis as the inferential statistics to test the significance of relationships between board attributes, information technology maturity, and performance of state owned enterprises.

Significance tests were undertaken at 95 percent confidence level. For effective application of multiple linear regression analysis, fundamental tests of the underlying assumptions aimed at ensuring that data was conducive for such tests, was undertaken. To test for normality and homogeneity, the Kolmogorov-Smirnov test and Levene's test was undertaken. Kolmogorov-Smirnov test assesses if there are significant departures from normality in the population distribution while the Levene's test for homogeneity assesses if the population variance for the group are significantly different from each other (Carver & Nash, 2006).

Pearson product moment correlation coefficients were calculated for every potential pair of study variables to examine the strength of a correlation and determine whether it is appropriate to move toward subsequent analysis. Multicollinearity was tested using Variance Inflation Factors applying the recommended cut-off of ten (Creswell, 2009). As a rule of, if the VIF of a variable exceeds 10, that variable was deemed to be highly collinear.

3.9 Statistical Measurement Model

Multiple regression analysis technique was used to test the hypothesis. The following multiple linear regression equation, premised on the general linear model was used to represent the relationship between the dependent variable (Y) as a linear function of the independent variables (Xs) with e_t representing the error term (Cooper & Schindler, 2010).

Firstly, regression model without moderator variable was applied as follows:

$$\mathbf{Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e}$$

Then, the moderating effects of the moderating variable were tested applying the following regression model:

$$\mathbf{Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_1 X_1 Z + \beta_2 X_2 Z + \beta_3 X_3 Z + \beta_4 X_4 Z + e}$$

Where:

Y = Organization Performance

X_1 = Board Structure

X_2 = Board Operating Environment

X_3 = Board Demographics

X_4 = Board Role

Z= Information Technology Maturity

β_o= constant (intercept) of regression, the value of the dependent variable when the independent variable is 0; and ε_t= Error/disturbance

$\beta_1 X_1$ Z, $\beta_2 X_2 Z$, $\beta_3 X_3 Z$, $\beta_4 X_4$ Z Interaction term of information technology maturity (moderating variable) with each of the independent variables.

3.10 Measurement of Variables

The dependent variable for this study was performance of state enterprise. Financial performance measured by return on revenue was operationalized as ratio between earnings before interest and tax (EBIT) to the total revenue while return on assets was obtained from the ratio of earnings before interest and tax (EBIT) to total assets; the non-financial performance was operationalized as the index of customer satisfaction.

The key independent variables for this study were board structure, board operating environment, board demographics and board role. The moderating variable was information technology maturity. These were variables that were chosen based on review of literature on corporate governance in Kenya and beyond. Prior research on either corporate governance or state corporations such as Koech (2018), Ochieng (2016), Odundo (2012) and Letting (2011) had included one or more of these variables.

To operationalize three independent variables (board operating environment, board role, and information technology maturity) indicators for each of these independent variables and sub variables were determined and the five-point Likert Scale was employed to measure the independent variables for which the perceptions and opinions of the respondents in this study were sought. The scale of 1-5 comprised the following (1= strongly disagree, 2= Disagree, 3= neither Agree nor Disagree, 4= Agree, 5= Strongly Agree). The responses were measured in terms of strength of agreement or disagreement and a respondent's agreement ratings were summed up to obtain a score representing his or her opinion (Cooper & Schindler, 2010).

Board structure information regarding board size, board independence and committees' data was collected from records maintained by the company secretaries of the organizations sampled. Board size was operationalized as the number of board members,

board independence was operationalized as the percentage of the independent non-executive directors in the board and committees were operationalized a dummy variable set to one of the board of directors has finance audit and remuneration committees. On the other hand, Board demographics information regarding age, tenure, education, gender, public service background, and political background was obtained as direct measures from organization's reports maintained by the Company Secretaries.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter details the results of the research, the analysis and discussion based on the findings. It details the descriptive statistics of the variables comprising each construct of the study; presents the factor analysis among the variables of the constructs in establishing the factor loading on each variable of the study; details the results of the correlation analysis of the variables used for the constructs of the study; presents the multiple regression analyses of the independent and dependent variables of the study; tests the relationships between board attributes and performance of state owned enterprises and tests the moderating effects of information technology maturity on this relationship.

4.2 Results of the Pilot Study

In the pilot study undertaken to test the reliability of the study questionnaire, nineteen managers from state owned enterprises were identified and responded accordingly. These respondents were excluded from participating in the main survey. To test for reliability of the instrument, Cronbach's test was performed on the pilot questionnaire. Cronbach's alpha score of 0.7 was applied as the cut off for determining items to be retained in the questionnaire that was distributed, with items having an overall Cronbach's alpha score greater than 0.7 being retained.

Notably, a few items had to be eliminated as they had very low inter-item correlation. The number of items retained for each variable and their corresponding Cronbach's alpha score is presented in table 4.1. In summary, the multi item datasets used the measurement of the variables representing the board attributes and information technology maturity have scale alpha values that are above 0.71, well above the 0.70 as recommended by Nunnally (1978).

Table 4.1: Reliability of Variables based on Cronbach's Alpha Level

Independent variables	Cronbach's Alpha	Number of items	Decision
Board structure	0.76	4	Accepted
Board operating environment	0.78	13	Accepted
Board demographics	0.81	6	Accepted
Board role	0.71	20	Accepted
Information technology maturity	0.74	20	Accepted

Validity of an instrument refers to its ability to measure the constructs as purported. It is concerned with accuracy and meaningfulness of inferences which are based on research results. Although absolute validity is very difficult to realize, demonstrating validity of a measure is key in research (Bryman & Bell, 2003). This study tested face, construct validity and content validity. Face validity was treated as judgmental through a pilot study and it tested whether the indicators included in the questionnaires really measured the constructs that they were intended to measure. For construct validity, the questionnaire was divided into sections addressing specific objectives and aligned to the conceptual framework of this study.

Content validity was ensured through double check by independent resource persons, one from the State Corporations Advisory Committee and another from the Centre for Corporate Governance. The resource persons contributed their expert judgment towards confirming whether theoretical dimensions were relevant, meaningful and clear. This enhanced quality items selected and included in the questionnaire, an approach applied in prior studies by Koech (2018), Letting (2010) and Ongore (2008). Predictive validity was demonstrated by the results of hypothesis testing.

4.3 Response Rate

The data that was analyzed in this study was received from 61(81.3%) of the targeted 75 organizations hence considered an effective response rate. The response rate compares favorably with similar studies on organization performance. Koech (2018), Letting (2011) and Ongore (2008) achieved a response rate of 70 percent, 85 percent and 87.5 percent respectively. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good while a response rate of 70% and over is deemed excellent.

According to Kumar et al. (1993) a majority of empirical studies have adopted a questionnaire survey method; therefore, the response rate is adequate for the study. This study applied a questionnaire that was followed by detailed cover letter and clear instructions so as to increase the response rate and also facilitate procedure for respondents. In terms of questionnaire returns from the respondent organizations, a total of 264 (70.4 percent) responses were received and analyzed.

4.4 Characteristics of the Organizations

The 61 state owned enterprises that participated in the study were considered in terms of the year of establishment (age) of the organization and the nature of business of the organization (whether commercial or non-commercial enterprise). The findings in table 4.2 below indicated that majority of the state owned corporations that is 37.7% were established over 50 years ago, 31.1% of the corporations were established between 41 to 50 years ago, 14.8% of the corporations were established between 31to 40 years ago, 9.8% of the corporations were established between 21 to 30 years ago and lastly, 6.6% of the corporations were established less than 20 years ago. This is important to the study since 50 years possess the necessary experience, information and institutional memory on how board attributes influence performance.

Table 4.2: Distribution of Study Population by Year of Establishment

Year of Establishment	Frequency	Valid Percent
Less than 20 years	4	6.6%
21-30 years	6	9.8%
31 – 40 years	9	14.8%
41 – 50 years	19	31.1%
Over 50 years	23	37.7%
Total	61	100%

The findings in table 4.3 revealed that 39.3% of the responding state corporations were commercial/manufacturing, 21.3% were service corporations, 19.7% were regulatory services, 16.4% were financial and lastly 3.3% were public universities. The distribution of responding organizations by sector categories is considered adequate for analysis.

Table 4.3: Category of State Corporations

	Frequency	Percent
Commercial /Manufacturing	24	39.3%
Financial	10	16.4%
Public Universities	2	3.3%
Regulatory	12	19.7%
Service Corporations	13	21.3%
Total	**61**	**100.0**

4.5 Descriptive Analysis of the Variables

4.5.1 Descriptive Analysis of Construct Board Structure

The minimum board size of the state owned enterprises was 5 while the maximum board size was 14. The total number of the board members was 626. The findings indicate that the average number of board members was 10 which is slightly higher than the recommended number of 9 board members as per the State Advisory Committee (2015) Code of Good Governance popularly known as Mwongozo.

The findings revealed that the number of executive directors from all the state owned enterprises were 121(19.33%). The minimum number of the executive directors was 1 and the maximum number was 3. The average number of executive board members was 2. The findings revealed that the total number of external board members categorized as independent was 176 (28.12%) in the 61 state owned enterprises. The minimum number of board members categorized as independent was 2 and the maximum number of board members categorized as independent was 5. The findings indicate that a total of 151(24.12%) of the board members had served as politicians before.

The minimum number of board members who had served as politicians in state owned enterprises was 1 and the maximum number was 4. In terms of interlocking directors, the study established that the minimum number of directors who sit in more than one board is 1 and the maximum number of directors who sit in more than one board is 4. The total number of directors who sit in more than one board in all the state owned enterprises is 153 (24.44%). Therefore, on average close to 3 board members sit in more than one board.

Table 4.4: Descriptive Analysis for Board Structure

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Board size	61	5.00	14.00	626.00	10.2623	1.66234
Executive board members	61	1.00	3.00	121.00	1.9836	.42786
Board independence	61	2.00	5.00	176.00	2.8852	.70942
Interlocking directors	61	1.00	4.00	153.00	2.5082	.78789
Valid N (list wise)	61					

4.5.2 Descriptive Analysis of Construct Board Operating Environment

A Likert scale was used to establish the influence of board operating environment on performance of the state corporations in Kenya. The study found out that majority of the respondents 64.5% agreed that the board meetings and the board members respected each other views. An opinion was sought on whether the chairman allowed members equal opportunities to contribute to discussions. 28.3% strongly agreed, 62.0% agreed, 9.8% were neutral in this respect. This implied that the state corporations allowed members an equal opportunity to contribute to discussions. The respondents were asked whether most meetings were held in a timely manner, 13.0% of the respondents strongly agreed, 72.2% of the respondents agreed, 13.0% were neutral and 1.8% of the respondents disagreed. On the question whether new members are taken through an induction on procedures and rules of the board, the result showed that 26.4% strongly agreed, 48.2% agreed, 22.1% were neutral and 1.8% disagreed. This indicated that new employees in the state owned corporations were inducted on the rules of the board.

Respondents were asked whether board members kept time in both full board and committee meetings. 19.9% strongly agreed, 65.6% agreed, 8.7% were neutral while 5.8% strongly disagreed. This implied that a minority group in the state owned corporations felt that the board members did not keep time in board meeting and also in committee meetings. An opinion was sought on whether the chairman dominated the meetings. 11.6% strongly agreed, 67.0% agreed, 13.4% took a neutral stand, 4.3% disagreed and 3.6% strongly disagreed. This implied that most chairman dominated meetings.

The study further sought to find out whether the board members received the annul calendar of events for the board. 39.5% strongly agreed, 44.6% agreed, 12.7% took a neutral stand, and 3.3% disagreed. The results showed that board members know the activities of the state owned corporations since they received the annual calendar of events. An enquiry was made as to whether the board members received monthly briefings from management regarding matters that were important to the organization performance. 39.1% strongly agreed, 40.2% agreed, 15.6% were neutral while 5.1% disagreed. This implied that board members had monthly briefings on matters regarding state owned performance.

The respondents were asked on whether the organization had a clear governance structure. 21.7% of them strongly agreed, 64.6% agreed, 8.3% were neutral and 5.4% disagreed. The results confirmed that the state owned corporations had a clear governing structure. Also, the study sought opinion on the whether board members accessed the company databases when they wanted. 27.2% strongly agreed, 65.9% agreed, 3.6% were neutral and 3.3% disagreed. This indicates that board members generally accessed information on their state-owned corporations when they wanted.

The study sought information on whether the board members had been employed by the organization within the last five years. 14.5% strongly agreed, 80.4% agreed and 5.1% were neutral. This confirmed that the state owned organizations had not appointed new board members from their staff in the past five years.

The respondents were asked whether board members declared conflict of interest where there was a possibility of such occurrence. 12.3% strongly agreed, 72.8% agreed, 6.9% were neutral, 4.3% disagreed and 3.6% strongly disagreed. This indicated that most board members in the state owned corporations declared their conflict of interest. Finally, on whether non-executive directors had a fixed term of office in the organization, 32.2% strongly agreed, 56.9% agreed, 7.6% were neutral and 3.3% disagreed. This implied that non-executive directors in state owned corporations had a fixed term of office.

These findings resonate with those of Odundo (2012) about the importance of creating an environment in which board members make contributions with liberty, and on management's role in sharing information with the board members including calendar of activities. The effectiveness of the environment was questioned by Okwiri (2010) and Ochieng (2016) with regards to control of dominant members.

Table 4.5: Board Operating Environment Descriptive Analysis

	SDA	DA	N	A	SA	Mean	Std. Deviation
In the board meetings the board members respect each other's views	0%	1.8%	15.2%	64.5%	18.5%	4.00	.641
The chairman allows members equal opportunities to contribute to discussions	0%	0%	9.8%	62.0%	28.3%	4.18	.590
Most meetings are held in a timely manner	0%	1.8%	13.0%	72.2%	13.0%	3.96	.577
New members are taken through induction on procedures and rules of the board	0%	3.3%	22.1%	48.2%	26.4%	3.98	.786
The board members keep time in both full board and committee meetings	5.8%	0%	8.7%	65.6%	19.9%	3.94	.898
The chairman dominates the meetings	3.6%	4.3%	13.4%	67.0%	11.6%	3.79	.841
The board members receive the annual calendar of events for the board	0%	3.3%	12.7%	44.6%	39.5%	4.20	.783
The board members receive monthly briefings from management regarding matters that are important to the organization performance	0%	5.1%	15.6%	40.2%	39.1%	4.13	.857
The organization has a clear corporate governance structure	0%	5.4%	8.3%	64.6%	21.7%	4.03	.721
The board members access the organization database when they want	0%	3.3%	3.6%	65.9%	27.2%	4.17	.641
The board members have not been employed by the organization within the last five years	0%	0%	5.1%	80.4%	14.5%	4.09	.433
Board members declare conflict of interest where there is a possibility of such occurrence	3.6%	4.3%	6.9%	72.8%	12.3%	3.86	.821
Non-executive directors have a fixed term of office in the organization	0%	3.3%	7.6%	56.9%	32.2%	4.18	.706

4.5.3 Descriptive Analysis of Construct Board Demographics

The study examined data on board demographic characteristics including age, tenure, education background, professional background, gender diversity, public service background and political background. The study revealed that the age of most board members of the state corporations surveyed was between 40-50 years (37.3%). Followed by 23.6% of the board members who were between 30-49 years, 25.1% of the board members were between 50- 60 years, 11% of the board members were between 60- 70 years, 1.9% were above 70 years and lastly, 1.1% were below 30 years.

Table 4.6: Board Directors Age

	N	Sum	Percentage
Below 30 years	61	7	1.1%
30-40 years	61	148	23.6%
40-50 years	61	234	37.3%
50-60 years	61	157	25.1%
60-70 years	61	69	11.0%
Over 70 years	61	11	1.9%
Total	**61**	**626**	**100%**

In terms of gender diversity, the study established that the minimum number of women in the board was 2 and the maximum number of women in the board was 6. The total number of women in the board for all the 61 state corporations was 229. Therefore, 36.5% of all the board members of state owned enterprises were women. This is in conformity with the recommendation by the State Corporation Advisory Committee's Code of Governance for the threshold of having at least a third of either gender included in the board of public entities.

Table 4.7: Women in Board of Directors

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Women Board	61	2.00	6.00	229.00	3.7541	.88799
Valid N (list wise)	61					

The results on education background indicate that only a paltry 7.7 % of the board members had PhD qualifications with 58.0% board members having at least a Bachelor and 34.3% having a Master degree qualification. This finding resonates with prior studies that considered education qualification of board members. For instance, Letting (2011) noted that at least 29% of board members of listed companies had a Master degree while Balta (2008) noted that 46% and 15% of Greek board members of listed companies had at least a Master degree and PhD qualifications respectively.

Table 4.8: Level of Education for Board of Directors

	N	Minimum	Maximum	Sum	Percentage
Bachelor's Degree	61	2	11	363	58.0%
Post Graduate (Masters)	61	1	6	215	34.3%
PhD (Doctorate)	61	0	4	48	7.7%
Total				**626**	**100%**

In terms of educational specializations, the study established that majority of the board members that is 16.1 % had specialized in Business Administration, followed by 16% in Finance, 13.3% in Human Resource, 11.6% in Social Sciences, 11.2% in Accounting,

10% in Marketing, 9.7% in Operations, 4.2 % in Legal, 3.5% in Sciences, 3.2% in Health Sciences and the least was 1.1% in the Engineering specialization.

It is apparent that board members who have background of specialization in business, finance and accounting are the majority in state owned enterprises. This is consistent with the findings by Letting (2011) and Ongore et al. (2011).

Table 4.9: Specialization of Board Directors

	Minimum	Maximum	Sum	Percentage
Engineering	1.00	3.00	7.00	1.1%
Sciences (Physics, Chemistry)	2.00	4.00	22.00	3.5%
Business Administration	1.00	6.00	101.00	16.1%
Accounting	1.00	7.00	70.00	11.2%
Finance	1.00	6.00	100.00	16%
Human Resources	2.00	6.00	83.00	13.3%
Social sciences	1.00	6.00	73.00	11.6%
Operations	1.00	6.00	61.00	9.7%
Marketing	2.00	6.00	64.00	10.2%
Legal	1.00	5.00	26.00	4.1%
Health Sciences	3.00	7.00	19.00	3.2%
Total			**626**	**100%**

The findings of the study revealed that 58.4% of the board members had served for tenure of between 2 and 3 years, 30.6% of the board members had tenure of less than 1 year while 11% of the board members had served for over 3 years. This implied that board members had accumulated experience serving within the organizations selected.

Table 4.10: Tenure of Board of Directors

	Minimum	Maximum	Sum	Percentage
Less than 1 year	1.00	6.00	192.00	30.6%
2-3 years	3.00	10.00	366.00	58.4%
Above 3 years	1.00	4.00	68.00	11.0%
Total			**626**	**100%**

The study noted that majority of the board members that is 56.2% had public service background while 43.8% did not have public service background. This implied that most of the board members in the state owned enterprises have worked in government ministries, departments and agencies before.

Table 4.11: Board Members Public Service Background

	N	Minimum	Maximum	Sum	Percentage
With public service background	61	3.00	9.00	352.00	56.2%
Without public service background	61	1.00	9.00	274.00	43.8%
Total				**626**	**100%**

4.5.4 Descriptive Analysis for Construct Board Role

This objective of the study sought to establish the influence of board role on performance among state corporations in Kenya. To achieve this, a Likert scale was used. The respondents were asked to indicate the board members involvement in the formation of strategic decisions. 9.8% of the respondents strongly agreed, 33.0%

agreed, 30.8% were neutral, 21.4% disagreed and 5.1% strongly disagreed. This implied that the board of directors of the state-owned corporations were involved in the formation of strategic decisions. Also the respondents were asked on their opinion on whether the board usually ratified strategic proposals which were formed solely by the top management. 14.5 % of the respondents strongly agreed, 26.2% of the respondents agreed, 44.2% of the respondents were neutral, 10.1% of the respondents disagreed and 4.7% of the respondents strongly disagreed.

With regards to whether the board usually asked probing questions that lead to revisions of strategic proposals formed by the top management, 18.8% strongly agreed, 72.8% agreed, 3.3% were neutral and 5.1% disagreed. This implied that the board directors undertook revision of strategic proposals formulated by top management through asking relevant questions. The respondents were asked whether the board supported the top management to form strategic decisions within and between board meetings. 13.8% strongly agreed, 55.8% agreed, 22% were neutral and 8.3% disagreed. This implied that board of directors assisted in strategic decisions. The study also sought opinion on whether the board usually formed the strategic decisions separately from the top management. 25.7% strongly agreed, 53.3% agreed, 9.4% were neutral and 11.6% disagreed. This implied that the board of directors in state owned corporations formulated separate strategic decisions.

With regards to the board involvement in the monitoring of the progress of strategic decisions, 28.6% strongly agreed, 46.7% agreed, 19.2 were neutral and 5.4 disagreed. This implied that the boards of directors were not involved in the monitoring of the strategic decisions. The respondents were asked to give their opinion on whether the board usually accepted the evaluation of strategic decisions by the top management without asking probing questions. 38.0% strongly agreed, 46.4% agreed and 15.6% disagreed. This implied that the board of directors accepted the evaluation of the strategic decisions they formulated without probing questions.

Further, the study sought opinion on whether the board usually accepted the evaluation of strategic decisions by the top management after asking probing questions. 5.4% strongly agreed, 66.7% agreed, 5.8% were neutral, 6.9% disagreed and 15.2% strongly disagreed.

This implied that the board of directors of most state-owned corporations accepted the evaluation of strategic decisions by top management after probing questions. On the opinion whether the board usually determined the timing and criteria of the evaluation, or information was supplied by the top management and it was rarely challenged by the board, 36.2% strongly agreed, 42.8% agreed, 19.2% were neutral and 1.8 disagreed. This implied that the board in state owned corporations established the timing criteria of the evaluation and the information was supplied by the top management and rarely challenged by the board.

The respondents were asked whether the board usually determined the timing and criteria of the evaluation and often requested additional information after receiving the progress report from the top management. 20.7% strongly agreed, 64.5% agreed, 5.4% were neutral, 5.8% disagreed and 3.6% strongly disagreed. This result indicated that the board of state owned corporations often established the timing criteria of the evaluation and requested additional information after receiving progress report from the top management.

The study sought the opinion on whether the board usually collected its own information about the progress of the strategic decision in addition to the top management reports. 13% strongly agreed, 58% agreed, 19.6% took neutral stand and 9.4% disagreed. This meant that the board of state owned corporations sought for additional information, apart from management reports, on the progress of the strategic decisions. The study further sought information on whether the selection of the board members had resulted in the best mix of board members. 21.4% strongly agreed, 64.1% agreed, 9.1 were neutral and 5.4 disagreed. This implied that in most state-owned corporations the selection of the board members had resulted in the best mix of board members.

The study further sought the opinion of the respondents on whether the selection process for CEO has resulted in the best mix of board members. 17.0% strongly agreed, 65.9% agreed, 6.9% were neutral and 10.1% disagreed. This implied that the most state owned the appointment of the C.E.O led to the best mix of board of directors. On the opinion whether the corporation was truly living its mission. 54% strongly agreed, 27.5% agreed, 18.5% were neutral. This result indicated that most state-owned corporations were truly living their mission. The respondents were asked their take on the statement that corporations' assets resources and investments were well stewarded and safeguarded. 10.9% strongly agreed, 67% agreed, 19.2 % were neutral, 1.1% disagreed and 1.8% strongly disagreed. This implied that the asset resources of the state corporations were well safeguarded.

Further the study sought the opinion of the respondents on the statement the mandate of the board was clear. 21% strongly agreed, 62% agreed, 5.4% were neutral, 4% disagreed and 7.6% strongly disagreed. This implied that the board mandate of the state-owned corporations was clear. The study sought opinion on whether the board committees of the corporation were utilized in enhancing board oversight. 23.6% strongly agreed, 52.5% agreed, 9.4% were neutral and 14.5% disagreed. This implied that most state-owned board committees were utilized in enhancing board oversight.

With regards to whether the boards spearheaded a culture of learning and innovation in the corporation, 17.4% strongly agreed, 56.9% agreed, 12.7% were neutral, 10.5% disagreed and 2.5% strongly agreed. This implied that most boards of state owned corporations led a culture of learning and innovation.

The study further sought opinion on whether boards received information timely. 28.6% strongly agreed, 39.9% agreed and 31.5% were neutral. Lastly, on whether board members undertook annual performance evaluations, 21.7% strongly agreed, 56.4% agreed and 21.7% were neutral. This implied that the board members undertook yearly performance assessment. These findings are consistent with the findings of Muli (2015) and Letting (2011).

Table 4.12: Board of Directors Role Descriptive Characteristics

	SD	D	N	A	SA	mean	Std.
The board of directors is involved in the formation of strategic decisions	5.1%	21.4%	30.8%	33.0%	9.8%	3.2	1.047
The board usually ratifies strategic proposals which are formed solely by the top management	4.7%	10.1%	44.2%	26.2%	14.5%	3.3	1.002
The board usually asks probing questions which lead to revisions of strategic proposals formed by the top management	0%	5.1%	3.3%	72.8%	18.8%	4.0	.649
The board usually helps the top management to form strategic decisions within and between board meetings	0%	8.3%	22%	55.8%	13.8%	3.7	.794
The board usually forms the strategic decisions separately from the top management	0%	11.6%	9.4%	53.3%	25.7%	3.9	.901
The board is not usually involved with the monitoring of the progress of strategic decisions	0%	5.4%	19.2%	46.7%	28.6%	3.9	.835
The board usually accepts the evaluation of strategic decisions by the top management without asking probing questions	0%	0%	15.6%	46.4%	38.0%	4.2	.698
The board usually accepts the evaluation of strategic decisions by the top management after asking probing questions	15.2%	6.9%	5.8%	66.7%	5.4%	3.4	1.185
The board usually determines the timing and criteria of the evaluation, but that information is supplied by the top management and it is rarely challenged by the board	0%	1.8%	19.2%	42.8%	36.2%	4.1	.781
The board usually determines the timing and criteria of the evaluation and often requests additional information after receiving the progress report from the top management	3.6%	5.8%	5.4%	64.5%	20.7%	3.9	.903
The board usually collects its own information about the progress of the strategic decision in addition to the top management reports	0%	9.4%	19.6%	58.0%	13.0%	3.74	.800
The selection of the board members has resulted in the best mix of board members	0%	5.4%	9.1%	64.1%	21.4%	4.0	.723
The selection process for CEO has resulted in the best mix of board members	0%	10.1%	6.9%	65.9%	17.0%	3.8	.798
Our corporation is truly living its mission	0%	0%	18.5%	27.5%	54.0%	4.3	.775
The organization's assets resources and investments are well stewarded and safeguarded	1.8%	1.1%	19.2%	67.0%	10.9%	3.9	.695
The mandate of our board is clear	7.6%	4.0%	5.4%	62.0%	21.0%	3.8	1.042
The board committees of our corporation are utilized in enhancing board oversight	0%	14.5%	9.4%	52.5%	23.6%	3.8	.943
The board of directors spearheads a culture of learning and innovation in the corporation	2.5%	10.5%	12.7%	56.9%	17.4%	3.7	.946
The board receives information timely	0%	0%	31.5%	39.9%	28.6%	3.9	.776
The board members undertake annual performance evaluating evaluation\Assessment	0%	0%	21.7%	56.5%	21.7%	4.0	.660

4.5.5 Descriptive Analysis of Construct Information Technology Maturity

The study sought to establish the moderating effect of information technology maturity on performance among state corporations in Kenya. To begin with, information regarding organizations information technology was pursued where 27.5% strongly agreed, 57.6% agreed, 7.6% were neutral and 7.2% disagreed with the statement that IT projects supports the financial and operational objectives and strategies of the organization. On continuous examination of innovation opportunities and positioning of IT for competitive advantage, 5.1% strongly agreed, 78.6% agreed, 9.4% were neutral and 6.9% disagreed. This implied that the state owned corporations evaluate the innovation opportunities that IT can provide.

The study sought to investigate whether the respondents are adequately informed on the current use of IT by competitive forces (including customers, suppliers and competitors) in the industry. 26.8% strongly agreed, 40.6% agreed, 18.1% were neutral and 14.5% disagreed. This implied that most state-owned corporations ensured that the employees were informed on the current use of IT by competitive forces. The study further sought to establish whether the respondents were adequately informed on the potential use of IT by competitive forces (including consumers, suppliers, and competitors). 26.8% strongly agreed, 39.1% agreed, 15.9 were neutral 13% disagreed and 5.1% strongly disagreed. This implied that state owned corporations adequately informed the employees on the potential use of IT.

The respondents were asked whether the organizations had adequate picture of the coverage and quality of IT systems. 18.8% strongly agreed, 64.5% agreed, 9.1% took a neutral position and 7.6% disagreed. On the opinion on whether the respondents were contented with how their IT project priorities were set, 37.3% strongly agreed, 37.7% agreed, 15.9% were neutral, 5.4% disagreed and 3.6% strongly disagreed. As such, most of the employees were contented with the IT projects.

The respondents were asked for their opinion on whether the responsibility and authority for IT direction and development were clear. 27.2% strongly agreed, 40.9% agreed, 24.6% were neutral and 7.2% disagreed. This implied that most IT direction and development responsibilities and authority for most state-owned corporations was clear. The study also sought opinion on the respondent confidence level that IT project proposals were properly appraised. 6.9% strongly agreed, 65.9% agreed, 16.3% were neutral and 10.9% disagreed. It was therefore apparent that most state owned corporations appraised the IT projects.

The respondents were asked to indicate whether they constantly monitored the performance of IT functions. 25% of the respondents strongly agreed, 35.5% agreed, 25% of the respondents were neutral, 5.8% disagreed and 8.7 of the respondents strongly disagreed. This implied that employees in most of the organizations monitored the performance of IT functions. With regards to whether the IT functions was clear about its goals and responsibilities, 7.6% strongly agreed, 62.0% agreed while 30.4% were neutral. This implied that the IT functions of most state owned corporations were clear about their goals and responsibilities.

On the opinion whether IT functions was clear about its performance criteria, 35.1% strongly agreed, 45.3 agreed, 4.7% were neutral and 14.9% disagreed. As such, most corporations had IT functions that were clear about the performance criteria. The study sought opinion on whether the IT specialist-user relations were constructive. 12% strongly agreed, 55.4% agreed, 19.6% were neutral and 13% disagreed. This implied that most IT specialists of the state owned corporations were constructive.

With regards to whether the board of directors perceived future exploration of IT as of strategic importance, 25% of the respondents strongly agreed, 56.5% agreed, 6.9% were neutral, 2.9% disagreed and 8.7% strongly disagreed. These results indicate that board of directors of state owned corporations perceived future IT exploration as being of strategic importance. On the opinion whether there was a top-down planning process for linking information systems strategy to organization needs, 59.1% strongly agreed,

16.3% agreed, 16.3% were neutral and 8.3% disagreed. This implied that there was top down process for linking information systems strategy to organization needs in most state-owned corporations.

The study further sought opinions on whether there were resource (including people) for IT development within the organizations. 25.7% strongly agreed, 50.6% agreed, 10.9% were neutral and 13.4% disagreed. The results indicate that most state-owned corporations had enough IT resources. Finally, the study sought the opinion on whether there were mechanisms for introduction of, or experimentation with, new technologies within the organization. 26.1% strongly agreed, 65.6% agreed, 6.5% were neutral and 1.8% disagreed. This implied that most state-owned corporations had mechanisms for introduction of new technologies.

Table 4.13: Information Technology Maturity Descriptive Characteristics

	SD	D	N	A	SA	Mean	Std. Deviation
Our IT projects support the financial and operational objectives and strategies of our organization	0%	7.2%	7.6%	57.6%	27.5%	4.0	.800
We continuously examine the innovative opportunities IT can provide for competitive advantage	0%	6.9%	9.4%	78.6%	5.1%	3.8	.623
We are adequately informed on the current use of IT by competitive forces in our industry.	0%	14.5%	18.1%	40.6%	26.8%	3.7	.995
We are adequately informed on the potential use of IT by competitive forces including consumers, suppliers, and competitors) in our industry	5.1%	13.0%	15.9%	39.1%	26.8%	3.6	1.148
We have an adequate picture of the coverage and quality of our IT systems	0%	7.6%	9.1%	64.5%	18.8%	3.9	.763
We are content with how our IT project priorities are set	3.6%	5.4%	15.9%	37.7%	37.3%	3.9	1.039
In our organization, the responsibility and authority for IT direction and development are clear	0%	7.2%	24.6%	40.9%	27.2%	3.8	.892
In our organization the responsibility and authority for IT operations are clear	0%	3.6%	15.2%	64.1%	17.0%	3.9	.682
We are confident that IT project proposals are properly appraised	0%	10.9%	16.3%	65.9%	6.9%	3.6	.756
We constantly monitor the performance of IT functions	8.7%	5.8%	25.0%	35.5%	25.0%	3.6	1.177
Our IT functions is clear about its goals and responsibilities	0%	0%	30.4%	62.0%	7.6%	3.7	.574
Our IT functions is clear about its performance criteria	0%	14.9%	4.7%	45.3%	35.1%	4.0	.998
In our organization, user ideas are given due attention in IT planning and implementation	0%	0.7%	17.4%	73.9%	8.0%	3.8	.521
Our IT specialist understands our mission and the organization	0%	1.4%	15.9%	26.1%	56.5%	4.3	.801
The structure of our IT function fits our organization	0%	10.5%	10.1%	52.2%	27.2%	3.9	.891
The IT specialist-user relations in our firm are constructive	0%	13.0%	19.6%	55.4%	12.0%	3.6	.852
In my organization the board of directors perceives that future exploration of IT is of strategic importance	8.7%	2.9%	6.9%	56.5%	25.0%	3.8	1.096
There is a top-down planning process for linking information systems strategy to organization needs.	0%	8.3%	16.3%	16.3%	59.1%	4.2	1.011
We have resource for IT development within the organization	0%	13.4%	10.9%	50.6%	25.7%	3.8	.943
We have mechanisms for introduction of, or experimentation with, new technologies within the organization	0%	1.8%	6.5%	65.6%	26.1%	4.1	.611

4.5.6 Descriptive Analysis of Construct Performance of State Owned Enterprises

The performance of the state owned enterprises as the dependent variable in this study was measured in two ways. Financial measures of performance, specifically Return on Sales and Return on Assets, were applied in the case of commercial state-owned enterprises, while non-financial indicator of Customer Satisfaction index was applied for those state owned enterprises categorized as non-commercial as well as the commercial ones. These measures were applied on data collected for the period 2010 to 2015. This five-year period's average was considered as the overall measure of performance for that period bearing in mind that the study was a cross sectional one.

As indicated in the table 4.14, the Return on Asset had a mean of 0.0252 and standard deviation of 0.09152 while the Return on Sales had a mean of 0.0670 and a standard deviation of .6080. Customer Satisfaction had a mean of 73.30 and a standard deviation of 4.705. The standard deviations for Return on Sales and Return on Assets indicate that there was wide dispersion in terms of these measures of performance.

Table 4.14: Descriptive Analysis for Construct Organization Performance

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Performance (ROA)	24	-.25	.20	.61	.0252	.09152
Performance (ROS)	24	-2.40	.90	1.61	.0670	.60806
Performance(Customer Satisfaction Index)	61	61	87	4471	73.30	4.705
Valid N (list wise)	24					

4.6 Diagnostic Tests

4.6.1 Factor Analysis

Factor analysis was undertaken for the three constructs namely board role, board operating environment and information technology maturity that were measured using the Likert Scale. Factor analysis was undertaken in order to determine the factors that contributed significantly to the variance of the identified study variable. As such it was applied as a confirmatory measure of the underlying variables or factors used in the constructs. Factor loadings represented the correlation between the original variable and its factors. In the determination of the significance level for the interpretation, correlation coefficients were used. According to Field (2009) loadings exceeding 0.70 indicate a well-defined structure. For factor loading in this study, this measure was applied to determine variables and factor loadings for each variable.

The Varimax rotation method with Kaiser Normalization as recommended by Field (2009) was undertaken to assess the loading of each variable on the four constructs of the model and to confirm the robustness of the model. Factor analysis was used to identify the contribution of each variable (Field 2009; Hair et al. 2006), and the percentage of correlation among the variables in the model.

4.6.2 Factor Analysis for Board Operating Environment

Kaiser-Meyer-Olkin measure of sample adequacy statistic was 0.509 which is classified as good and therefore the variables were subjected to factor analysis as sample size was adequate. Bartlett's Test of Sphericity, (Chi-Square=618.313, $p<.001$).

Table 4.15: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.509
Bartlett's Test of Sphericity	Approx. Chi-Square	618.317
	df	78
	Sig.	.000

The study sought to establish the factor loading for construct of board operating environment. Results in the table below shows that all the 13 items on the construct OBE1, OBE2, OBE3, OBE4, OBE5, OBE6, OBE7, OBE8, OBE9, OBE10, OBE11, OBE12 and OBE13 had a factor loading of above 0.50. The construct with the highest factor loading was "the board members receive the annual calendar of events for the board" with a factor loading of 0.877 followed by "board members declare conflict of interest where there is a possibility of such occurrence" and "the board members keep time in both full board and committee meetings" with factor loadings 0.792 and 0.778 respectively.

Table 4.16*:* Factor Loading for Board Operating Environment

CODE	ITEM	Extraction
OBE1	In the board meetings the board members respect each other's views	.710
OBE2	The chairman allows members equal opportunities to contribute to discussions	.661
OBE3	Most meetings are held in a timely manner	.642
OBE4	New members are taken through induction on procedures and rules of the board	.716
OBE5	The board members keep time in both full board and committee meetings	.778
OBE6	The chairman dominates the meetings	.622
OBE7	The board members receive the annual calendar of events for the board	.877
OBE8	The board members receive monthly briefings from management regarding matters that are important to the company performance	.660
OBE9	The organization has a clear corporate governance structure	.591
OBE10	The board members access the company database when they want	.697
OBE11	The board members have not been employed by the organization within the last five years	.730
OBE12	Board members declare conflict of interest where there is a possibility of such occurrence	.754
OBE13	Board members declare conflict of interest where there is a possibility of such occurrence	.792

4.6.3 Analysis for Board Role

Kaiser-Meyer-Olkin measure of sample adequacy statistic was 0.572 which is classified as good and therefore the variables were subjected to factor analysis as sample size was adequate. Bartlett's Test of Sphericity, (Chi-Square=2227.335, p<.001) implied that the factors of board role were related.

Table 4.17: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.572
Bartlett's Test of Sphericity	Approx. Chi-Square	2227.335
	df	190
	Sig.	.000

The study sought to find out the factor loading for construct of board role. Results in the table below shows the factor loading for construct of board role, all the 20 factors were accepted. They are, BR1, BR2, BR3, BR4, BR5, BR6, BR7, BR8, BR9, BR10, BR11, BR12, BR13, BR14, BR15, BR16, BR17, BR18, BR19 and BR20 .The factor with the highest factor loading was 'The board receives information timely' with a factor loading of .862, followed by' The board usually accepts the evaluation of strategic decisions by the top management without asking probing questions' with a factor loading of 0.848. The item with the least factor was 'The board usually determines the timing and criteria of the evaluation, but that information is supplied by the top management and it is rarely challenged by the board' with a factor loading of 0.607

Table 4.18: Factor loadings for Board Role

CODE	ITEM	Extraction
BR1	The board of directors is involved in the formation of strategic decisions	.705
BR2	The board usually ratifies strategic proposals which are formed solely by the top management	.783
BR3	The board usually asks probing questions which lead to revisions of strategic proposals formed by the top management	.729
BR4	The board usually helps the top management to form strategic decisions within and between board meetings	.658
BR5	The board usually forms the strategic decisions separately from the top management	.729
BR6	The board is not usually involved with the monitoring of the progress of strategic decisions	.835
BR7	The board usually accepts the evaluation of strategic decisions by the top management without asking probing questions	.848
BR8	The board usually accepts the evaluation of strategic decisions by the top management after asking probing questions	.777
BR9	The board usually determines the timing and criteria of the evaluation, but that information is supplied by the top management and it is rarely challenged by the board	.607
BR10	The board usually determines the timing and criteria of the evaluation and often requests additional information after receiving the progress report from the top management	.751
BR11	The board usually collects its own information about the progress of the strategic decision in addition to the top management reports	.623
BR12	The selection of the board members has resulted in the best mix of board members	.753
BR13	The selection process for CEO has resulted in the best mix of board members	.771
BR14	Our corporation is truly living its mission	.813
BR15	The corporation's assets resources and investments are well stewarded and safeguarded	.821
BR16	The mandate of our board is clear	.753
BR17	The board committees of our corporation are utilized in enhancing board oversight	.755
BR18	The board of directors spearheads a culture of learning and innovation in the corporation	.653
BR19	The board receives information timely	.862
BR20	The board members undertake annual performance evaluating evaluation\Assessment	.744

4.6.4 Factor Analysis for Information Technology Maturity

Kaiser-Meyer-Olkin measure of sample adequacy statistic was 0.545 which is classified as good and therefore the variables were subjected to factor analysis as sample size was adequate. Bartlett's Test of Sphericity, (Chi-Square=1909.378, p<.001) implied that the factors of information technology maturity were related

Table 4.19: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.545
Bartlett's Test of Sphericity	Approx. Chi-Square	1909.378
	df	190
	Sig.	.000

The study sought to find out the factor loadings for construct of information technology maturity. Results in the table below shows the factor loading for construct of information technology maturity, all the 20 factors were accepted. They are, IT1, IT2, IT3, IT4, IT5, IT6, IT7, IT8, IT9, IT10, IT11, IT12, IT13, IT14, IT15, IT16, IT17, IT18, IT19 and IT20.The factor with the highest factor loading was 'Our IT functions is clear about its goals and responsibilities' with a factor loading of .744, followed by' We are adequately informed on the potential use of IT by competitive forces (including consumers, suppliers, and competitors) in our industry' with a factor loading of 0.735. The item with the least factor loading was 'The IT specialist-user relations in our firm are constructive with a factor loading of 0.369.

Table 4.20: Factor loading for Information Technology Maturity

CODE		Extraction
IT1	Our IT projects support the financial and operational objectives and strategies of our organization	.584
IT2	We continuously examine the innovative opportunities IT can provide for competitive advantage	.606
IT3	We are adequately informed on the current use of IT by competitive forces (including customers, suppliers, and competitors) in our industry.	.621
IT4	We are adequately informed on the potential use of IT by competitive forces (including consumers, suppliers, and competitors) in our industry	.735
IT5	We have an adequate picture of the coverage and quality of our IT systems	.517
IT6	We are content with how our IT project priorities are set	.710
IT7	In our organization, the responsibility and authority for IT direction and development are clear	.726
IT8	In our organization the responsibility and authority for IT operations are clear	.635
IT9	We are confident that IT project proposals are properly appraised	.430
IT10	We constantly monitor the performance of IT functions	.714
IT11	Our IT functions is clear about its goals and responsibilities	.744
IT12	Our IT functions is clear about its performance criteria	.470
IT13	In our organization, user ideas are given due attention in IT planning and implementation	.669
IT14	Our IT specialist understands our mission and the organization	.716
IT15	The structure of our IT function fits our organization	.669
IT16	The IT specialist-user relations in our firm are constructive	.369
IT17	In my organization the board of directors perceives that future exploration of IT is of strategic importance	.584
IT18	There is a top-down planning process for linking information systems strategy to organization needs.	.715
IT19	We have resource (including people) for IT development within the organization	.635
IT20	We have mechanisms for introduction of, or experimentation with, new technologies within the organization	.732

4.6.6 Autocorrelation

Durbin-Watson Test was used to check serial correlation among variables. When error terms from different (usually adjacent) time periods are correlated, the error term is serially correlated. Therefore, to use a linear model, the dependent variable must be independent. This means that there should be no serial correlation among the observations.

The dependent variable in this study was tested using Durbin-Watson Test and the results are indicated in the table below. The result d=1.712 and p >0 , based on the rule of thumb by Field (2009) that regards values between 1.5 and 2.5 as being normal, indicate that there was no autocorrelation which a relationship between values is separated from each other by a given time lag in the residuals (prediction errors) from a regression analysis.

Table 4.21: Durbin Watson Test

Test Statistic (DW)	P-value
1.712	0.0321

4.6.7 Test of Multicollinearity

Multicollinearity in the regression model refers to unacceptably high level of inter-correlation among the independent variables making it difficult to separate the effects of the independent variables on the dependent variable. When multicollinearity exists, estimates are unbiased but assessments of the relative strength of the explanatory variables and their joint effect are unreliable. Multicollinearity was detected through analysis of the variation inflation factors (VIFs). The results of this analysis indicated that board structure had a Variance Inflator Factor of 1.076, board operating environment had 1.049, board demographics had 1.064, board role had a VIF of 1.149,

and information technology maturity had 1.037. All these were below the limit of 10 hence no presence of multicollinearity was indicated.

Table 4.22: Test for Multicollinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Board Structure	.929	1.076
	Board Operating Environment	.953	1.049
	Board Demographics	.940	1.064
	Board Role	.870	1.149
	Information Technology Maturity	.964	1.037

4.6.8 Heteroscedasticity

According to Madalla and Flores-Lagunes (2001), the variance of the error term (heteroscedasticity) in the model makes the results of the t and f statistics unreliable, because the estimators of the model are inefficient. The model applied in this study was tested using Levene's test for variance in the error term, heteroscedasticity, and was removed through the White diagonal test that corrects the variance of the error term (White, 1980). If the Levene statistic is significant at the 0.05 level or better, the researcher rejects the null hypothesis that the levels have equal variances.

The findings presented in Table 4.23 show that the Levene's statistics are not significant for all the variables. Therefore, the study fails to reject the null hypothesis that there are no significant variances in errors across the levels of the independent variables. Given the lack of heteroscedasticity, the study confirms the regression results from the data are reliable and accurate.

Table 4.23: Test of Homogeneity

	Levene Statistics	df	Sig.
Performance (ROA)	3.567	23	.621
Performance (ROS)	2.67	23	.531
Performance(Customer Satisfaction Index)	2.031	60	.653

4.6.9 Normality Test

The normality (Kolmogorov-Smirnov) test was performed on the dependent variable to determine if the data has a normal distribution. The generally accepted cut off, of above 0.05 was applied. The findings reveal that the data had normal distribution with a p value of 0.174, above the cutoff of 0.05 and therefore the null hypothesis that the data was not normally distributed was rejected and conclusion that the data had normal distribution reached at.

Table 4.24: One-Sample Kolmogorov-Smirnov Test

		Performance
N		24
Normal Parameters	Mean	.0252
	Std. Deviation	.09152
Most Extreme Differences	Absolute	.150
	Positive	.102
	Negative	-.150
Test Statistic		.150
Asymp. Sig. (2-tailed)		.174

The normal QQ plot which indicates the condition of normality for performance was also satisfied. The Quantile-Quantile (Q-Q) plot is an excellent way to see whether the data deviates from other distributions but only interested in the normal distribution.

According to Shenoy and Madan (1994), for a variable to be normally distributed most of the points should lie on the theoretical quantile line.

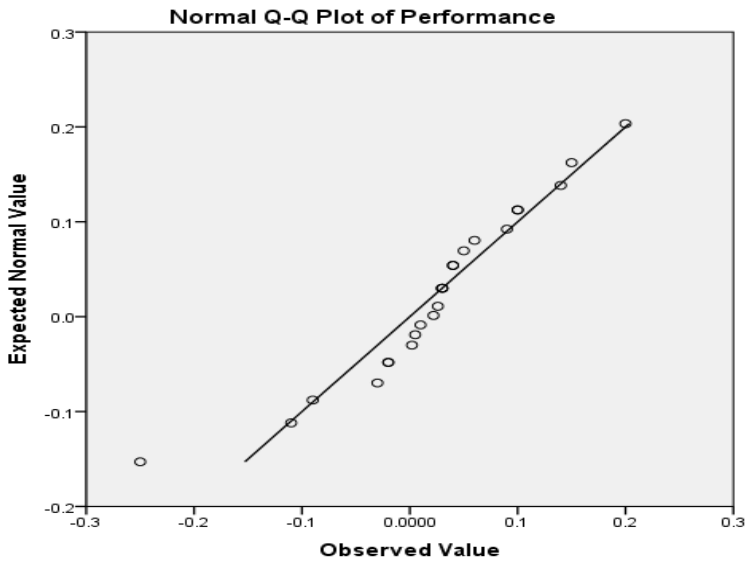


Figure 4.1: Normal Q-Q Plots for Performance

4.7 Inferential Statistics

4.7.1 Correlation Analysis

A correlation analysis was undertaken to investigate the relationship between variables. The Pearson correlation coefficient was used to determine the nature and strength of the relationship. This is a real number ranging from -1 to +1. Values close to zero imply weak correlation and close to 1 imply strong correlation. There were six constructs included in the model of this study. These were board structure, board operating environment, board demographics, board role, information technology maturity and performance of state owned enterprises.

Correlation analysis of these constructs was undertaken to identify the significant relationship among all the variables applied. Further, correlation analysis was applied to determine how well the regression line explained the variations of the dependent

variable with the independent variables. The correlation between the independent variables and the dependent variable of performance was positive and significant.

The findings indicated that there is a positive and significant relationship between board structure and performance ($r=.541$, $p<.001$), thus an increase in emphasis on board structure in the state owned corporations resulted in an increase in performance of 54.1%. Board operating environment exhibited a positive correlation with performance ($r=.476$, $p<.003$). This meant an increase in board operating environment increased the performance of the state-owned corporations by 47.6%. There was a positive and significant relationship between board demographics and performance ($r=0.372$, p value<0.05). This implies that a unit increase in board demographics increased performance of the state owed corporation by 37.2%.

There was a positive significant relationship between board role and performance ($r=0.471$, p value <0.05). This implies that an increase in board role increased the performance of the state owned corporations by 47.1%. Also, the results indicated that there is a positive correlation between information technology and performance of state owned corporations ($r=0.434$, p value<0.05). This implied that an increase in information technology maturity increased performance of the state owned corporations by 43.4%.

From the results, the correlation between board structure and board operating environment was positive and significant ($r=0.161$, p value<0.43). There was a positive and significant correlation between board operating environment and board role ($r=0.347$, p value<0.007) and between information technology and board structure ($r=0.247$, p value<0.34). There was a negative and significant correlation between information technology maturity and board role ($r=-.357$, p value<0.06). Overall, correlation among independent variables was weak and even insignificant. Since none of the Pearson coefficients between the independent variables is above 0.5 then it means that there is absence of multicollinearity.

Table 4.25*:* Correlations between Independent Variables and the Dependent Variable

		performance	Board structure	board operating environment	Board demographics	Board role	Information Technology
Performance	Pearson Correlation	1	.541**	.476**	.372*	.471**	.434**
	Sig. (2-tailed)		.001	.003	.042	.004	.003
	N	61	61	61	61	61	61
Board structure	Pearson Correlation	.541**	1	.161*	-.095	-.213	.247*
	Sig. (2-tailed)	.001		.043	.067	.105	.034
	N	61	61	61	61	61	61
Board operating environment	Pearson Correlation	.476**	.161*	1	.132	.347**	-.171
	Sig. (2-tailed)	.003	.043		.051	.007	.188
	N	61	61	61	61	61	61
Board demographics	Pearson Correlation	.372*	-.095	.132	1	.221	.085
	Sig. (2-tailed)	.042	.067	.051		.092	.514
	N	61	61	61	61	61	61
Board role	Pearson Correlation	.471**	-.213	.347**	.221	1	-.357**
	Sig. (2-tailed)	.004	.105	.007	.092		.006
	N	61	61	61	61	61	61
Information Technology Maturity	Pearson Correlation	.434**	.247*	-.171	.085	-.357**	1
	Sig. (2-tailed)	.003	.034	.188	.514	.006	
	N	61	61	61	61	59	61

4.8 Regression Analysis

In order to investigate the nature and strength of the relationship between board attributes and performance of state corporations, the study adopted the use of regression analysis. Kothari (2014) defines regression as the determination of a statistical relationship between two or more variables. In simple regression, there are two variables, one variable (defined as independent) is the cause of the behavior of another one (defined as dependent variable). When there are two or more than two independent

variables, the analysis concerning relationship is known as multivariate regression analysis.

4.8.1 Regression Results for Board Structure on Performance

The study sought to determine the relationship between board structure and performance which was measured by customer satisfaction. The study used regression to test the relationship between board structure and performance. The R^2 indicates how well the regression line fits the data. The R= 0.541 and R^2 value of 0.292 or 29.2% shows that 29.2% of the variation in performance was explained by variation in board structure. 70.8% of variation in performance was explained by other factors not in the model or by chance.

Table 4.26: Model Summary for Board Structure

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.541	.292	.270	.43498

a. Predictors: (Constant), Board structure

b. Dependent Variable: Performance

F-test was carried out to test the null hypothesis that there is a significant influence of board structure on performance. The findings showed that the model used was also not statistically significant as shown by F-statistic = 24.352 (p=0.00).

The results of ANOVA test show that the F value is 24.352 with a significance of p value = 0.00 which is less than 0.05, meaning the research reject the null hypothesis and concluded that there is a significant relationship between board structure and performance.

Table 4.27*:* ANOVA Analysis for Board Structure

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.607	1	4.607	24.352	.000[b]
	Residual	11.163	59	.189		
	Total	15.770	60			

The β value of 0.424 was also not significant at p value (0.000) since it was less than the level of significance of (0.05). Additionally, the T computed (4.935) is more than the T-critical (1.96) which implies that the predictor variable is significant. This therefore implies that board structure is a good predictor and it has significant influence on performance. This is inconsistent with the findings of Muigai (2014), Waithaka (2014), and Fakoya and Dzinngai (2017) who established that board structure has statistically significance influence. Some prior studies supporting stewardship theory contend that board structure (specifically board independence (influence performance negatively (Kiel and Nicholson, 2003).

Table 4.28*:* Coefficient for Board Structure on Performance of State Owned Corporations

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	6.043	1.331		5.148	.000
	Board structure	.424	.086	.541	4.935	.000

a. Dependent Variable: Performance

4.8.2 Regression results for Board Operating Environment on Performance

The second objective was to determine the relationship between board operating environment and performance which was measured by customer satisfaction. The R= 0.576 and R^2 value of 0.332 or 33.2% shows that 33.2% of the variation in performance is explained by variation in board operating environment. 66.8% of variation in performance is explained by other factors not in the model or by chance.

Table 4.29: Model Summary for Board Operating Environment

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.576	.332	.321	.61532

a. Predictors: (Constant), board operating environment

F-test was carried out to test the null hypothesis that there is no significant impact of operating and board environment on performance. The findings showed that the model used was statistically significant as shown by F-statistic =29.328 (p=0.000). The results of ANOVA test show that the F value is 29.328 with a significance of p value = 0.000 which is less than 0.05, meaning that null hypothesis was rejected and concluded that there is a significant relationship between board operating environment and performance. This is consistent with prior studies by Lorsch (2017) and Letting (2011) who underlined the significance of board environment especially culture and information access.

Table 4.30: ANOVA Analysis for Board Operating Environment

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.104	1	11.104	29.328	.000[b]
	Residual	22.338	59	.379		
	Total	33.443	60			

The β value of 0.787 in the table below is significant at p value (0.000) since it is less than the level of significance of (0.05). Additionally, the T computed (5.416) is more than the T-critical (-1.96) which implies that the predictor variable is significant. This therefore implies that board operating environment as a predictor and has a statistically significant influence on performance.

Table 4.31*:* Coefficients for Board Operating Environment on Performance

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.212	.461		11.303	.000
	board operating environment	.778	.144	.476	5.416	.000

a. Dependent Variable: Performance

4.8.3 Regression Results for Board Demographics on Performance

The third objective was to establish the relationship between board demographics and performance which was measured by customer satisfaction index. The R= 0.372 and R^2 value of 0.138 or 13.8% shows that 13.8% of the variation in performance is explained by variation in board demographics. 86.2% of variation in performance is explained by other factors not in the model or by chance.

Table 4.32: Model Summary for Board Demographics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.372	.138	.123	.74047

a. Predictors: (Constant), Board demographics

F-test was carried out to test the null hypothesis that there is no significant impact of board demographics on performance. The findings showed that the model used was not statistically significant as shown by F-statistic = 9.455 (p=0.061). The results of ANOVA test show that the F value is 9.455 with a significance of p value = 0.061 which is more than 0.05, meaning that null hypothesis was not rejected and concluded that there is no significant relationship between board demographics and performance.

Table 4.33: ANOVA Analysis for Board Demographics

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.547	1	42.547	9.455	.061[b]
	Residual	265.491	59	4.499		
	Total	308.038	60			

a. Dependent Variable: performance

b. Predictors: (Constant), Board demographics

The β value of 0.514 in the table below is not significant at p value (0.061) since it is more than the level of significance of (0.05). Additionally, the T computed (1.848) is less than the T-critical (1.96) which implies that the predictor variable is not significant. This therefore implies that board demographics is not a good predictor and it has no significant influence on performance. Diversity of the board of directors has been considered an important factor and indeed embedded in codes such as OECD principles of Governance (OECD, 2015). This study's findings appear to contradict stakeholders' oriented approach that advocate for board members diversity with regards to backgrounds, areas of expertise, experience amongst others (Ochieng, 2016).

Table 4.34*:* Coefficient for Board Demographics on Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.148	2.997		2.385	.000
	Board demographics	.514	.278	.372	1.848	.061

a. Dependent Variable: performance

4.8.4 Regression Results for Board Role on Performance

The fourth objective was to establish the relationship between board role and performance which was measured by customer satisfaction index. The study used regression to test the relationship between board role and performance. The R= 0.471 and R^2 value of 0.221 or 22.1% shows that 22.1% of the variation in performance is explained by variation in board role. 77.9% of variation in performance is explained by other factors not in the model or by chance.

Table 4.35: Model Summary for Board Role

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.471	.221	.217	.534

a. Predictors: (Constant), Board role

F-test was carried out to test the null hypothesis that there is significant impact of board role on performance. The findings showed that the model used was statistically significant as shown by F-statistic = 16.821 (p=0.000). The results of ANOVA test show that the F value is 16.821 with a significance of p value = 0.000 which is less than 0.05, meaning that null hypothesis was rejected and concluded that there is a significant relationship between board role and performance.

Table 4.36*:* ANOVA Analysis for Board Role

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.446	1	37.446	16.821	.000[b]
	Residual	131.281	59	2.225		
	Total	168.727	60			

The β value of 0.747 in the table below is significant at p value (0.000) since it is less than the level of significance of (0.05). Additionally, the T computed (2.776) is more than the T-critical (1.96) which implies that the predictor variable is significant. This therefore implies that board role is a good predictor and it has a significant influence on performance. These findings corroborate earlier studies on importance of board role by Miringu (2012) and Koech (2018) specifically the involvement of boards in strategic decision making (Letting, 2011; Muli, 2015).

Table 4.37*:* Coefficients for Board Role on Performance of State Owned Corporations

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	7.902	2.511		3.146	.000
	Board role	.747	.269	.471	2.776	.000

5.8.5 Regression Results for Information Technology Maturity on Performance

The fifth objective was to establish the moderating influence of information technology maturity and performance which was measured by customer satisfaction index. The study used regression to test the moderating relationship between information technology maturity and performance. The R= 0.434 and R^2 value of 0.188 or 18.8% shows that 18.8% of the variation in performance is explained by variation in information technology. 81.2% of variation in performance is explained by other factors not in the model or by chance.

Table 4.38*:* Model Summary for Information Technology Maturity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.434	.188	.174	.53762

a. Predictors: (Constant), Information Technology

F-test was carried out to test the null hypothesis that there is significant impact of information technology maturity on performance. The findings showed that the model used was statistically significant as shown by F-statistic = 13.732 (p=0.003). The results

of ANOVA test show that the F value is 13.732 with a significance of p value = 0.003 which is less than 0.05, meaning that null hypothesis was rejected, and conclusion reached that there is a significant relationship between information technology maturity and performance.

The findings are consistent with prior studies by Wibowo (2011) and Dutzas (2008) as well as those of Keramati, Mofrad, Bermanesh and Gholami (2016) that found information technology maturity to reinforce performance of firms by enabling organization processes.

Table 4.39*:* ANOVA Analysis for Information Technology Maturity

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.746	1	34.746	13.732	.003
	Residual	149.281	59	2.530		
	Total	184.027	60			

a. Dependent Variable: performance

b. Predictors: (Constant), Information Technology

The β value of 0.548 in the table below is significant at p value (0.000) since it is less than the level of significance of (0.05). Additionally, the T computed (2.502) is more than the T-critical (1.96) which implies that the predictor variable is significant. Information technology maturity is therefore considered a good predictor and has a significant influence on performance.

Table 4.40: Coefficient Table for Information Technology Maturity on Performance

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	9.353	3.233		2.892	.000
	Information Technology	.548	.199	.434	2.753	.000

a. Dependent Variable: Performance

4.8.6 Multiple Linear Regression

A multivariate regression analysis was undertaken to test the joint relationship of the independent variables and the dependent variable. The overall model where all the predictor variables are combined as board attributes factors influencing performance of state owned corporations is shown in table 4.41. For this model, R= 0.795 and R square value was 0.633 indicating that 63.3% of the variation in performance is explained by variation in board role, board demographics, board operating environment and board structure. This means that 36.7% is explained by other factors not in the model.

Table 4.41: Model Summary for Joint Relationship between Independent Variables and Dependent Variable

R	R Square	Adjusted R Square	Std. Error of the Estimate
.795	.633	.606	.623

The results of ANOVA shows that when board structure, operating and board environment, board demographics and board role were significant predictor variables of performance measured by customer satisfaction index. This is indicated by the F-statistics results (F= 24.157 p= 0.001) indicating that the model used was statistically significant.

Table 4.42*:* ANOVA Analysis for Joint Relationship between Independent Variables and Dependent Variable

1	Regression	431.265	4	107.816	24.157	.001[b]
	Residual	249.933	56	4.63		
	Total	681.198	60			

The results in table 4.43 shows board attribute variables, board structure, board operating environment, board demographics and board role combined and how they influence the performance of the state owned corporations. The coefficient β value for board structure is 0.442 is very significant at p value of (0.000) which is less than the level of significance of 0.05. Additionally the t computed 2.314 is greater than the T critical of (1.96) implying that the predictor variable board structure is significant and has an influence on the performance of state owned corporations when combined with the other board attribute factors. This therefore means we reject the null hypothesis that board structure has no influence on performance of state-owned corporations. The study agrees with the board plays a major role in protecting the interests of the shareholders/owners of an organization (Fama & Jensen, 1983). The findings are consistent with those of studies by Ochieng (2016) and Oluoch (2014).

When all predictor variables are combined, the coefficient β value for board operating environment (0.187) is significant at p value (0.002) which is less than the level of significance (0.05) implying that the predictor variable board operating environment is

significant. Additionally, the t computed (2.011) is greater than t critical 1.96 implying that board operating environment has an influence on the performance of state owned enterprises. This therefore means we reject the null hypothesis that board operating environment has no influence on the performance of state-owned enterprises.

The findings of the study concurs with the environment in which board of directors operate has been considered to influence organization performance (Koech, 2018). The operating environment of the board is considered from three perspectives according to Letting (2011), the board culture, board information access and formal independence of board members. These findings also support the argument by Darweesh (2015) that boards of directors need to be adaptable to respond effectively to opportunities that arise from the environment.

The coefficient β value for board demographics of 0.412 is not significant at p value (0.067) which is greater than the level of significance (0.05) implying that the predictor variable is not significant. The t computed 0.761 is less than t critical 1.96 implying that the predictor variable board demographics is not significant and therefore its influence on the performance of state owned corporations is not statistically significant. This therefore means we fail to reject the null hypothesis that board demographics has no significant influence on the performance of state owned enterprises.

Board role has a coefficient β value of 0.581 which is statistically significant at p value (0.001). The p value is lower than the level of significance (0.05) implying that the predictor variable board role is significant. Additionally, the t computed 3.899 is greater than t critical 1.96 indicating that board role is significant and has a significant influence on the performance of state owned enterprises when combined with the other board attribute factors. This therefore means we reject the null hypothesis that board role has no significant influence on the performance of state owned corporations. This is consistent with the findings by McKee (2005), (Namoga, 2011) and Siciliano (1996) who found a positive relationship between board role and performance. However, it is

inconsistent with the findings of Rose (2007), Balta (2008) and (Letting, 2011) who found no significant relationships.

Table 4.43: Overall Coefficient table

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Board structure	.442	.191	.089	2.314	.002
Board operating environment	.187	.093	.015	2.011	.003
Board demographics	.412	.234	.058	1.761	.067
Board role	.581	.149	.070	3.899	.001

The estimated regression model for this study is therefore:

$Y = \mathbf{0.442X_1 + 0.187X_2 + 0.412X_3 + 0.581X_4}$

Y = Performance of State Owned Enterprises

$\beta_1, \beta_2 \beta_3, \beta_4$ = Regression coefficients for each of the four independent variables

X_1, = Board structure

X_2 = Board operating environment

X_3= Board demographics

X_4, = Board role

4.9 Moderating effect of Information Technology Maturity on the relationship between Board Attributes and Performance

The study sought to establish the moderating effect of information technology on the relationship between board attributes and performance. The researcher applied multiple regression analysis to find out the influence of information technology on the relationship between board attributes and performance. The Regression results and findings are discussed.

To test the moderation, each of the study variables were examined individually against information technology maturity (moderator) as a predictor and also with the interaction term. A moderator variable influences the relationship between the dependent variable and the independent variable. The direction and magnitude of the relationship depends on the value of the moderator (Sekaran, 2006).

4.9.1 Moderating effect of Information Technology Maturity on the relationship between Board Structure and Performance.

The findings of the study showed that R2 for the first model was .189 meaning that board structure and information technology contributed 18.9% change in the performance of the state owned corporations. With addition of the interaction term (X_1*Z), the R2 improved to .247, an increase of 0.047, however the model became statistically insignificant since the p value=0.129 which was above 0.05.

Table 4.44: Model summary for the moderating effect of information technology on the relationship between board structure and performance

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.435	.189	.172	.572	.189	6.742	2	58	.002
2	.497	.247	.207	.596	.047	1.237	1	57	.129

The models for the moderating effect of information technology on the relationship between board structure and performance were found to be significant (p-value, <0.002; and p value<0.001). The F Change for board structure and information technology was significant (F Change=6.742 p –value, <0.002), implying that board structure and information technology maturity significantly influences performance.

Table 4.45: ANOVA for the moderating effect between information technology on the relationship between board structure and performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	119.064	2	59.532	6.742	.002
	Residual	512.141	58	8.830		
	Total	631.205	60			
2	Regression	131.337	3	43.779	4.982	.013
	Residual	500.868	57	8.787		
	Total	631.205	60			

The results in table 4.46 shows that when board structure was combined with information technology maturity the beta was (β=.593, t= 2.326, p-value<0.005) hence statistically significant. Information technology maturity beta was (β =.516, t=2.246, p value =0.007) Conclusion was therefore arrived that information technology maturity as a predictor, was significant in the model. In Model 2, the results showed that the introduction of the interaction term (X_1*Z) saw an improved beta for board structure (β=.608, t=2.014, p-value=0.022).

This was found to be positive and significant. Further, the findings showed that the interaction term also improved information technology maturity (β= .565, t=2.177, p-value=0.021). However, the interaction term(X_1*Z) showed positive and insignificant effects (β= .306, t= 1.182, p value=0.129). This implied that information technology

maturity does not moderate the relationship between board structure and performance of state owned enterprises.

Table 4.46: Coefficient table for the moderating effect of information technology on the relationship between board structure and performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	31.559	7.347		4.295	.000
	Board structure	.593	.255	.234	2.326	.005
	Information Technology maturity	.516	.207	.235	2.245	.001
2	(Constant)	28.317	8.469		3.344	.000
	Board structure	.608	.301	.440	2.014	.022
	Information Technology maturity	.565	.214	.308	2.641	.011
	X_1Z	.306	.168	.288	1.182	.129

a. Dependent Variable: performance

The equation of the models is as follows:

Model 1: $Y= 31.559 + 0.593X_1+ 0.516Z$

Model 2: $Y= 28.317 + 0.608X_1+ 0.565Z + 0.306XZ$

4.9.2 Moderating effect of Information Technology on the relationship between Board Operating Environment and Performance

The results of the study indicated that R squared for the first model was .264 implying that the combination of board operating environment and information technology accounted for 26.4% change in the performance of the state owned corporations. With an addition of the interaction term (X_2*Z), the R square improved to .314, an increase of 0.005, the model was significant since the p value =0.022 which was below 0.05.

Table 4.47: Model summary for the moderating effect of information technology on the relationship between board operating environment and performance

				Std. Error	Change Statistics				
Model	R	R Square	Adjusted R Square	of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.514	.264	.238	.422	.264	10.497	2	58	.001
2	.561	.314	.277	.446	.005	1.771	1	57	.022

The models for the moderating effect of information technology on the relationship between board operating environment and information technology maturity were found to be significant (p-value, <0.001; and p value<0.013). The F Change for board operating environment and information technology maturity was significant (F Change=10.497 p –value, <0.001), implying that board operating environment and information technology maturity significantly influences performance. With the introduction of the interaction term (X_2Z) to this model, the model was significant, revealing (F Change =1.711, p–value=0.022).

Table 4.48: ANOVA for the moderating effect between information technology on the relationship between board operating environment and performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	194.365	2	97.185	10.497	.001
	Residual	540.743	58	9.321		
	Total	735.108	60			
2	Regression	231.365	3	77.122	8.726	.013
	Residual	503.743	57	8.837		
	Total	735.108	60			

The results in Model 1 shows that when board operating environment was combined with information technology maturity the beta was (β=.497, t= 2.523, p-value<0.008) hence statistically significant. Information technology maturity beta was (β =.367, t=2.478, p value =0.012). This implied that information technology maturity as a predictor was significant.

In Model 2, the introduction of the interaction term (X_2*Z) there was an improved beta for board operating environment (β=0.518, t= 2.143, p-value=0.012). This was found to be positive and significant. With the addition of the interaction term, it was observed that, information technology maturity also improved and was positive and significant results (β= .422, t=2.684, p-value=0.009). The results showed that the interaction term(X_2*Z) was positive and had significant influence (β= .316, t= 2.121, p value=0.022). This implied that information technology maturity moderates the relationship between board operating environment and performance of the state owned enterprises.

Table 4.49: Coefficient table for the moderating effect of information technology on the relationship between board operating environment and performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.559	5.127		5.181	.000
	Board operating environment	.497	.197	.223	2.523	.008
	Information Technology maturity	.367	.148	.135	2.478	.012
2	(Constant)	25.317	5.231		4.839	.000
	Board operating environment	.518	.241	.440	2.143	.012
	Information Technology maturity	.422	.157	.218	2.684	.009
	X_2Z	.316	.149	.138	2.121	.022

The equation of the models is as follows:

Model 1: $Y= 26.559 + 0.497X_2+ 0.367Z$

Model 2: $Y= 25.317 + 0.518X_2+ 0.422Z + 0.316XZ$

4.9.3 Moderating effect of Information Technology on the relationship between Board Demographics and Performance

The results of the study indicated that R square for the first model was .116 implying that the combination of board demographics and information technology attributed to 11.6% change in the performance of the state owned corporations. With an addition of the interaction term (X_3*Z), the R squared improved to .147, an increase of 0.031, however the model became statistically insignificant since the p value =0.068 was below 0.05.

Table 4.50: Model summary for the moderating effect of information technology on the relationship between board demographics and performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.342	.116	.086	.516	.116	3.887	2	58	.057
2	.384	.147	.102	.654	.031	.159	1	57	.068

The models for the moderating effect of information technology on the relationship between board demographics and information technology maturity were found insignificant (p-value is 0.057; and p value is 0.112). The F Change for board demographic and information technology maturity was insignificant (F Change= 3.887 p value is 0.57), implying that board demographics and information technology maturity insignificantly influences performance of the state owned corporations. With the introduction of the interaction term (X_3Z) to this model, the model deteriorated and became insignificant, revealing (F Change =.159, p value=0.112).

Table 4.51: ANOVA for the moderating effect between information technology on the relationship between board demographics and performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.315	2	13.657	3.887	.057
	Residual	204.116	58	3.519		
	Total	231.431	60			
2	Regression	34.126	3	11.375	3.256	.112
	Residual	197.305	57	3.461		
	Total	231.431	60			

The results in Model 1 shows that when board demographics was combined with information technology maturity the beta was (β=.342, t= 1.828, p-value<0.068) hence not statistically significant. Information technology maturity beta was (β =.387, t=2.026, p value =0.041). This implied that information technology maturity as a predictor was significant. In Model 2, the introduction of the interaction term (X_3*Z) there was an improved beta for board demographics (β=0.367, t= 1.662, p-value=0.121). This was found to be positive and not significant.

With the addition of the interaction term, it was observed that, information technology maturity also improved and was positive and significant results (β= .412, t=2.049, p-value=0.039). The results showed that the interaction term(X_3*Z) was positive and not significant effects (β= .289, t= 1.939, p value=0.068). This implied that information technology maturity does not moderate the relationship between board demographics and performance in the state owned corporations.

Table 4.52: Coefficient table for the moderating effect of information technology on the relationship between board demographics and performance

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	26.331	6.144		4.286	.000
	Board demographics	.342	.187	.153	1.828	.068
	Information Technology maturity	.387	.191	.112	2.026	.041
2	(Constant)	24.321	5.564		4.372	.000
	Board demographics	.367	.221	.123	1.662	.121
	Information Technology maturity	.412	.201	.218	2.049	.039
	X_3Z	.289	.149	.098	1.939	.068

The equation of the models is as follows:

Model 1: $Y= 26.331 + 0.3427X_3+ 0.387Z$

Model 2: $Y= 24.321 + 0.367X_3+ 0.412Z + 0.289X_3Z$

4.9.4 Moderating effect of Information Technology on the relationship between Board Role and Performance

The results of the study indicated that R square for the first model was .281 implying that the combination of board role and information technology attributed to 28.1% change in the performance of the state owned corporations. With an addition of the interaction term (X_4*Z), the R square improved to .302, an increase of 0.076, the model was statistically significant since the p value =0.014 was less than 0.05.

Table 4.53: Model summary for the moderating effect between information technology on the relationship between board role and performance

				Std. Error	Change Statistics				
Model	R	R Square	Adjusted R Square	of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.531	.281	.252	.952	.281	11.424	2	58	.003
2	.550	.302	.265	.832	.076	5.382	1	57	.014

The models for the moderating effect of information technology on the relationship between board role and performance were found significant (p-value is 0.003; and p value is 0.029). The F Change for board role and information technology maturity was significant (F Change= 12.204 p value is 0.003), implying that board role and information technology maturity significantly influences performance of the state owned

enterprises. With the introduction of the interaction term (X_3Z) to this model, the model deteriorated and was insignificant, revealing (F Change =5.382, p value=0.014).

Table 4.54: ANOVA for the moderating effect between information technology on the relationship between board role and performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	208.635	2	104.317	11.422	.003
	Residual	529.677	58	9.132		
	Total	738.312	60			
2	Regression	223.421	3	74.474	8.244	.029
	Residual	514.891	57	9.033		
	Total	738.312	60			

The results in Model 1 shows that when board role was combined with information technology maturity the beta was (β=.452, t= 2.567, p-value<0.003) hence statistically significant. Information technology maturity beta was (β =.411, t=2.014, p value =0.023).

This implied that information technology maturity as a predictor was significant. In Model 2, the introduction of the interaction term (X_4*Z) there was an improved beta for board role (β=0.517, t= 2.612, p-value=0.001). This was found to be positive and significant. With the addition of the interaction term , it was observed that, information technology maturity also improved and was positive and significant results (β= .434, t=2.087, p-value=0..021). The results showed that the interaction term(X_4*Z) was positive and had significant effects (β= .379, t= 2.383, p value=0.013). This implied that information technology maturity moderates the relationship between board role and performance in the state owned corporations.

Table 4.55: Coefficient table for the moderating effect of information technology on the relationship between board role and performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	29.341	7.132		4.114	.000
	Board role	.452	.176	.233	2.567	.003
	Information Technology maturity	.411	.204	.231	2.014	.023
2	(Constant)	25.211	5.123		4.921	.000
	Board role	.517	.198	.233	2.612	.001
	Information Technology maturity	.434	.208	.212	2.087	.021
	X_4Z	.379	.159	.148	2.383	.013

a. Dependent Variable: performance

The equation of the models is as follows:

Model 1: $Y= 29.341 + 0.452X_4+ 0.411Z$

Model 2: $Y= 25.211 + 0.517X_4+ 0.434Z + 0.379X_4Z$

The results of the study indicated that R for the moderation of information technology maturity on the relationship between board attributes and performance is .653 with an addition of the interaction terms (X_1*Z), (X_2*Z), (X_3*Z) and (X_4*Z), the R2 is 0.427, implying that 42.7% of the performance can be attributed to the moderation of information technology maturity on board attributes

Table 4.56: Model summary for the moderation of information technology on the relationship between board attributes and performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.653[a]	.427	.397	.92130

a. Predictors: (Constant), X_4Z, board structure , board operating environment, Board role , Board demographics, X_2Z, X_1 , X_3Z

The model for the moderating effect of information technology on the relationship between board attributes and information technology maturity was found to be significant (p value<0.001). The introduction of the interaction term (X_1Z, X_2Z, X_3Z, X_4Z) was significant, revealing (F =4.851, p–value=0.001).

Table 4.57: Anova for the moderation of information technology on performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	121.112	8	15.139	4.851	.001[b]
	Residual	162.287	52	3.120		
	Total	283.399	60			

The results show the moderating effect of information technology maturity on the relationship between board attributes and performance. The coefficient β value for board structure is 0.706 is very significant at p value of (0.000) which is less than the level of significance of 0.05. Additionally, the t computed 4.9337 is greater than the T critical of (1.96) implying that the predictor variable board structure is significant and has an influence on the performance of state owned corporations.

The coefficient β value for board operating environment (0.517) is significant at p value (0.000) which is less than the level of significance (0.05) implying that the predictor variable board operating environment is significant. Additionally, the t computed (3.692) is greater than t critical 1.96 implying that board operating environment has an influence on the performance of state owned enterprises.

The coefficient β value for board demographics of 0.437 is not significant at p value (0.104) which is greater than the level of significance (0.05) implying that the predictor variable is not significant. The t computed 1.741 is less than t critical 1.96 implying that the predictor variable board demographics is not significant and therefore its influence on the performance of state owned corporations is not statistically significant.

Board role has a coefficient β value of 0.623 which is statistically significant at p value (0.001). The p value is lower than the level of significance (0.05) implying that the predictor variable board role is significant. Additionally the t computed 3.296 is greater than t critical 1.96 indicating that board role is significant and has an significant influence on the performance of state owned enterprises.

The results showed that the combination of the interaction term (X_1*Z) was positive and had insignificant effects (β= .512, t= 1.885, p value=0.083). This implied that information technology maturity insignificantly moderates the relationship between board structure and performance in the state owned corporations. The findings also indicated that the overall combination of the interaction term (X_2*Z) was positive and was significant (β= .530, t= 3.841, p value=0.000). This implied that information technology maturity moderates the relationship between board operating environment and performance in the state owned corporations.

The results shows that the overall combination of the interaction term (X_3*Z) was positive and was not significant (β= .506, t= 1.867, p value=0.072). This implied that information technology maturity does not moderate the relationship between board demographics and performance in the state owned corporations. The results shows that

the overall combination of the interaction term (X_4*Z) was positive and was significant (β= .697, t= 4.801, p value=0.000). This implied that information technology maturity moderates the relationship between board role and performance in the state owned corporations.

Table 4.58: Coefficient table for the moderation of information technology maturity on the relationship between board attributes and performance

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	19.359	2.357		8.213	.000
board structure	.706	.143	.618	4.937	.000
board operating environment	.517	.140	380	3.692	.000
Board demographics	.437	.251	.313	1.741	.104
Board role	.623	.189	.143	3.296	.000
X_1Z	.512	.276	.292	1.855	.083
X_2Z	.530	.138	.262	3.841	.000
X_3Z	.506	.271	.256	1.867	.072
X4Z	.697	.145	.441	4.801	.000

Hence, applying the regression coefficients in the table above, the fitted regression model for this study was:

$$\mathbf{Y= 19.359 + 0.706X_1 + 0.517X_2 + 0.437X_3 + 0.623X_4 + 0.712X_1Z+ 0.530X_2Z+ 0.506X_3Z+ 0.697X_4Z}$$

4.10 Regression Results for board attributes and Return on sales for commercial state-owned Corporation

An regression analysis was also undertaken on the board attributes and performance, measured on the basis of Return on Assets (ROA) and also Return on Sales (ROS) for commercial corporations as the financial performance data only applied to these enterprises.

Table 4.59 presents the regression model on board attributes and Return on Sales for commercial state-owned corporations. As presented in the table, the coefficient of determination R square is 0.383 and R is 0.619. The coefficient of determination indicates that 38.3% of the variation on Return on Sales is influenced by board attributes that is board structure, operating and board environment, board demographics and board role.

Table 4.59: Model Summary for Board Attributes and Return on Sales

R	R Square	Adjusted R Square	Std. Error of the Estimate
.619	.383	.253	.09745

The results of ANOVA test in table 4.55 show that the F value is 3.11 with a significance of p value = 0.012 which is less than 0.05, meaning that null hypothesis was rejected and concluded that there is a significant relationship between board attributes and ROS.

Table 4.60: ANOVA Analysis for Board Attributes and Return on Sales

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.112	4	.028	3.11	.012[b]
	Residual	.180	19	.009		
	Total	.292	23			

Holding all factors (Board structure, Operating and Board environment, Board demographics and Board role) constant at zero, Return of Sales will be .041. The data findings also show that the β value of board structure was 0.007 and not significant at p value (0.072) since it is more than the level of significance of (0.05). This therefore implies that board structure is not a good predictor and it has no significant influence on return on sales. The study fails to reject the null hypothesis board structure has no influence on return on sale of state owned corporations.

The β value of board operating environment was 0.016 and not significant at p value (0.061) since it is more than the level of significance of (0.05). This therefore implies that board operating environment is not a good predictor and it has no significant influence on return on sale. The study fails to reject the null hypothesis that board operating environment has no influence on return on sale of state owned corporations.

The β value of board demographics was 0.044 and not significant at p value (0.056) since it is more than the level of significance of (0.05). This therefore implies that board demographics is not a good predictor and it has no significant influence on return on sale. The study failed to reject the null hypothesis board demographics has no influence on return on sales for state owned corporations.

The β value of board role was 0.025 and significant at p value (0.012) since it is less than the level of significance of (0.05). This therefore implies that board role is a good predictor and it has significant influence on return on sales. The study rejects the null hypothesis that board role has no significant influence on return on sales for state owned corporations.

Table 4.61: Coefficient Table for Board Attributes and Return on Sales

		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.041	.012		3.414	.000
	Board structure	.007	.004	.084	1.751	.072
	Board operating environment	.016	.009	.160	1.778	.061
	Board demographics	.044	.024	.098	1.833	.056
	Board role	.025	.012	.034	2.083	.012

a. Dependent Variable: ROS

Hence, applying the regression coefficients in the table above, the fitted regression model for this study was:

$$\mathbf{Y = .041 + .007X_1 + 0.016X2 + 0.044X_3 + 0.0025X_4}$$

4.11 Regression results for board attributes on return on assets on commercial state owned corporations

Table 4.62 presents the regression model on board attributes and Return on Assets. As presented in the table, the coefficient of determination R square is 0.309 and R is 0.556. The coefficient of determination indicates that 30.9% of the variation on Return on Asset is influenced by board attributes that is board structure, operating and board environment, board demographics and board role.

Table 4.62: Model Summary for Board Attributes and Return on Assets

R	R Square	Adjusted R Square	Std. Error of the Estimate
.556	.309	.163	.05304

The results of ANOVA test in table 4.63 show that the F value is 2.091 with a significance of p value = 0.001 which is less than 0.05, meaning that null hypothesis was rejected and concluded that there is a significant relationship between board attributes and ROA.

Table 4.63: ANOVA Analysis for Board Attributes and Return on Assets

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.941	4	.235	2.091	.001[b]
	Residual	2.103	19	.110		
	Total	3.044	23			

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Board role, Board demographics, Board structure, Operating and board environment

The data findings show that the β value of board structure was 0.230 and is significant at p value (0.000) since it is less than the level of significance of (0.05). This therefore implies that board structure is a good predictor and it has significant influence on return on assets. The null hypothesis that board structure has no influence on return on assets of state owned corporations is therefore rejected and conclusion made that board structure has significant influence on return on assets for state owned enterprises.

The β value of operating and board environment was 0.151 and is significant at p value (0.001) since it is less than the level of significance of (0.05). This therefore implies that operating and board environment is a good predictor and it has a significant influence on return on asset. The study rejected the null hypothesis that board operating environment has no influence on return on asset of state owned corporations.

The β value of board demographics was 0.124 and not significant at p value (0.004) since it is less than the level of significance of (0.05). This therefore implies that board demographics is a good predictor and it has a significant influence on return on asset. The study rejected the null hypothesis that board demographics has no influence on return on asset of state owned corporations.

The β value of board role was 0.225 and significant at p value (0.009) since it is less than the level of significance of (0.05). This therefore implies that board role is a good predictor and it has significant influence on return on asset. The study rejects the null hypothesis that board role has no influence on return on asset of state owned corporations.

Table 4.64: Coefficient Table for Board Attributes and Return on Assets

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	.136	.091		1.495	.092
Board structure	.230	.071	.498	3.239	.000
Operating and board environment	.151	.054	.247	2.796	.001
Board demographics	.124	.061	.334	2.032	.004
Board role	.225	.104	.217	2.163	.009

4.12 Optimal Model

To obtain the optimal model the insignificant variable board demographics was removed. The study used regression to test the relationship between board structures, board role, board operating environment and information technology maturity on performance. The R^2 tells us how well the regression line fits the data. The R= 0.756 and R^2 value of 0.572 or 57.2% shows that 57.2% of the variation in performance is explained by variation board structure, operating and board environment, board role and information technology. 42.8% of variation in performance is explained by other factors not in the model or by chance.

Table 4.65: Optimal Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.756	.572	.541	.34112

The results of ANOVA test show that the F value is 5.177 with a significance of p value = 0.000 which is less than 0.05, meaning that there is a significant relationship between board attributes and performance.

Table 4.66: ANOVA Analysis for the Optimal Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	418.567	4	104.642	18.744	.000[b]
	Residual	312.630	56	5.582		
	Total	731.197	60			

After excluding the independent variable board demographics, a further test on the beta coefficients of the resulting model shows that, board structure, board operating environment, board role and information technology maturity had a significant effect on performance with gradients 0.370, 0.353, 0.559 and 0.349 respectively as shown in the table below.

Table 4.67: Coefficient Model for Optimal Model

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	6.377	3.423		2.631	.000
	Board structure	.370	.178	.726	2.077	.011
	Board operating environment	.353	.117	.628	3.017	.008
	Board role	.559	.128	.843	4.36	.000
	Information Technology	.349	.119	.739	2.932	.004

This implies that the optimal model for the fitted regression $Y = \beta_1 X_1 + \beta_2 X_2 + \beta_4 X_4 + \beta_5 X_5 + e$ is as follows:

$Y = 6.377 + 0.37X_1 + 0.353X_2 + 0.559X_4 + 0.559X_5$

Where:

Y = Performance

X_1 = Board structure

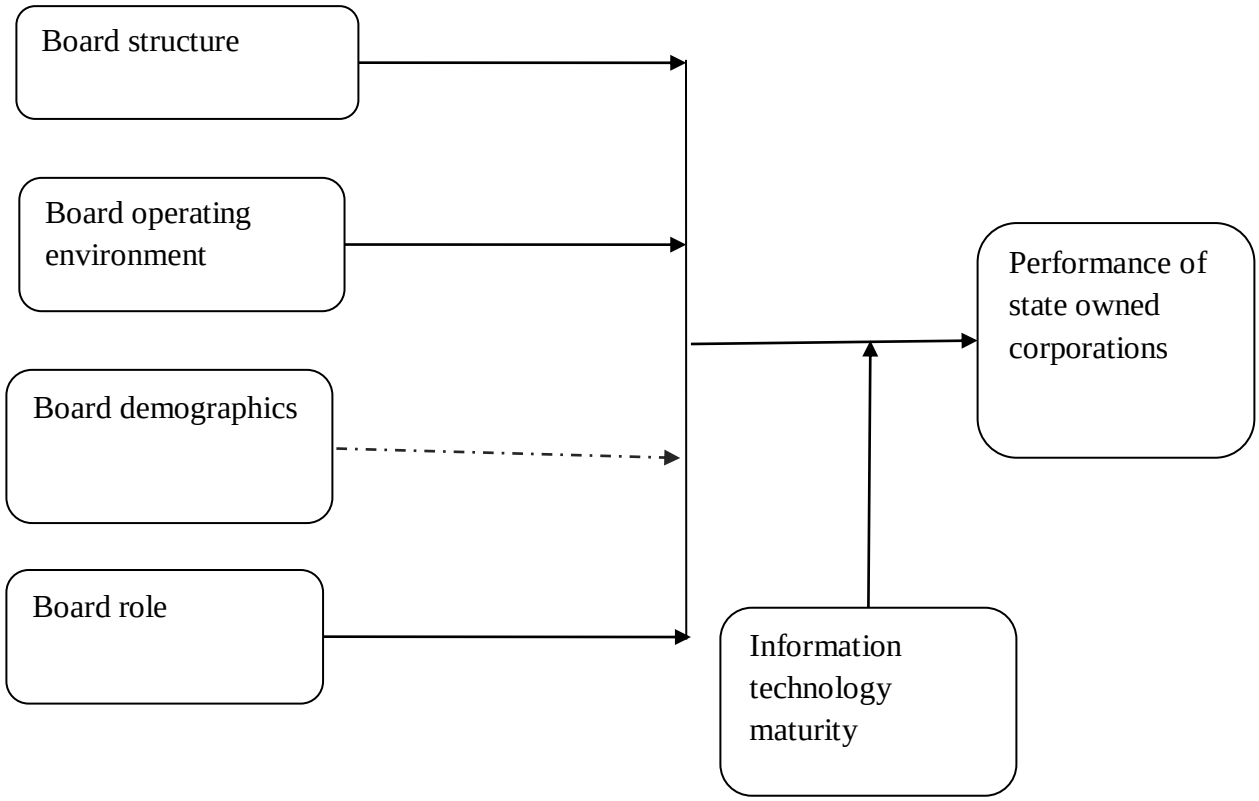
X_2= board operating environment

X_4= Board role

X_5= Information Technology Maturity

The proposed model shows that board role (Beta =0.843) was the most important in influencing organisational performance. This was followed by information technology maturity (Beta=0.739), board structure (Beta=0.726) and finally operating environment for the board (Beta = 0.628).

The revised conceptual model, showing the board attributes with significant influence (board structure, board operating environment and board role) on performance of state owned enterprises is proposed as follows:



Key

Significant relationship

No significant relationship

Figure 4.2: Revised model of the influence of board attributes on performance of state owned corporations

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings of this study, the conclusions and attendant recommendations. The objective of this study was to establish the influence of board attributes on the performance of state owned enterprises in Kenya. The study's results, as presented in chapter four, have been analyzed to arrive at findings based on the aim and the specific objectives. Conclusions and recommendations have been drawn accordingly from these findings in line with the specific objectives and the results of the statistical analysis undertaken to test the research hypothesis of this study.

5.2 Summary of findings

5.2.1 Influence of Board Structure on Performance of State Owned Enterprises in Kenya

The first objective of the study was to assess the influence of board structure on the performance of the state owned enterprises. The study established that board structure as determined by board size, board independence, and board committees on its own had no statistically significant relationship with performance of State owned enterprises. However, the jointly with other board attribute variables it was established to be of significance. The code of good governance issued by the state corporations' advisory committee in Kenya recommends modest boards of nine members, a significant proportion of independent directors and indeed restricts board members of state owned enterprises from serving in more than two firms. These guidelines are aimed at strengthening corporate governance practices in state owned enterprises and are geared to respond to the appalling state of poor performance of state enterprises.

They also seek the uplift the standards of self-regulation to international standards. The board structure is therefore a critical component in determining the performance of the organization and the composition in terms of numbers and committees may have significant effect on performance of state owned enterprises when considered together with the board operating environment, role and information technology maturity.

5.2.2 Influence of Board Operating Environment on Performance of State Owned Enterprises in Kenya

The second objective of the study was to find out the influence of board operating environment on the performance of the state owned enterprises in Kenya. The study established that board operating environment had a statistically significant and positive relationship with performance of state owned enterprises in Kenya. This implies that organizations should invest in improving the environment in which the boards of directors operate through guarding formal independence, enhancing access to information and fostering a board culture that supports team work, probity and self-evaluation.

5.2.3 Influence of Board Demographics on Performance of State Owned Enterprises in Kenya

The third objective of the study was to establish the influence of board demographics on the performance of state owned enterprises in Kenya. The study found that board demographics did not have a statistically significant relationship with performance of state owned enterprises in Kenya. Diversity was therefore not found to be statistically significant in this study. Notably, the current code of governance encourages board diversity in terms of gender balancing, education level and requirement for independent. The board demographics descriptive analysis findings indicate that the state owned enterprises are moving towards this direction.

5.2.4 Influence of Board Role on Performance of State Owned Enterprises in Kenya

The fourth objective of the study was to establish the influence of board role on the performance of state owned enterprises in Kenya. The study considered board of directors as a social construction and that board members were understood through their attributes, working styles and actual board task performance and processes inside the boardroom.

The board of directors is responsible for setting strategic direction of the organization and for overseeing and monitoring the affairs of the organization. Board members were presumed to be involved in review and approval of financial goals of the state owned enterprises, approving strategic plans and annual budgets too.

The study findings revealed that board role was statistically significant in influencing the performance of the state owned enterprises. It is notable that directors typically rate their board effectiveness highly and weak ratings ordinarily go to evaluation of the CEO and succession planning implying that such activities are difficult or less focal. It is therefore essential that the board role, especially with regards to the board monitoring function is evaluated on a regular basis to accord enhancement.

5.2.5 Influence of Information Technology Maturity on the Relationship between Board Attributes and Performance of State Owned Enterprises in Kenya

The fifth objective of the study was to find out whether information technology maturity moderates the relationship between board attributes and performance of state owned enterprises in Kenya. The study established that information technology maturity measured by information technology planning, control and focus on integration statistically was significant as a moderator of the relationship between board attributes and performance of state owned enterprises in Kenya. The role of information technology in influencing firm performance through firm processes is deemed important

and therefore organizations should invest in enhancing their information technology maturity level through integration of planning, control and monitoring aspects.

5.3 Conclusions

The overall objective of the study was to determine the influence of board attributes on performance of state owned enterprises in Kenya. This was achieved by first determining the extent to which the board structure influences performance. Then the influence of board operating environment and board demographics on performance were determined sequentially. Following which the influence of board role on performance was determined, and then the moderating effect of information technology maturity in the relationship between board attributes and performance was tested.

The major conclusions of the study were as follows. In terms of board structure, the average board size was 10 members and the majority of the board members (37%) were between 40-50 years in age. 63.5% of the board members were male with women contributing 36.5%. The most common areas of specialization for most of the board members were business administration at 16%.

The relationship between board attributes (board role, board operating environment and board structure) was found to be statistically significant and positive and indeed moderated by information technology maturity. However, board demographics does not have a statistically significant influence on the performance of state owned enterprises.

In conclusion, the conceptual framework, methodology and findings of this study are critical to scholars in governance, strategy, general management and organization behavior, as well as practitioners to examine board attributes applying integrated theoretical frameworks. Various economic and management theories have different relevance and reflect the real changes in the governance and performance relationships.

In the spirit of this study, future studies should consider larger datasets covering extended periods of time and applying longitudinal analysis. Governance of state owned enterprises is unique and regulators have to be careful in stretching the parallels with the private sector too far (Waduge, 2011) especially in the development of codes of practices. These findings are therefore in line with those of other scholars who examined the effects of board characteristics on firm performance and concluded that some of the characteristics did influence performance and do affirm the relevance of the selected theories of corporate governance.

5.4 Recommendations

The following recommendations have been proposed based on the findings of this study and the attendant conclusions:

5.4.1 Recommendations for Practitioners

The results about the board attributes and performance relationships have implications for investors, shareholders and regulators. The results reveal that board structure has significant influence on the performance of state owned corporations in Kenya. Specifically, the shareholders and regulators of commercial state owned enterprises should establish and enhance policies and systems that support increasing independence of the board and reducing the size of the board of directors so as to increase efficiency of the state owned enterprises.

Further, the top management should ensure that board diversity is embraced and that the role of board of directors in strategic decision making is enhanced. Finally, the study provides insights on the importance of information technology maturity particularly with regards to planning for information technology investments and focusing on integration of information technology systems to enhance transparency and promoting the role of board of directors in enhancing performance.

5.4.2 Recommendations for Scholars

This study highlighted the role of governance in improving the performance of state owned enterprises. The results suggested that agency theory, stakeholder theory and stewardship theory held an important role in governance of state owned enterprises in Kenya. The application of cross sectional research design, correlation analysis and multiple regression analysis was deemed to have impact on the relationships discerned in the current study.

The study reveals that board attributes play a significant role in determining performance of state owned enterprises. Particularly, the study indicates that nature of board structure and board demographic diversity has implications on the effectiveness of the board of directors and the overall performance of the organization. Further, the study reveals that information technology maturity has weak effect, as a moderating variable on the relationship between board attributes and performance of state owned enterprises. This study is of scholarly interest as it has contributed further in examining factors that influence organizational performance in the public enterprises. In examining such relationships recent studies have not dealt with the moderating role of information technology maturity decreasing the poor performance of state owned enterprises.

5.5 Recommendation for Future Research Directions

This study has some limitations in terms of theoretical or conceptual issues and also in the research design adopted. The study only addressed certain aspects of corporate governance and was restricted to the state owned enterprises in Kenya. The first limitation is that the cross sectional nature of the study, though efficient, limits the study's documentation of the causality between observations. Secondly, it is possible that the performance of the state owned enterprises may have been affected significantly by government regulations rather than the board attributes.

The study did not exclude any organizations on the basis of level of regulation. Thirdly, the measure of performance used included financial performance measures or accounting measures that are historical in nature and as such have a lag on the actual actions that affect them. This is despite the fact that such measures have been applied in prior studies on governance.

Future research should seek to address these limitations. Firstly, future studies should expand the governance attributes considered and in particular the role of external governance mechanisms such as effect of regulations and market control on performance of state owned enterprises. Further, the role of top management team as opposed to just the board should be considered. In terms of demographics, future considerations should include antecedents of board decision such as functional area knowledge, experience, dynamics and even international exposure.

Additionally, future research should adopt longitudinal methodology in gathering data on the board attributes and performance of the state owned enterprises so as to be better able to determine the causal relationships amongst these variables. Considering the current push for reforming the state owned enterprises, such an approach will contribute significantly in judging the success of the reforms pursued. Segregating the state owned enterprises by industry sectors in the analysis and making comparisons with private firms operating in the same sectors would also enhance evidence on the isolated effects of the board attributes on performance of state owned enterprises, especially the commercial ones.

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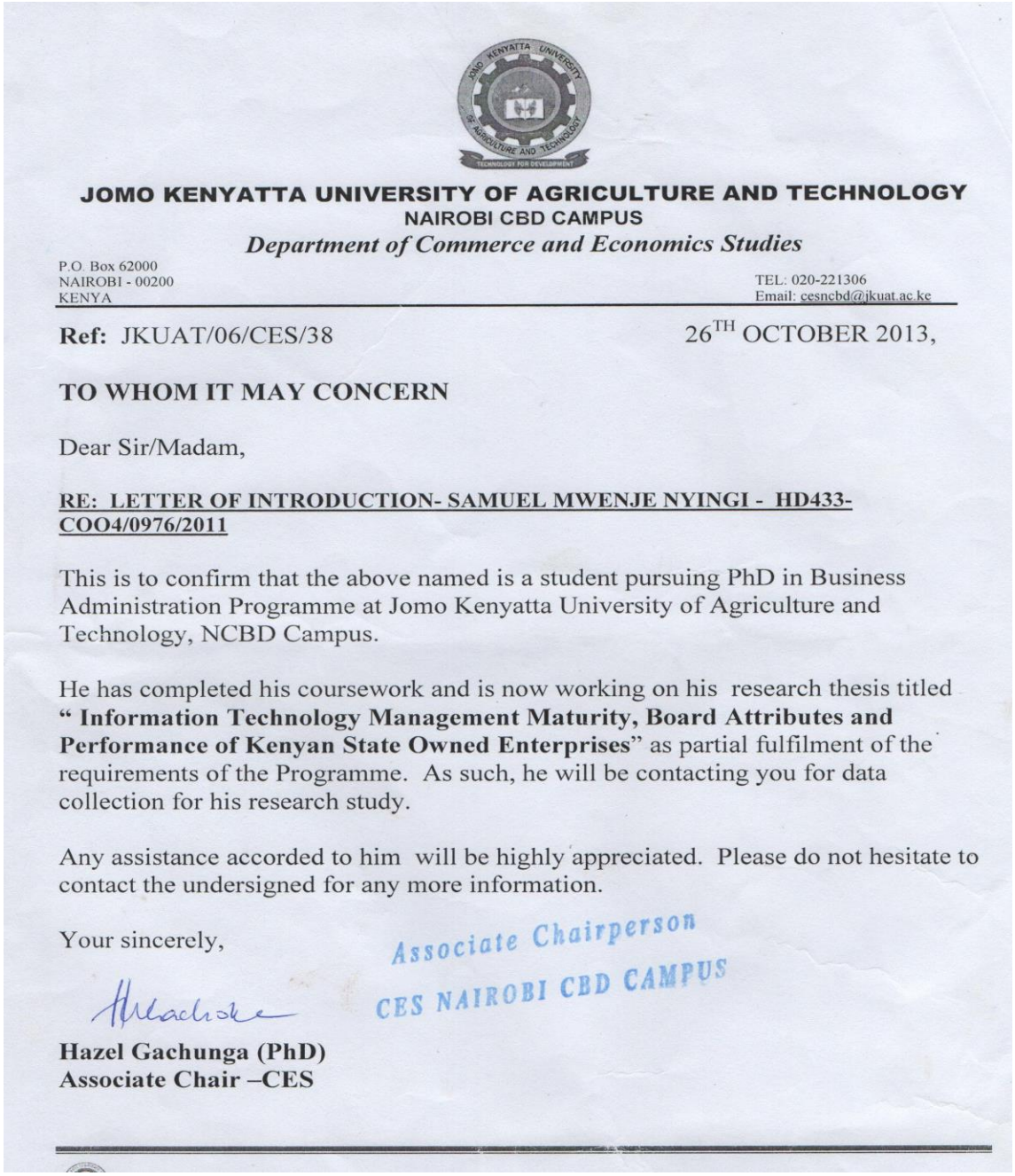
APPENDICES

Appendix I: Letter of Introduction



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26TH OCTOBER 2013,

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: LETTER OF INTRODUCTION- SAMUEL MWENJE NYINGI - HD433-COO4/0976/2011

This is to confirm that the above named is a student pursuing PhD in Business Administration Programme at Jomo Kenyatta University of Agriculture and Technology, NCBD Campus.

He has completed his coursework and is now working on his research thesis titled **" Information Technology Management Maturity, Board Attributes and Performance of Kenyan State Owned Enterprises"** as partial fulfilment of the requirements of the Programme. As such, he will be contacting you for data collection for his research study.

Any assistance accorded to him will be highly appreciated. Please do not hesitate to contact the undersigned for any more information.

Your sincerely,

Associate Chairperson
CES NAIROBI CBD CAMPUS

Hazel Gachunga (PhD)
Associate Chair –CES

Appendix II: List of State Corporations in Kenya

Public Universities

1 University of Nairobi
2 Kenyatta University
3 Egerton University
4 Jomo Kenyatta University of Technology
5 Maseno University
6 Masinde Muliro University
7 Moi University

Training and Research Corporations

8 Coffee Research Foundation
9 Kenya Agricultural Research Institute
10 Kenya Sugar Research Foundation
11 Tea Research Foundation
12 Kenya Marine Fisheries Research Institute
13 Kenya Institute of Administration
14 National Museums of Kenya
15 Kenya Institute of Public Policy Research and Analysis
16 Catering Training and Tourism Development Levy Trustees
17 Kenya Industrial Property Institute
18 Kenya Industrial Research and Development Institute

Service Corporations

19 Agricultural Development Corporation
20 Higher Education Loans Board
21 Kenya National Library Services
22 Kenya National Trading Corporation
23 National Council for Science and Technology
24 Teachers Service Commission
25 Kenya Accountants and Secretaries National Examinations Board
26 National Aids Control Council
27 National Campaign Against Drug Abuse Advisory

28 Kenya Defence Forces
29 National Commission for Gender and Development
30 National Council for Disability
31 Kenya National Bureau of Statistics
32 Kenya Tourist Board
33 Kenya Wildlife Services
34 Coast Water Services Board
35 Kenya Water Institute
36 Lake Victoria North Water Services Board
37 Rift Valley Water Services Board
38 Northern Water Services Board
39 Nairobi Water Services Board
40 Water Resources Management Authority
41 Water Services Trust Fund
42 National Sports Stadia Management Authority
43 Poverty Eradication Commission
44 Youth Enterprise Development Fund
45 Privatisation Commission of Kenya
46 Kenya ICT Board
47 Bomas of Kenya
48 Kenya National Highways Authority
49 Tanathi Water Services Board
50 Kenyatta National Hospital
51 Kenya Widlife Services
52 Geothermal Development Corporation
53 Rural Electrification Authority
54 National Coordianting Agency for Population and Development
55 Constituency Development Fund

Tertiary Education and Training Corporations

56 Cooperative College of Kenya
57 Moi Teaching and Referral Hospital
58 Kenya Medical Training College

59 Kenya National Examinations Council

60 Kenya Education Staff Institute

61 Kenya Utalii College

Regional Development Authorities

62 Ewaso Ngiro North Development Authority

63 Ewaso Ngiro South Development Authority

64 Kerio Valley Development Authority

65 Lake Basin Development Authority

66 Tana and Athi Rivers Development Authority

67 Horticultural Crops Development Authority

Regulatory

68 Capital Markets Authority

69 Coffee Board of Kenya

70 Commision of Higher Education

71 Council for Legal Education

72 Electicity Regulatory Board

73 Export Processing Zones Authority

74 Exports Promotion Council

75 Horticultural Crops Development Authority

76 Investments Promotion Centre

77 Kenya Civil Aviations Authority

78 Kenya Bureau of Standards

79 Kenya Dairy Board

80 Kenya Industrial Property Institute

81 Kenya Plant Health Inspectorate Services

82 Kenya Sisal Board

83 Kenya Sugar Board

84 Kenya Maritime Authority

85 National Environmental Management Authority

86 National Irrigation Board

87 NGO Coordination Bureau

88 Retirements Benefits Authority

89 Tea Board of Kenya

90 Water Services Regulatory Board

Commercial /Manufacturing

91 Agro Chemicals and Food Company

92 Chemelil Sugar Company

93 East African Portland Cement Company

94 Gilgil Telecommunication Industries

95 Jomo Kenyatta Foundation

96 Kenya Airports Authority

97 Kenya Broadcasting Corporation

98 Kenya Electricity Generating Company

99 Kenya Literature Bureau

100 Kenya Medical Supplies Agency

101 Kenya National Shipping Line

102 Kenya Ordinance Factories Corporation

103 Kenya Pipeline Company

104 Kenya Ports Authority

105 Kenya Power and Lighting Company

106 Kenya Railways Corporation

107 Kenya Safari Lodges and Hotels

108 Kenya Seed Company Limited

109 Kenya Wines Agencies

110 Kenyatta International Conference Centre

111 National Cereals and Produce Board

112 National Housing Corporation

113 National Oil Corporation of Kenya

114 National Water Conservation and Pipeline Corporation

115 Numerical Machines Complex

116 Nzoia Sugar Company

117 Postal Corporation of Kenya

118 Pyrethrum Board of Kenya

119 South Nyanza Sugar Company

120 School Equipment Production Unit

121 Safaricom Ltd

122 Telkom Kenya Limited

123 University of Nairobi Enterprises and Services Limited

Financial

124 Agricultural Finance Corporation

125 Consolidated Bank

126 Deposit Protection Fund Board

127 Development Bank of Kenya

128 Industrial and Commercial Development Corporation

129 Industrial Development Bank

130 Kenya Industrial Estates

131 Kenya National Assurance Co(2001)

132 Kenya National Trading Corporation

133 Kenya Post Office Savings Bank

134 Kenya Re-Insurance Corporation

135 Kenya Revenue Authority

136 Kenya Roads Board

137 Kenya Tourist Development Corporation

138 National Bank of Kenya

139 National Hospital Insurance Fund

140 National Social Security Fund

141 National Cereals and Produce Board

142 Nyayo Tea Zones Development Corporation

143 Kenya Petroleum Refinery

144 Kenya Electricity Transmission Company

145 Kenya Wines Agency

Source: State Corporations Advisory Committee (SCAC, 2012)

Appendix III: Research Questionnaire

All the information provided in this questionnaire will remain absolutely confidential and would be seen only by the academic researchers involved in this study

We are collecting information from state corporations in Kenya on a range of board of director's attributes, as well as on selected organization characteristics. Your contribution through completing this questionnaire is essential for the success of this doctoral research. We estimate that you will take approximately 15 minutes to complete. This questionnaire contains questions requiring you to select from a given list or choices a response that reflects your perception of the issues as they are. The is no "right" or "wrong" answer to any of the questions and it is your first impression and response that we are looking for.

SECTION A: ORGANISATION BACKGROUND (Questions 1-2)

In this section, please provide us with background information regarding your organization.

Q1: What year was your organization was established?

Q2: In what category of state enterprises is your organization (Tick only one)

☐ ☐

Financial ……commercial and manufacturing

Regulatory ☐ Regional development authorities and services ☐

Public universities and tertiary education and training ☐

Other (*please specify*)……..

SECTION B: BOARD STRUCTURE

Please provide us with some information regarding your organization's board of director's structure

Q1: What is the total number of current board members? ☐

Q2: What is the number of executive board members including the CEO? ☐

Q3: How many of the outside /external board members can be characterized as independent? ☐

Q4: How many of board members are members of boards of other state enterprises? ☐

SECTION C: DEMOGRAPHIC CHARACTERISTICS OF THE BOARD

Kindly provide us with some information regarding your board members' personal demographic characteristics.

Q1: Please, indicate the number of directors in each age bracket ……

Age	Number of board members
Below 30 years	
30-40 years 3:	
40-50 years	
50-60 years	
60-70 years	
Over 70 years	

Q2: Please indicate the number of women who serve as board of directors ☐

Q3: Please, indicate how many board members have the following as the highest educational qualification.

High-school graduate ☐

Bachelor's Degree ☐

Postgraduate Degree (Masters) ☐

PhD (Doctorate) ☐

Q4: Please, indicate the number of board members with the following specializations at the tertiary level of education.

	Number of board members
Engineering	
Sciences(Physics, Chemistry)	
Business Administration	
Accounting	
Finance	
Human Resources	
Social sciences	
Operations	
Marketing	
Legal	
Health Sciences	
Other	

Q5: Please, specify the number of years of the directors in your board.

Less than 1 year ☐

2-3 years ☐

Above 3 years ☐

Q6: How many of board members have public service background ☐

SECTION D: THE BOARD ROLE (Question 1-20)

In this section, we seek information of the involvement of your Boards of Directors in your Corporation's overall strategy

	Statement	Strongly disagree		Neutral	Agree	Strongly
Q1	The board of directors is involved in the formation of strategic decisions					
Q2	The board usually ratifies strategic proposals which are formed solely by the top management					
Q3	The board usually asks probing questions which lead to revisions of strategic proposals formed by the top management					
Q4	The board usually helps the top management to form strategic decisions within and between					

	board meetings					
Q5	The board usually forms the strategic decisions separately from the top management					
Q6	The board is not usually involved with the monitoring of the progress of strategic decisions					
Q7	The board usually accepts the evaluation of strategic decisions by the top management without asking probing questions					
Q8	The board usually accepts the evaluation of strategic decisions by top management after asking probing questions					
Q9	The board usually determines the timing and criteria of the evaluation, but that information is supplied by the top management and it is rarely challenged by the board					
Q10	The board usually determines the timing and criteria of the evaluation and often requests additional information after receiving the progress report from the top management					
Q11	The board usually collects its own information about the progress of the strategic decision, in addition to the top management reports					
Q12	The selection of the board members has resulted in the best mix of board members					
Q13	The selection process for CEO has resulted in the identification of the most qualified candidate					
Q14	Our corporation is truly living its mission					
Q15	The corporation's assets, resources and investments are well stewarded and safeguarded					

Q16	The mandate of our board is clear					
Q17	The board committees of our corporation are utilized in enhancing board oversight					
Q18	The board of directors spearheads a culture of learning and innovation in the corporation					
Q19	The board receives information timely					
Q20	The board members undertake annual performance evaluation/assessment					

SECTION E: BOARD OPERATING ENVIRONMENT (Question 1-13)

In this section, we seek information on the environment in which your board members operate.

	Statement	Strongly disagree	disagree	Neutral	Agree	Strongly Agree
Q1	In the board meetings the board members respect each other's views					
Q2	The chairman allows members equal opportunities to contribute to discussions					
Q3	Most meetings are held in a timely manner					
Q4	New members are taken through induction on procedures and rules of the board					
Q5	The board members keep time in both full board and committee meetings					
Q6	The chairman dominates the meetings					
Q7	The board members receive the annual calendar of events for the board					

Q8	The board members receive monthly briefings from management regarding matters that are important to the company performance					
Q9	The organization has a clear corporate governance structure					
Q10	The board members access the company database when they want					
Q11	The board members have not been employed by the organization within the last five years					
Q12	Board members declare conflict of interest where there is a possibility of such occurrence					
Q13	Non-executive directors have a fixed term of office in the organization					

SECTION F: INFORMATION TECHNOLOGY MATURITY (Question 1-20)

Please provide us with some information regarding your organizations Information Technology Maturity

	Statement	Strongly disagree		Neutral	Agree	Strongly Agree
Q1	Our IT projects support the financial and operational objectives and strategies of our organization					
Q 2	We continuously examine the innovative opportunities IT can provide for competitive advantage.					
Q3	We are adequately informed on the current use					

	of IT by competitive forces (including customers, suppliers, and competitors) in our industry.					
Q4	We are adequately informed on the potential use of IT by competitive forces (including consumers, suppliers, and competitors) in our industry					
Q5	We have an adequate picture of the coverage and quality of our IT systems.					
Q6	We are content with how our IT project priorities are set.					
Q7	In our organization, the responsibility and authority for IT direction and development are clear.					
Q8	In our organization, the responsibility and authority for IT operations are clear.					
Q9	We are confident that IT project proposals are properly appraised.					
Q10	We constantly monitor the performance of IT functions.					
Q11	Our IT function is clear about its goals and responsibilities					
Q12	Our IT function is clear about its performance criteria.					
Q13	In our organization, user ideas are given due attention in IT planning and implementation.					
Q14	Our IT specialist understands our mission and the organization.					
Q15	The structure of our IT function fits our					

	organization.					
Q16	The IT specialist-user relations in our firm are constructive					
Q17	In my organization the board of directors perceives that future exploitation of IT is of strategic importance.					
Q18	There is a top-down planning process for linking information systems strategy to organization needs.					
Q19	We have resource(including people) for IT development within the organization					
Q20	We have mechanisms for introduction of, or experimentation with, new technologies within the organization					

Thank You

Appendix III: Secondary Data Collection Schedule

	Data Collected	**Period**
1	Board Attributes from Corporations Secretaries for sampled organizations	January to June 2016
2	Performance data from State Corporations Advisory and the Performance Management Division, Executive Office of the President	January to December 2016

Data regarding state corporation's performance during the last five years collected prior annual reports.

Performance indicators	**2011**	**2012**	**2013**	**2014**	**2015**
Sales/revenue					
Net Profit Before interest and tax					
Corporate taxes					
Total Assets					

Corporation Customer Satisfaction Index according to the last survey report

Performance indicators	**2011**	**2012**	**2013**	**2014**	**2015**
Customer Satisfaction Index					

Appendix IV: Pre-test Instrument

Dear Participant,

I am undertaking PhD research and am currently at the stage of pilot-testing the research Instrument intended for use in data collection.

I would greatly appreciate your time in completing the attached questionnaire and the Pre-test questionnaire. This pre-test questionnaire will be used as formal feedback. If preferred, please write your comments on the survey instrument directly. Anonymity and confidentiality are assured. I would also welcome any informal feedback and would be happy to discuss this with you at a convenient time.

Thank you in anticipation of your response.

Yours sincerely,

Pre-test Questionnaire

The information provided in this document will act as formal feedback to modify questions to enhance the reliability and validity of responses.

1. Completion of research instrument

Please record the time taken to complete the survey. _____ minutes

As indicated, please circle your response to the following questions.

2. Instructions

Are the instructions?

- Clearly written YES / NO
- Easily understood YES / NO

3. Question content and form

Are the questions?

- Clearly written YES / NO
- Easily understood YES / NO
- Too wordy YES / NO
- Ambiguous YES / NO

4. Comments. Please specify and comment on any question that you found difficult with regards to the criteria above (instructions, content and form).

_____

_____

_____

_____

_____

_____

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5. Research instrument

Is the questionnaire?

- Easy to complete YES / NO
- Too long YES / NO
- Too cluttered YES / NO

Overall comments:

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6. Procedures and Processes

Do you understand the purpose of the research? YES / NO

Does the research instrument reflect the purpose of the research? YES / NO

Comments

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7. Please identify any significant questions that you felt could have been included in the Questionnaire.

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Thanks for your feedback.

Appendix: V: Board Operating Environment Descriptive Analysis

	SDA	DA	Neutral	A	SA
In the board meetings the board members respect each other's views	0%	1.8%	15.2%	64.5%	18.5%
The chairman allows members equal opportunities to contribute to discussions	0%	0%	9.8%	62.0%	28.3%
Most meetings are held in a timely manner	0%	1.8%	13.0%	72.2%	13.0%
New members are taken through induction on procedures and rules of the board	0%	3.3%	22.1%	48.2%	26.4%
The board members keep time in both full board and committee meetings	5.8%	0%	8.7%	65.6%	19.9%
The chairman dominates the meetings	3.6%	4.3%	13.4%	67.0%	11.6%
The board members receive the annual calendar of events for the board	0%	3.3%	12.7%	44.6%	39.5%
The board members receive monthly briefings from management regarding matters that are important to the company performance	0%	5.1%	15.6%	40.2%	39.1%
The organization has a clear corporate governance structure	0%	5.4%	8.3%	64.6%	21.7%
The board members access the company database when they want	0%	3.3%	3.6%	65.9%	27.2%
The board members have not been employed by the organization within the last five years	0%	0%	5.1%	80.4%	14.5%
Board members declare conflict of interest where there is a possibility of such occurrence	3.6%	4.3%	6.9%	72.8%	12.3%
Non-executive directors have a fixed term of office in the organization	0%	3.3%	7.6%	56.9%	32.2%

Appendix VI: Board of Directors Role Descriptive Characteristics

	SD	D	N	A	SA
The board of directors is involved in the formation of strategic decisions	5.1%	21.4%	30.8%	33.0%	9.8%
The board usually ratifies strategic proposals which are formed solely by the top management	4.7%	10.1%	44.2%	26.2%	14.5%
The board usually asks probing questions which lead to revisions of strategic proposals formed by the top management	0%	5.1%	3.3%	72.8%	18.8%
The board usually helps the top management to form strategic decisions within and between board meetings	0%	8.3%	22%	55.8%	13.8%
The board usually forms the strategic decisions separately from the top management	0%	11.6%	9.4%	53.3%	25.7%
The board is not usually involved with the monitoring of the progress of strategic decisions	0%	5.4%	19.2%	46.7%	28.6%
The board usually accepts the evaluation of strategic decisions by the top management without asking probing questions	0%	0%	15.6%	46.4%	38.0%
The board usually accepts the evaluation of strategic decisions by the top management after asking probing questions	15.2%	6.9%	5.8%	66.7%	5.4%
The board usually determines the timing and criteria of the evaluation but that information is supplied by the top management and it is rarely challenged by the board	0%	1.8%	19.2%	42.8%	36.2%
The board usually determines the timing and criteria of the evaluation and often requests additional information after receiving the progress report from the top management	3.6%	5.8%	5.4%	64.5%	20.7%
The board usually collects its own information about the progress of the strategic decision in addition to the top management reports	0%	9.4%	19.6%	58.0%	13.0%
The selection of the board members has resulted in the best mix of board members	0%	5.4%	9.1%	64.1%	21.4%
The selection process for CEO has resulted in the best mix of board members	0%	10.1%	6.9%	65.9%	17.0%
Our corporation is truly living its mission	0%	0%	18.5%	27.5%	54.0%

The corporations assets resources and investments are well stewarded and safeguarded	1.8%	1.1%	19.2%	67.0%	10.9%
The mandate of our board is clear	7.6%	4.0%	5.4%	62.0%	21.0%
The board committees of our corporation are utilized in enhancing board oversight	0%	14.5%	9.4%	52.5%	23.6%
The board of directors spearheads a culture of learning and innovation in the corporation	2.5%	10.5%	12.7%	56.9%	17.4%
The board receives information timely	0%	0%	31.5%	39.9%	28.6%
The board members undertake annual performance evaluating evaluation\Assessment	0%	0%	21.7%	56.5%	21.7%

Appendix VII: Information Technology Maturity Descriptive Characteristics

	SD	D	N	A	SA
Our IT projects support the financial and operational objectives and strategies of our organization	0%	7.2%	7.6%	57.6%	27.5%
We continuously examine the innovative opportunities IT can provide for competitive advantage	0%	6.9%	9.4%	78.6%	5.1%
We are adequately informed on the current use of IT by competitive forces (including customers, suppliers, and competitors) in our industry.	0%	14.5%	18.1%	40.6%	26.8%
We are adequately informed on the potential use of IT by competitive forces (including consumers, suppliers, and competitors) in our industry	5.1%	13.0%	15.9%	39.1%	26.8%
We have an adequate picture of the coverage and quality of our IT systems	0%	7.6%	9.1%	64.5%	18.8%
We are content with how our IT project priorities are set	3.6%	5.4%	15.9%	37.7%	37.3%
In our organization, the responsibility and authority for IT direction and development are clear	0%	7.2%	24.6%	40.9%	27.2%
In our organization the responsibility and authority for IT operations are clear	0%	3.6%	15.2%	64.1%	17.0%
We are confident that IT project proposals are properly appraised	0%	10.9%	16.3%	65.9%	6.9%
We constantly monitor the performance of IT functions	8.7%	5.8%	25.0%	35.5%	25.0%
Our IT functions is clear about its goals and responsibilities	0%	0%	30.4%	62.0%	7.6%
Our IT functions is clear about its performance criteria	0%	14.9%	4.7%	45.3%	35.1%
In our organization, user ideas are given due attention in IT planning and implementation	0%	0.7%	17.4%	73.9%	8.0%
Our IT specialist understands our mission and the organization	0%	1.4%	15.9%	26.1%	56.5%
The structure of our IT function fits our organization	0%	10.5%	10.1%	52.2%	27.2%
The IT specialist-user relations in our firm are constructive	0%	13.0%	19.6%	55.4%	12.0%
In my organization the board of directors perceives that future exploration of IT is of strategic importance	8.7%	2.9%	6.9%	56.5%	25.0%

There is a top-down planning process for linking information systems strategy to organization needs.	0%	8.3%	16.3%	16.3%	59.1%
We have resource (including people) for IT development within the organization	0%	13.4%	10.9%	50.6%	25.7%
We have mechanisms for introduction of, or experimentation with, new technologies within the organization	0%	1.8%	6.5%	65.6%	26.1%