EFFECT OF BOARD CHARACTERISTICS ON FINANCIAL PERFORMANCE OF COMMERCIAL STATE CORPORATIONS IN KENYA

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DECLARATION

I declare that the research project presented is original and has not been submitted elsewhere for award in any other university.

Signature..... Date.....November 22,2022.....

Quin Mwendwa Mwongera **Reg No**: **D63/29173/2019**

The project is being undertaken by the student under my supervision as university supervisor.

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DEDICATION

The work is dedicated to my family who supported me throughout the process either financially and also with their good advice and wisdom, gave me the spirit of pushing through till I completed my studies.

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LIST OF ABBREVIATIONS

CEO: Chief Executive Officer

ROA: Return on Assets

SPSS: Statistical Package for the Social Sciences

ABSTRACT

The implementation of financial performance standards within the commercial state corporations was aimed at aligning it to the country's development blueprint, however, this has not been fully realized (Nyamita, *et al.,* 2014). The importance of board of directors in an organization management cannot be underestimated, board of directors is an essential element of corporate governance. Cheung, et al., (2011) remarked the need and effective characteristic of the role played by board of directors in running management affairs of the organization. The study was anchored by agency theory. The study was supported by stakeholder theory, Stewardship theory and Resource dependence theory. The study adopted correlational design of study. The target population for the study was 33 commercial state owned corporations in Kenya over the period 2016-2021. The study employed census because the target population was small. Secondary data was collected from the annual financial reports of the state corporations audited by the office of auditor general. The data was analyzed using Stata software where descriptive and inferential statistics were generated. The descriptive tests included the mean, minimum, maximum and standard deviation. Also, panel regression was employed to determine the effect of board characteristic on the financial performance of commercial state-owned corporations. The descriptive finding established that Kenya generating Electricity Company made the highest profit within the period 2016 to 2021 as shown by the return on asset of 5.1745. The study revealed that most of the state corporation made loss within this period. Kenya Ports Authority had the largest board size constituted of 16 directors. The study established that most commercial state corporations had an average of 10 board members. The study noted that most of the commercial state corporations recorded a board independence above average. The study established that Kenyatta international convention center had more women in the board. Kenya Railways Corporation recorded the highest number of board meetings occasioned by the continuous loss making. Agro-Chemicals and Food Company had accumulated longest board tenure among commercial state owned corporations. The panel regression established that board size has a negative and significant relationship with financial performance of state corporations (β =-0. 1948413, $p=0.000<0.05$). The study finding established that there exist a positive and significant relationship between board independence and financial performance of commercial state corporation (β =1.121613, $p=0.044<0.05$). The study also found out that board diversity has a positive and insignificant effect on the financial performance of commercial State Corporation (β =1.054611, $p=0.121>0.05$). It was also revealed that board meetings have a positive and insignificant effect on financial performance of commercial state corporations (β =0.0147901, $p=0.341>0.05$). Additionally, the study revealed that firm size has a positive and significant effect on the financial performance of state corporation (β =0.3051079, $p=0.006<0.05$). The study concluded that large board size negatively affects financial performance of a state corporation. It also concludes that board independence has a positive influence on financial performance of commercial State Corporation. Board diversity has a positive and insignificant effect on the financial performance of commercial State Corporation. Further, the study conclude that board meetings have a positive and insignificant effect on financial performance of commercial state corporations. Additionally, it can be concluded that board tenure has a negative and insignificant effect on financial performance of commercial state corporations. Finally, the study conclude that firm size has a positive and significant effect on the financial performance of State Corporation. The study recommends the establishment of an optimal board size that is manageable. It is further recommending the strengthening of independence within boards by increasing the number of non-executive board members to a majority in all state corporations. Engineering of growth of firm size so that they derive economies of scale associated with large firms. On the areas of further research, the study recommends further investigation on the relationship between board tenure and financial performance. The study experienced methodological limitations occasioned by firm closure and lack of substantial boards.

CHAPTER ONE

INTRODUCTION

1.1 Background

The implementation of financial performance indicators in the commercial state owned corporations was geared toward the country's development blueprint, however, this has not been fully realized (Nyamita, *et al.,* 2014). Therefore, there is need to have a proper and enforceable strategic plan that is founded on good corporate governance and management plans. These strategic plans would align the state corporation plans with the national development agenda that is linked with the country's long term development plan. The significance of management board in an institution is critical, management board is vital element of corporate governance (Fama and Jensen, 1983). Cheung, et al., (2011) remarked the necessity and effective features of the function played by board of directors in running management affairs of the organization. Moreover, it was argued that components of corporate governance such as size of the board, level of independence, composition of gender and meetings held by the managing board have an influence on the financial performance of an organization (Fama & Jensen, 1983; Coles, etal., 2001; Weir et al., 2002). According to Finegold et al. (2007) there are several aspects of board characteristic that include Chief executive officer Duality, number of the members in the board, level of independence, composition of the gender in the board, board compensation, board meeting, functioning committee and many other.

The study was anchored by agency theory. The agency theory is premised on a person acting on behalf of another person. The agent is delegated some management responsibilities by principal and expected to act on the interest of the principal. The management of state parastatals act on behalf of the taxpayers in executing the mandate of those organizations. Other theories that bind

the research topic include stakeholder theory, Stewardship theory and Resource dependence theory. Stakeholder theory was postulated by Freeman (1984) and was advocated to address problem of value creation and trade, managerial mindset and business ethics. The theory emphasized on the effective relationship between various players within a given business for success to be realized. Stewardship theory acknowledged the importance allowing managers to operate independently so that business can create value that is desirable.

Globally, commercial state owned entities contribute 20% and 5% of aggregate investment and aggregate employment and a total amounting to 40% in other areas around the globe (Dunning & Lundan, 2008). There exist some good number of state corporations who have produced desirable results and ultimately benefited their economies. Despite the important socio-economic role, they play, many of the state commercial state corporations have experienced some low productivity, huge losses, poor service delivery, non-accountable management and financial profitability to the extend some become financial distressed as result of huge losses accrued (Ogoro & Simuyu, 2015). The inefficiencies in state corporations are attributed to lack of best performance and management practices (Tonui & Olweny, 2018).

1.1.1 Board Characteristic

Board characteristic can be viewed as a general term that has no used widely definition. Carcello et al., (2002) uses the percentage of independence, the expertise and the diligence as the characteristic of board. According Vo and Phan, (2013) argued that number of the people in the board, level of independence, role of the CEO in the board and managment, board composition are the critical characteristic of board. One of the board characteristic that has been subject of debate is amount of members in a board. Larger boards bring on board more people with different knowledge and information that can offer solutions to various challenges management face, this

also come with cost implication challenges (Guest, 2009). Large number of people in boards makes it difficult to detect what every member has done and this may encourage free riders.

The characteristic of board is very critical in corporate governance mostly in regards to board features such as its composition in terms of total numbers and gender representation, structure of committee, and occurrence of meetings, overall structure and procedures and nature of existing relationships. Jan and Sangmi (2016) noted that board is essential in oversighting management functions, rendering advice and also offering support where it is needed most, it also ensures the aggregate operations of the firm are run effectively and efficiently. Evaluation of board characteristic is informed by the fact that fundamental role they ordinarily play (Sparkes & Cowton 2004). Effectiveness of corporate governance within boards has been a matter of concern and has resulted to development of internal rules to bring sanity and better execution duties and responsibilities (Limpaphayom & Connelly, 2006). A strong board has a vital role in enhancing organizational performance which has a greater effect on the aggregate economic performance, it provides a linkage between organization and business working environment (Hillman et al., 2000).

Based on this study size of the board, level of independence, composition of different genders and frequency of meetings undertaken by the board are used to measure board characteristics (Kanakriyah, 2021). According to Kalsie & Shrivastav (2016) and Shatnawi, et al., (2019) remarked that size of the board is indicated by number of people constituting the management board which ordinarily ranges from between 6-8 persons. Younas, et al., (2019) and Niu, (2016) argued that level of independence in management board is determined by computing ratio of persons not actively involved in running the organization day to day to total number persons sitting in the board and in most cases bigger ratio is preferred or considered optimal. Board diversity has been considered a game changer in managing affairs of the board through sharing different

opinions which strengthen decisions. According to constitution of Kenya (2010) and Adusei, et al. (2017) at least a third gender ratio should be maintained in constituting any organization ranging from the top echelons of management to lowest level of occupation within an organization and boards are not exceptional. According Al-Daoud et al. (2016) and Al-Najjar (2010) board meetings are appropriately determined by the average number of annual meetings conducted.

1.1.2 Financial Performance

Financial performance is a combination of two terms financial and performance. Performance originated from the word performed essentially can be interpreted as to do it, to undertake or to render. There is consensus among financial economists that organizational performance is a pillar in development of the state and a key determinant in management of organizational activities (Melwani, 2019). Fatihudin and Mochklas (2019) observed that financial performance is the achievement of the financial targets for a certain period of time depicted in the financial statements and other appropriate records. According to Iai (2016) the overall condition of financial status of a firm that is characterized by the use and collection of funds is an indicator of financial performance. Kusumawardani, et al., (2021) noted that summary of the status report on financial indicators in a given duration that signify how a firm has successfully generated revenues and profits. Assessment of how firms utilize assets in its initial form to generate revenues remain subjective in financial performance evaluation.

Financial performance outlines the feasibility, solidity and productivity of a business (Bhunia, et al., 2011). It gives the financial characteristic and operating costs from accounting and financial statements. Financial performance asses the management efficiency capabilities as shown in financial indicators. Reports concerning financial indicators bring out the financial soundness of an organization normally signified by profitability and liquidity and some other financial measures

that demonstrate business operate in conformation to both fiscal and legal framework. Financial performance analyzes outcome of firm strategies, routine, effectiveness and success expressed in terms that are monetary related. It also lays out how a firm utilizes resources effectively to derive profitability. Evaluation of financial performance is a subjective measure of enquiring firms' utilization of assets in its primary mode to generate revenues. Markley and Davis (2007) noted that financial performance defines the competitiveness, outlines the potential of a commercial entity interest of the body running the organization and trustworthiness of contractors now and going forward.

Financial performance can be captured by establishing how optimally stakeholders in the end of a given period as compared to the commencement, which is measurable through proportions originating from financial statements such profit and loss account books, balance sheet or using data extracted from security markets (Welc, 2022). There are various indicators of financial performance which include profits accrued after tax deduction, ROA, ROE, earning for every unit of a share or other available valuation within the market which universally conventional (Yenesew, 2014). Greater ROE depict a situation where a firm is performing optimally. The study adopted the use of ROA to measure financial performance, ROA measures efficiency of how a firm manages their investment assets and turn around to generate sustainable profits (Yensew, 2014; Bhunia, Mukhuti &amp, 2014).

1.1.3 Board Characteristic and Financial Performance

Interplay between features of the board and financial performance remains debatable among scholars. Noja, et al., (2021) observed that features of board has different implication on organizational financial parameters that heavily rely on variables associations, for instance size of the board had significant effect on firm's profitability that is linked with return on asset. According

to Di Biase and Onorato (2021) noted that more level of independence within management board and structure had positive and significant effect on the financial performance of insurance industry. Oyedokun (2019) argued that board characteristic positively correlated with financial performance. Board gender had positive influence while boarding meetings negatively influenced the financial performance within financial institutions.

According to Assenga, et al., (2018 gender distribution within board of management has direct influence on financial indicators. However, the study established that size of organization management board had no relationship with financial performance. Okolie and Uwejeyan (2022) argued that firm size, firm independence and committee tasked with audit was critical to financial parameters of a commercial entity. Nonetheless, meetings undertaken by management board had little impact of financial parameters (Okolie & Uwejeyan, 2022). The study adopted stakeholder theory and agency theory, this theory of agency showed how agent and principal related in managing activities. Pasko, et al., (2016) remarked that multiple roles of CEO and size of the board are strongly correlated with financial parameters while level of independence remains inconsequential on financial parameters. Others scholars such as Slama, et al., (2019) observed that gender distribution within the management board influenced financial parameters. It was further observed by Odhiambo and Mwanzia (2021) that board diversity and board independence remained influential on the performance of financial indicators while size of the board had less influence on aggregate performance of financial indicators.

1.1.4 State Corporations in Kenya

Corruption hailing among the majority of commercial state entities in Kenya have called for further action to reverse this phenomenon that posed a great risk to financial performance of these organizations. Cangiano, et al., (2013) observed that state owned corporations have started to

employ financial experts to improve budgeting, change how financial indicators are reported, enhancing risk mitigation system, and proper guarding governance framework besides eradication of fraud. Salami and Oluseyi (2013) argued that financial system has been improved to spur economic growth across all sectors in China. Higgins and Hugue (2015) noted that strengthening of laws and regulations of fiscal system and governance through policies and regulations in United States. Ong'onge and Awino (215) remarked that public management of financial system has been undergoing reforms to allow accountability and prudent management of financial systems. Simiyu (2015) government introduced performance contracting in the course of enhancing efficiency and improvement of overall performance in the public sector.

State corporation boards are established under act of parliament 2010 cap 446. Boards of most State Corporation are independent chaired by non-executive chairperson and majority of the members are from outside management. Board meetings frequency for State Corporation are outlined in the act within a certain period of time including the minimum number of meetings to be conducted (State Corporations Advisory Committee, 2015). The boards are tasked with oversight of financial management of state corporations, overall policy direction and any other administrative that is deemed necessary.

1.2 Research Problem

Boards of state-owned enterprises have been tasked with critical responsibilities. One core function is to oversight the actions of management, sourcing and ensuring financing is effectively utilized, setting up standard of service to achieve quality; formulating strategies; enhancing social corporate responsibility; formulation guidelines on ethical practice, ideals, and conformity to regulations and legal framework. Oversighting of financial activities is a common role most of the boards of state

owned enterprise execute. Boards are tasked with monitoring of how financial controls functions optimally; tasked with making sure that resources are invested prudently, putting regulations on the usage of cash , services offered by financial institutions, and parameters used for contracting; and formulating policies that guide budgeting process. Suggestions have been put forward on how board should run an organization efficiently through enhancing board independence, increasing the number of board meetings especially scheduling abrupt ones during emergencies. Board are critical in most of the organization in formulating policies and strategic decision that has a significant progress of the organization.

The state corporation in the country are faced with several challenges ranging from low productivity, low profitability, lack of accountability and financial probity. There are state corporations that have had financial turmoil which include the Kenya Meat Commission, Kenya Cooperative Creameries, National Social Security Fund and more recently Kenya Airways almost collapsed because of huge losses recorded. The poor financial performance is attributed to perceived inefficiency and ineffectiveness, questionable management practices that has resulted to mismanagement of resources. All these are narrowed down to the individual appointed to sit in the boards, many of the managers appointed are as result of political patronage and political affiliation which in any case defeats the need of meritocracy in appointments. Appointment of board members to many state corporation lack diversity for instance appointees are from singular ethnic group. Lack of political good will to prosecute mismanagement who are involved in mismanagement of resources worsen the financial performance of these state institutions.

Slama, et al., (2019) investigated board gender and financial performance in France. In 2010 French government set a regulation that restricted each board should employ at least 40% of their board members constitute women, following this regulation it can be deduced that t financial

parameters of institutions with diversified board have been improving unlike those with less diversified boards despite the financial implication of hiring more women to join boards. Ng, et al., (2016) studied the linkage between board characteristic and firm profitability in Malaysia. It was deduced that size of the board and tenure of the board had direct effect on ROA and ROE, however, size of the board was not consequential to firm profitability. According to Pasko, et al., (2016) studied the association between board characteristic and firm performance among the manufacturing firms listed in China. It was established multiple roles of CEO and size of the board are correlated with profitability of an institution that is commercial oriented. Board independence has no significant effect on financial performance in China. Slama, et al., (2019) only focused on gender diversity on boards omitting board characteristics resulting to knowledge gap. Other scholars had different views for instance Ng, et al., (2016) concluded that size of the board was insignificant on profitability, however, Pasko, et al., (2016) found out that board size has a positive and significant effect on financial performance resulting to contradicting finding and inconclusive finding.

Odhiambo and Mwanzia (2021) studied characteristic of a board and profitability of firms in Kenya. The study deduced that diversity and independence within the management of boards had positive influence on profitability while size of the board was inconsequential on profitability of a firm. Ong'ore, et al., (2015) investigated composition of board and its profitability: Empirical analysis of listed companies in Kenya. It was revealed that gender diversity within the board had greater effect on the profitability, likewise level of independence within management boards least affected the profitability. Additionally, size of the board had inverse effect aggregate performance of financial instruments of a firm. Manyanga, et al., (2021) studied board characteristic effect on the performance of financial indicators in local banks within Kenya. It was established that

numbers in the board, frequency of meetings sanctioned by board, distribution of gender sitting in the board and board share ownership had a positive and significant influence on return on equity (ROE) across the industry; board size, board frequency of meetings and stakeholders within the board influenced ROE across all banks. Board gender diversity had a negative but significant influence on ROE. Additionally, size of the board, sittings of the board and ownerships of the company negatively affected ROE across the emerging banks. Odhiambo and Mwanzia (2021) noted that size of the board was inconsequential on profitability of a firm while Ong'ore, et al., (2015) argued that size of the board affected firm profitability immensely. Additionally, Manyanga, et al., (2021) remarked that size of the board had inversely relationship on financial parameters this deduced a self-contradictory and inconclusive finding. Therefore, this study seeks to answer the research question which is; what is the effect of board characteristic on financial performance of commercial State Corporation.

1.3 Research Objective

The broad objective was to examine the influence of board characteristic on the financial performance of commercial state corporations.

1.4 Value of the Study

This study adds value in proposing better practices on running boards of commercial state owned corporations that have been facing financial management challenges. The finding of this study will enrich the existing theories that are related with liberalization and commercialization of state owned entities. Finding of this study offered solution to the unending discussion on the inefficiency in financial system of commercial state corporations.

The study findings also validated theories of behavioral finance and board characteristic such as agency theory and stewardship theory among other theories about commercial and service

industry. The research has also consequences for both policy and practice. First, the study will be of help to investors intending to do business with government through offering insights that will guide them in making a rational decision. The finding of this study gave invaluable information to the management team within the state commercial entities which will be of help whenever there is market volatility affecting clients and the urge to construct optimal portfolios.

Scholars and other stakeholders in this field of business tasked with providing leadership shall get the recommendation of this study from the public repositories i.e. Universities and other public libraries.

Hopefully, scholars will enrich areas that have gaps recognized in this research. Additionally, it leads to the corpus in knowledge on behavioral finance. Finally, study identifies further research gaps which trigger knowledge generation by other scholars. The policy makers, on the other hand, thus find such recommendations quite useful in crafting well informed and evidence-based policy recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The section present theories anchoring this research. The chapter conceptualized the variables and how they are related. Empirical literature review was undertaken to contextualize how these variables are related and its significance. The study presented the conceptual framework which gave a brief summary on the study variables and how they are related. The section finalized by identifying the research gaps and summarizing the key literature from the study.

2.2 Theoretical framework

The study was anchored by Agency theory and supported by Stakeholder theory and Stewardship theory.

2.2.1 Agency theory

Jensen and Meckling (1976) postulated agency theory on how governance of a firm which is characterized by conflict of interests between firm managers and the ownership because each of the party is driven by different objective and interest. The theory is anchored on the idea that once a firm entity is established; it is expected that at first the owners will take management responsibilities. When the company grows, the owners are expected to delegate management responsibilities to the appointed members of management. The appointed team is expected to run the company guided by the interest of the owners and that result to agency relationship.

Brudney (1985) observed that the appointed management delegated responsibility to manage had excessive unchecked powers relating to their behavior and overall management. Roe (1991) argued that separation of management from the owners was more a political product in US around 1930s and was not really suitable to guide a firm because the appointed management may fail to advance

the interest of the owner in entirety. Van Essen (2011) pointed out that although agency theory has been dominating literature of corporate governance but has not sufficiently addressed how board should function and also behavior of the management.

Agency theory is applicable in this research because it is premised on the establishment of two entities appointed management and board. In this essence the board represent the interest of owners and management of commercial state-owned corporation represents the management appointed to oversee the daily operations of the firm in the interest of the firm owners. The management is premised to work on the desires of the firm owners in running daily activities of the firm.

2.2.2 Stewardship Theory

Donaldson (1991) advanced stewardship theory to support agency theory. The theory is premised on motivation an individual derives from performing a given assignment, individuals' desire for growth and is driven by work related performance hence stewardship theory argues that stewards are driven by desires to achieve the needs of the organization and firm owners. Given the lack of internal motivation among executives managing certain firms, it will be difficult for the executive to achieve the aspiration of the company. This theory holds the view that variation in performance arise as a result of if structural environments where firm managers influence the achievement of firm objectives. The stewards who are firm managers are perceived to work in the interest of the stakeholders.

This theory is considered new and there is a general view that no adequate empirical literature to interrogate and present the shortcomings comprehensively. Dutzi (2005) argued that overreliance on trust as advanced by the theory is dangerous and sometimes ought to guide corporate governance. Sundaramurthy and Lewis (2003) pointed out that the idea of having a strong collaboration between board and management may jeopardize the oversight role most boards have

been designed to do. In this regard most of the decision proposed by the management may go unchallenged. Failure to question management practices by a virtue of trust could result to continuous erroneous development.

The theory is applicable in this research as it posits a scenario were management are given space to make their own decisions as per the interest of the organization. This will promote independence of the boards in the essence that they are not micro managing the management and at the same time allowing management to have autonomy. It will also allow smooth running of activities because there will be less interferences from the board directives.

2.2.3 Stakeholder Theory

Freeman (1984) proposed stakeholder theory which states that a successful business should develop value for customers, employees, suppliers, employees, financiers, communities and other people who have interest on the business. Individuals, groups and organizations are easily percept to be involved processes that add value to the firm. Phillips (2003) remarked that stakeholders' management entails making sure that stakeholder needs are met and all stakeholders are involved in organization's affairs. The theory advocates the fair, honest and generous treatment of the stakeholders. Harrison (2010) noted that firm which manage stakeholders align firm financial and human resources to support the attainment of firm value. Stakeholders are associated with perception of good management and high financial performance.

One of the major shortcoming of stakeholder theory is the assumption that all outside interest should be determined exogenously irrespective of the views of the respectively parties and their management. The theory failed on how this can be achieved or attempted to be met. Argenti (1993) argued that any organization that tries to satisfy everybody risk being less competitive and hard to optimally manage. Handy (1991) also pocked holes the idea of all stakeholders having similar

interest which on contrary different stakeholders have different interests that yield to different decisions.

The theory is premised on involving all stakeholders in increasing the value of the firm. Boards require divergent opinions which can challenge the status quo in order to have optimal solutions to ever changing problems. Gender diversity in boards is adequate to address the question of inclusion and also bringing in different ideas which can increase performance of boards and also the aggregate the growth of the firm.

2.3 Determinants of Financial Performance of State Corporation

Review of the stewardship theory, agency theory and stakeholder theory presented the study on the possible characteristic of the board. After this is discussed empirical studies was conducted to further elaborate the board characteristics. In this research the most common board characteristics that have been discussed comprise board size, independence of board, gender diversity of the board, board tenure and annual board meetings.

2.3.1 Board Characteristics

Board size refers to the number of directors that constitute a given board, it is argued that the number of individuals constituting a board will significantly impact firm financial performance. The choice of a board size has centered on small and large size defined by numbers. Optimal board remain debatable and different scholars prefer different size. Al-Said (2021) argued that small board size is very effective in producing the desirable outcome intended and associated large boards with inefficiencies occasioned by poor communication and sluggish in decision making. According to Dzingai and Fakoya (2017) large boards are overcrowded and each member may not have an opportunity to make a decision and at times these boards are characterized by a lot of disorganizations which makes it difficult to reach a decision on time. Emeka and Alem (2016)

pointed out that with the increase of the board size, interpersonal communication reduces significantly and communication problem is occasioned which is a recipe to conflicts and confusion within the board.

Independence of board is essential in running the affairs of most corporates, non-executive board members are always associated with making of untainted decisions that have proved to be correct in fullness of time. Ordinarily such decisions are concerned with issues with absence of conflict of interests of other players within the industry excluding management, trade unionists and middle level management. Al-Said (2021) argues that non-executive directors may not effectively discharge their mandate only if they are separated from the management so that they can offer unbiased judgement. Uche (2017) noted that poor performance of corporate institutions indicated by unreported losses and low returns over dominance of executive board management and violation of corporate governance guidelines are attributed to lack of board oversight dominated by executive management that curtails the independence of board.

Board meetings considers number of firm board meetings held at a given firm within a certain period of time, normally on annual basis. Board meetings is one of the indicators of effectiveness boards when discharging their activities (Pugliese, et al., 2015). Board meetings held by a firm is vital in establishing issues that are bothering the organization and how to address them conclusively. Few studies have revealed that firms with frequent board meeting are normally not faced with financial challenges. Ordinarily board meetings are specified, however, board of directors can schedule meeting outside what is already out in the calendar depending on the prevailing circumstances that necessitated schedule of meetings (Hinton, 2012). Some scholars have argued that having more board meetings will help the board to know how the institution is being managed on day to day basis and whenever there is a problem it can be corrected

immediately for the situation deteriorates. Frequent meetings by the board enhances easier decision making by boards because there will be time abundance to address any pertinent issue in those meetings (Zhu, et al., 2016).

Board composition is supposed to be female inclusive to enhance efficiency and effectiveness. Gender diversity refers to a situation where female is part of the board and ardently involved in board affairs including decision making process. Lückerath-Rovers, (2013) argued that female board members are endowed with expertise and knowledge which the male counterparts may fall short of for instance female have sophisticated communication skills which can be of help to the effectiveness of the board. Resource dependency theorists have argued that more female in boards increases the financial performance of the boards. Hilman and Daziel (2003) observed that boards have been keen in aligning interest of all stakeholders and thus gender diversity have been considered as means of reducing agency cost and ultimately improving performance. Oakley, (2000) noted that women presence in the board can be viewed as a good indicator of social responsibility. Hilman, et al (2002) pointed out that gender diversity in boards promotes openness in governance which will guarantee stakeholder interests.

According to Ombaba, and Kosgei, (2017) board tenure are number of years on average directors sit in a board. Board tenure is a reflection of period and likelihood on how members have been monitoring the firm activities to ensure that they align to acceptable corporate governance practices (Dikolli, et al., 2014). Dalziel and Hillman (2003) pointed out experienced have extensive knowledge about the organization which may attribute to efficient decision making. It can be operationalized by expressing it as the number of years the board member has been serving in organization board.

2.3.2 Firm Size

Firm size is a significant financial element in understanding firm performance. Firm size is can be linked to economies of scale of a firm, similar to neoclassical growth of wealth (Lee, 2009). The size of firm tends to impact the performance of a firm in varied ways. Large firms are argued that it possesses sufficient financial and human resources compared to small firms and thus can efficiently generate income for the stakeholders (Chu, 2011). On the other hand, small scale firms possess less resources which limits them in pursuing competitive advantage over the large ones. However, this not always the case as other scholars argue that small firms can efficiently organize itself, devoid of a lot of bureaucracies and thus more likely to generate profits compared to large firms (Pervan & Višić, 2012; Hashmi, et al., 2020). Firm size is measured using several indicators including number of employees, number of branches, or total assets. However, total assets is often regarded as reliable measure of firm size (Andries & Faems, 2013; Li & Chen, 2018). The firm size in this study was measured using total assets held by the commercial state corporation.

2.4 Empirical Studies

Employing structural equation modelling Noja, et al., (2021) studied the interplay between board characteristics, corporate disclosure and profitability of financial firms in Europe. The study established that the presence board size, effective board structure and diverse board enhances the effective management of the firm affairs resulting to improved firm performance. It was concluded that board size and firm size to have strong effect on financial performance and profitability indicators. However, Noja, et al., (2021) failed to establish whether the nexus between financial performance and board size was significant. The study focused on firms in financial sector and this study focuses on firms owned state owned enterprise.

Focusing at manufacturing firms in Turkey, Topal and Dogan (2014) assessed the effect of board size and financial performance where 136 firms were selected to participate in the study from 2002 to 2012 and data was analyzed using SPSS. Board size was found to have a positive and significant effect on firm profitability using ROA. This positive link between board size and ROA was attributed by the author that optimal board size is associated with efficient decisions made by the board. However, board size may have negative impact on firm performance especially when the board size is too large or too small. Nonetheless the study looked at manufacturing industries contrasting current study that focuses at state owned enterprise. The study limited itself to single board characteristic while this study will focus on four board characteristic.

Employing descriptive research design, Shun, et al., (2017) studied the effect of board size on the profitability of NSE listed firms. The study targeted 68 firms listed in security exchange and panel model was adopted in data analysis. It was established that board size positive and significantly affects profitability of firms. It was concluded that board size tends to support optimal monitoring of the firm. Nonetheless, the study did not determine the exact size of large size which this study will attempt to answer. The study failed to demarcate between large and small board size.

Katuse, et al., (2013) assessed the role of board size on financial performance of banks in Kenya. The survey reviewed secondary data available in the banks' financial records. The study revealed that board size of the banks had significant effect of their profitability. However, the effect of board size on bank profitability tend to differ based on bank size. However, the study concluded that unchecked increase in the size of the board may have a negative impact on firm profitability. Too small or too large board size may negatively affect firm performance. The survey failed to determine how significant the linkage between firm size and banks's profitability.

Tulung and Ramdani (2018) studied board size, board independence, size with relation to performance of firms. The used secondary data from 26 commercial bank in Indonesia. The study found out appositive and significant effect of board size and board independence, board size and on the corporate governance of commercial banks. It was concluded that independent board are vital in offering unbiased advice and expertise to the bank management. Similarly, independent author enhances good corporate governance of the banks by offering independent advice that is crucial in firm decision making. Nonetheless, the study failed to outline how significant the relationship between board independence and profitability of the banks. The research also focused on banks whereas this study will not focus on, but focus on commercial state corporations presenting contextual gap.

Oludele, et al., (2018) studied the link that exist between board independence and profitability of listed manufacturing firms in Nigeria. A total 34 manufacturing firms from the 74 companies available in Nigeria were selected. Univariate regression model was employed in analysis. A positive and significant effect of board independence on the profitability of the listed manufacturing firms in Nigeria was established. The study revealed that there is a significant positive linear relationship between board independence and financial performance of listed manufacturing companies in Nigeria. It was also concluded that board independence facilitates the independent and objective governance of manufacturing firms. This is an indication that independent and non-independent board members in a firm's corporate entity enhances performance. Oludele, et al., (2018) targeted less than half of the actual observation yet it was possible to study the population in entirety given the size that was small presenting methodological gaps.

Rashid, et al., (2016) studied the independence of the board and firm performance among firms in Malaysia. The research reviewed secondary data from different firms. The study established that board independence facilitates objective monitoring of the firm enhancing their performance. It was concluded that board independence posits positive influence on firm performance. However, presence of independent board directors will not always trigger positive firm performance in an organization and may actually be a deterrent to firm performance. In that regard, the pressmen of an independent board ought to be carefully monitored to make sure it is objective in their oversight. The study had inconclusive finding which this study will clear by establishing a conclusive finding.

Rashid (2018) studied the effect of board independence on profitability of listed companies in Bangladesh. The study obtained information from 135 listed companies Dhaka Security Exchange. It was established that board independence does not significantly affect firm performance. It was thus concluded that board independence has no significant positive effect on firm profitability. Through numerous studies have indicated positive effect of board independence on firm performance, this is not the case for listed firms in Bangladesh an indication of contextual gap which may be due to different regulatory frameworks that guide board operations across countries. The conclusion that board independence does not affect firm performance contradicts many findings on the subject matter. This could be partly attributed to the methodology or the structure of governance in the said country.

Focusing at listed firms at NSE Kenya, Ombaba (2016) studied the effect of board diversity on firm financial performance. Panel data covering the period 2004 to 2014 was employed. The study established that a diverse board in terms of gender composition positively influences he performance of listed firms using ROA. It was concluded that board diversity influence firm performance. The study did not quantify the effect of board independence on financial

performance so that one can determine the nature of the variable relationship whether they are significant or insignificant.

Focusing at listed firms in Greece, Arvanitis, et al., (2022) assessed the question of whether board gender diversity has effect on their performance. It was established that gender diversity may lead to the establishment of a valuable board that can effectively oversight the firm management. It was concluded that board gender diversity, positively affects firm performance. The results align with the postulations of the resource dependence theory and agency theory that a gender diverse positively influences board operations in terms of proper monitoring and oversight of the firm management, enhanced legitimacy and enhanced decision making which are likely to trigger better firm performance. Despite indicating that gender diversity improve performance it was not quantified to what extent, the study focused on performance which resulted to knowledge gap because this study will focus on financial performance.

EmadEldeen (2022) studied the board diversity effect on performance of listed firms in UK. The study employed panel data covering the period 2000-2016 from London stock exchange. The study population was 3961 on nonfinancial firms. The study established gender diversity positively affects firm performance. The study concluded that diversity of board triggers improved firm performance. The study did not indicate the significance nature of the nexus existing between the two variable presenting methodological gap

Employing panel data and regression analysis Ebun and Olatunji (2019) determined the effect of board activism on the profitability of listed insurance firms in Nigeria. A 15 listed insurance firms in Nigeria participated in the exercise. It was established that board meeting had negative and insignificant effect on the performance of insurance firms measured using ROA, ROA and firm value. It was also concluded that board meetings are an expense to the organisation thus the

negative relationship. A conclusion is further made that there exists negative insignificant effect of board meetings on firm profitability in terms of Tobin's Q, ROE and ROA. This research looked at insurance firms contrasting current study that focuses at state owned enterprises presenting contextual gap that emanate from contextual differences where the two sectors operate.

Studying listed firms in Vietnam, Ting, et al., (2018) assessed the effect of board meetings on profitability of firms. The study evaluated top 100 in terms of market capitalization Vietnamese listed companies. It was found that that board meeting frequencies had negatively affected the performance of certain sampled firms of the study. Numrious board meetings imply high expenses to the organization which eats into the firm's net revenue sales and equity. Nonetheless, quality and objective board meeting can have positive impact on firm performance. The study concluded that often boards meet in the event of poor firm performance though this does not necessarily improve the profitability of firms. More meetings imply more costs and expenses of organizing the meetings and compensating the participants. These costs thus negative impact on the performance of the firms. The study failed to indicate whether the nature of the relationships were significant or not significant.

Abang'a, et al., (2021) assessed corporate governance practices and profitability of state owned enterprise in Kenya. The survey employed panel data covering the period 2015 to 2018 for 45 state owned enterprises in Kenya. A positive and significant effect frequency of board meetings on capital budget realization ratio that was used to measure financial performance in state owned enterprises was established. It was concluded that boards should have regular meetings so as to run the affairs of the state owned enterprises and provision of requisite oversight. The study used capital budget realization ratio to measure financial performance which will contradict what this study will use.

Aryani, et al., (2017) investigated board meetings and performance of firms in Indonesia. Over the period 2006 to 2016, the study purposely sampled 175 firms listed Jakarta Islamic Index. The study revealed that board meetings does not affect the performance of listed in Indonesia. A conclusion was thus made that board meetings does not improve firm performance. The frequency of board meetings have no significant value on the performance of firms and may lack adequate time to do the oversighting of the firm management. The study did not indicate nature of the relationship between the variables whether significant or insignificant. It looked on overall firm performance contrasting the current research that focuses on financial performance of commercial state owned enterprises in Kenya.

2.5 Summary of the Literature

Noja, et al., (2021) argued that optimal board size is vital for financial performance of an organization but did not specify whether this optimal board is small or large presenting a knowledge gap. Topal and Dogan (2014), Shunu, et al., (2017) and Katuse, et al., (2013) both agreed that the size of the firm's positively and significantly influences financial performance of a firm but did not establish the optimal size which a board should have to achieve efficiency and effectiveness. It was also noted that both studied focused on state owned enterprise prompting contextual gap. Both Oludele, et al., (2018) and Tulung and Ramdani (2018) agreed that board independence positively and significantly affects the performance of organizations. However, Rashid (2018) indicates existence of no linkage between board independence and firm performance which resulted to contradiction of finding and subsequently a knowledge gap. Additionally, Rashid, et al., (2016) found a mixed finding on the effect of board independence on firm financial performance. This resulted to inconclusive finding which this study intends to bridge.

Ombaba (2016) pointed out that gender diverse boards perform better, Arvanitis, et al., (2022) remarked that gender diversity of boards enhance the performance oversighting of the boards and EmadEldeen (2022) argued that gender diversity positively affects firm performance. Although both scholars agreed that gender diversity in boards positively and significantly affects performance, but Ombaba (2016) and Arvanitis, et al., (2022) did not clearly demystify this relationship resulting to a knowledge gap. Ebun and Olatunji (2019) and Ting, et al., (2018) found that board meetings negatively affected the performance of certain sampled firms of the study. Nevertheless, Abang'a, et al., (2021) indicated that board meetings have a positive and significant relationship with financial performance and these resulted to contradiction of findings. Moreover, Aryani, et al., (2017) concluded that board meetings had no link with financial performance and this amounted to inconclusive findings which this study is seeking to unlock.

2.6 Conceptual Framework

From the empirical literature review, the nexus between board characteristic and firm performance. It is postulated that that the link board size positively affects firm performance. Board independence increases the oversight role on the financial management of a company. Also, board independence is postulated positive effect on firm performance. Gender diversity within boards bring different and unique opinions that can enhance performance of a firm. Also, gender diversity is postulated to has a positive relationship with financial performance. Board meetings are crucial in passing companies' resolutions on effecting certain changes that will enhance performance. Frequent board meetings are associated with cost implications. Board meeting is expected to negatively affect the performance of the state owned enterprises. The control variables that include leverage, liquidity and firm size are expected to influence performance of commercial state corporations.

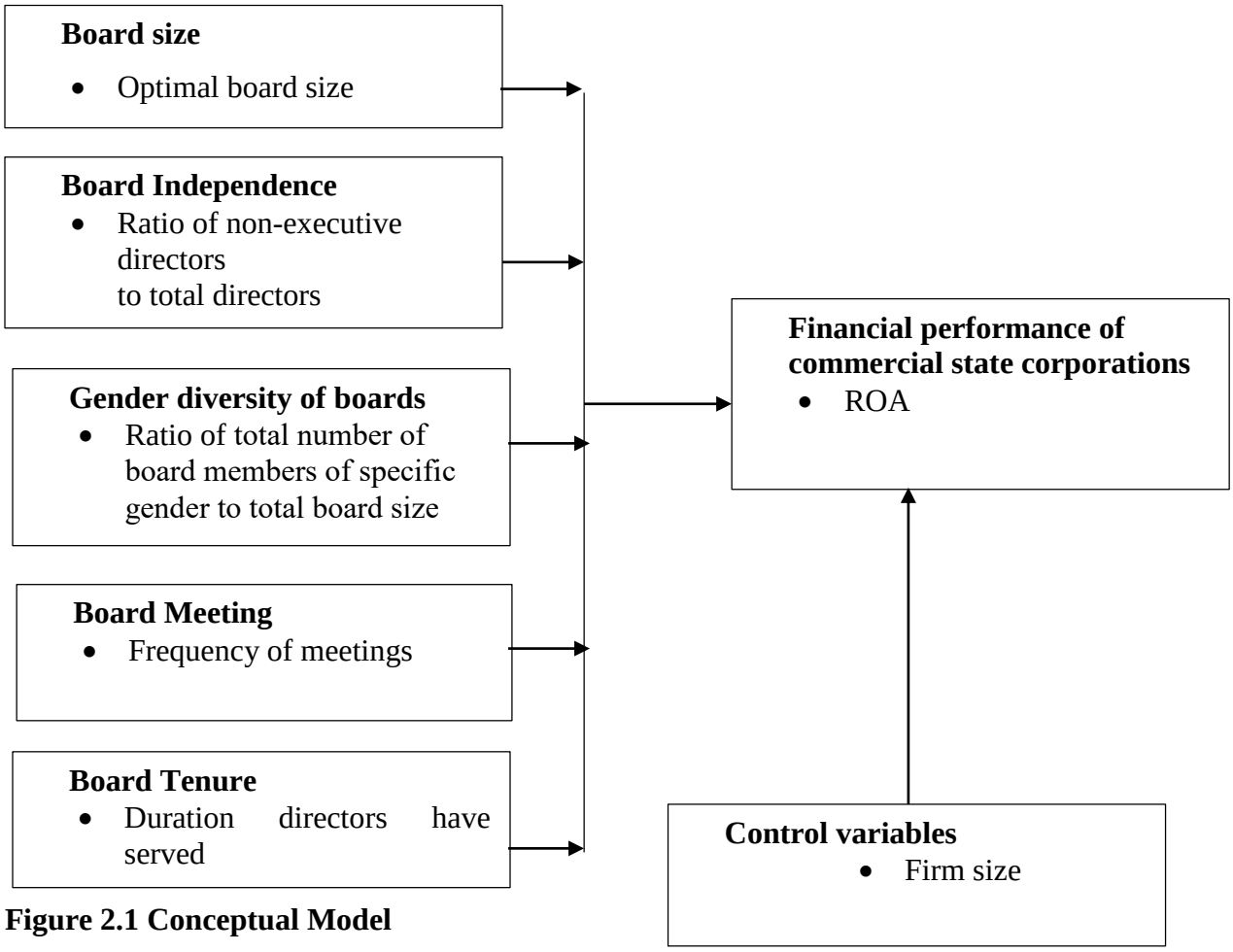

Figure 2.1 Conceptual Model

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The section presented the study design, study population and how sampling was undertaken to have the study population. The chapter also outlined how data collection was undertaken and tools that were used during the data collection exercise. Finally, the chapter outlined the techniques that was used in data analysis whereby the whole process was interpreted to have a meaning.

3.2 Research Design

This is framework that allow the analyst to thin of remedies to difficulties and allow him navigate in the techniques of gathering the relevant data, examination, interpretation as well as remarks (Bell, et al., 2018). The research adopted correlational design of study. The design intends to accurately and systematically describe a situation or population. It can give answers to how, when and where questions except why questions (Curtis, et al., 2016; Seeram, 2019). The design was useful in determining how board characteristic affect performance of financial performance of commercial state corporations. Correlation research design was also employed by Omagwa and Maina (2020) who studied the board characteristics and financial distress of listed banks in Kenya. Correlation research design was also adopted by Kirui, (2022) in the study on audit committee characteristics and performance of Kericho County Government.

3.3 Population

The study population is 33 commercial state owned corporations in Kenya over the period 2016-2021. The study employed census because the population is small. A census of all the 33 commercial state-owned enterprises was conducted and thus were studied in entirety.

3.4 Data Collection

Secondary data from financial records was used. The data for the study were extracted from the state owned corporation financial reports and auditor general financial report from 2016-2021. For optimal board size, board composition and board meeting was extracted from the report of inspectorate of state corporations. Optimal board size was operationalized by total head count of the members sitting in respective boards of commercial state owned corporations. For board independence, it was measured by computing the ratios of total non-executive board members and total board members which was extracted from the inspectorate of state corporation performance report from 2016-2021. Gender diversity was computed as the ratio of the total of the female board members to the total size of the board for each of the commercial state owned corporations. For the board meetings it was determined by using the total number of meetings each commercial state owned inspectorate of state corporation performance report from 2016-2021. To measure the financial performance of commercial state owned enterprise return on assets was employed.

3.5 Data Analysis

Data analysis is the process of organizing computing and interpreting data to give meaning (Ott & Longnecker, 2015). Stata software version 14.0 was employed in analyzing the data. During data analysis descriptive and inferential analyses were undertaken. The descriptive tests included the mean, minimum, maximum and standard deviation. Also, panel regression will be employed to establish the effect of board characteristic on the financial performance of commercial state-owned corporations. In case of missing data, unbalanced panel model will be employed. The model to be estimated is;

$$Y=\beta_0+ \beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4+ \beta_5X_5+ \beta_6X_6+ {}_+\varepsilon$$

Where: Y is financial performance of commercial state-owned corporation measured as ROA

X_1 is optimal board size of commercial state corporations operationalized as total head count of board members

X_2 is board independence of commercial state corporations measured as the total non-executive directors to total board directors

X_3 is gender diversity in boards of commercial state corporations operationalized as the aggregate number of board members of specific gender to total board members

X_4 is board meetings of commercial state corporations measured as average meetings conducted by the board in a given period of time.

X_5 is board tenure of state corporations measured as the average number of years the board members have been operating in the organization

X_6 is firm size of commercial state corporations measured as log of total assets.

ε is the error term

β_0 is the y intercept of the panel model.

β_1, β_2, β_3, and β_4 are the slope of the regression

A 95% confidence internal was used in the study to interpret the significance of the tests. The critical value is 0.05 and if the calculated p-value is less than 0.05, it is significance. However, if the calculated p-value is greater than 0.05, the test is statistically insignificant.

3.5.1 Diagnostic Tests

The diagnostic tests are conducted before estimating the regression model. The diagnostic tests estimated in the research included normality test, stationarity, multicollinearity test, autocorrelation, Heteroscedasticity and Hausman tests.

To test for normality, the Bera and Jarque (1981) was employed. The null hypothesis is that error terms of the data is normally distributed. When the calculated p-value is <0.05, we fail to reject null hypothesis. Nonetheless, if the p-value is <0.05, the error variation in the dataset is normally distributed.

Heteroscedasticity indicates of the tests on whether the variance of the errors in the repressors is dependent on the outcome variable. To check for Heteroscedasticity, the Breusch-Pagan test was adopted. Huge Chi square values is an indication of Heteroscedasticity (Islam, 2019).

A Fisher's test was undertaken to test for stationarity of data. Panel data entail both cross section and time series dimension and thus there is need for a test on stationarity of the time series because time series data ought to be stationary. The failure to check for stationarity ay result to incorrect model coefficients (Gujarati, 2009).

Severer Multicollinearity magnifies standard errors of the model resulting to incorrect model coefficients (Belsley et al., 1980). Variance inflation factors was adopted to check of collinearity in dataset. The VIF>5 implies that multicollinearity is present in the data (Field, 2009).

To ascertain whether random of fixed model speciation is appropriate, the Hausman's specification test (1978) was utilized. Failing to reject the null hypothesis implies random fixed model is the best. Rejecting the null hypothesis implies fixed model is the most suitable.

To check for correlation error terms in data across time, serial correlation test was undertaken. The Wooldridge test was employed. When dealing with panel data, serial autocorrelation often is a problem.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

Information was sought from different institutions and how they responded is examined and presented in this section. The chapter also outline the performance of various variables using statistics parameters such as averages, standard of deviation, minimum and maximum. Finally, this chapter further demonstrate the relationship of the study variables in a model that will be determined through various tests which will define the relationship.

4.2 Response Rate

Kenya has 33 commercial state corporations and all were targeted, data collection chart was prepared to help in extracting data published by the state commercial corporations and office of auditor general. The Table 4.1 indicate the response rate.

Table 4.1 Response Rate

Response	Frequency	Percent
Firms responded	30	90.9
Firms did not respond	3	9.1
Total	33	100

Out of the 33 commercial state corporations that were sought to provide data, 30 commercial state corporations had the necessary information which represented 90.9 percent response rate hence satisfactory to be studied. Peer, et al., (2017) remarked that whenever over 50% of the targeted respondents answers questions correctly then that study has been responded adequately and qualify

to be analyzed. If the respondents answers over 70% of the questionnaires then that is considered excellent and cognizant to this the response rate of 90.9% is adequate for the study to proceed further to analysis. The other three companies which were not studied faced several challenges for instance of the Gilgil telecommunication industries had been closed down, Pyrethrum board of Kenya lacked board and was only managed by the executive management and on the other hand Telkom Kenya limited did not publish any information regarding their board and financial performance.

4.3 Descriptive Results

Financial performance standards within commercial state corporations forms the basis of how these critical institutions should be governed. A proper and enforceable strategic plan guide these corporations in achieving that mandate. Furthermore, institutions of governance cannot achieve their mandate without proper corporate governance in place and board characteristic is a pillar of leadership within these institutions and the study enquired the how board characteristic affected financial performance of given institutions. The Table 4.2 presents the descriptive finding of the study.

Table 4.2 Descriptive Finding

Variable	Obs	Mean	Std. Dev.	Min	Max
Financial performance	180	-0.1127	1.1118	-8.5515	5.1745
Board Size	180	10.2444	2.1367	4.0000	16.0000
Board Independence	180	0.5994	0.1646	0.1667	0.9091
Gender Diversity	180	0.3065	0.1165	0.0909	0.7000
Board Meetings	180	11.6667	5.8672	4.0000	40.0000
Board Tenure	180	3.3358	1.0263	1.3636	8.9000
Firm size (in mn)	180	66,473.23	148,702.60	25.10	761,370.00

Kenya generating Electricity Company made the highest profit within the period 2016 to 2021 as shown by the return on asset of 5.1745. It was established that Numerical Machining Company recorded the highest loss within this period as shown by the minimum of -8.5515. The study revealed that commercial state corporation made loss within this period as indicated by the financial performance average of -0.1127 and 1.1118 as its standard deviation.

It was established that Kenya Ports Authority had the largest board size constituted of 16 directors. On the other hand, it was revealed that University of Nairobi Enterprises and Services Limited had the smallest board size constituting of only 4 members. The study established that most commercial state corporations had an average of 10 board members as indicated by an average statistics of 10.2444 and 2.1367 which represented statistics of standard deviation.

It was revealed that Kenya Seed Company enjoyed more board independence than any other state commercial state corporation as indicated by the maximum of 0.9091. The study revealed that School Equipment Production Unit had the lowest board independence as signified by the minimum statistic of 0.1667. The study taken a note that several state commercial entities recorded a board independence of 0.5994 as signified by the mean statistics and SD of 0.1646.

Kenyatta international convention center recorded more women in the board as signified by the maximum statistic of 0.7000. It was revealed that Kenya Ordinance Factories Corporation had least representation of women sitting in management board as signified by the statistics of minimum of 0.0909. From the study finding it was revealed that many of the commercial state corporation conformed to the third gender rule in constituting their boards as signified by the average statistics of 0.3065 and SD of 0.1165.

Railways Corporation recorded the maximum meetings held by board as signified by the maximum statistics of 40.0000. It was also revealed that Kenya Pipeline Corporation had the fewest board

meetings as depicted by the minimum statistics of 4.0000. The study established that most of the commercial state corporations convene an average of 12 board meetings has depicted by an average statistics of 11.6667 and SD of 5.8672.

Board tenure is critical in running institutions because it enriches management with institutional memory. The study established that Agro-Chemicals and Food Company had accumulated longest board tenure as signified by the maximum statistics of 8.9000. It was reported that South Nyanza Sugar Company had shortest board tenure as showed by minimum statistics of 1.3636. The study also established that most of the commercial state owned entities have a board tenure of 3.3358 as showed by mean and a standard deviation of 1.0263.

Firm size is strongly associated with efficiency and economies of scale and firms with large size tend to reap from these benefits and small firms struggle to cope with challenges associated with shortcomings. The study established that Railway Corporation has the largest asset base of kshs. 761,370 million as indicated by the maximum statistics. It was also revealed that University of Nairobi Enterprises and Services Limited had the smallest asset base valued at kshs. 25.1 million as showed by the minimum statistic. The study established that most of the state corporation valued at kshs. 66,473.23 million and a standard deviation of 148,702.60 which depicted a wide disparity among commercial state corporations.

4.4 Diagnostic Tests

The diagnostic tests are conducted before estimating the regression model. The diagnostic tests estimated in the research included normality test, stationarity, multicollinearity test, autocorrelation, Heteroscedasticity and Hausman tests.

4.4.1 Normality Test

To test for normality, the Bera and Jarque (1981) was employed. Table 4.3 shows normality test for data for the 33 commercial state corporation for the period 2016 to 2021. In this study the test for normality was performed. When the calculated p-value is <0.05, we fail to reject null hypothesis. Nonetheless, if the p-value is <0.05, the error variation in the dataset is normally distributed. For financial performance; the p value =0.0589>0.05, Board Size; p value=0.0799>0.05, Board Independence; p value =0.0678, Board Diversity; p value = 0.0658>0.05, Board Meetings; p value = 0.0612>0.05, Board Tenure; p value =0.0589 and Firm Size; p value = 0.0513>0.05.) as presented in Table 4.3.

Table 4.3 Normality Results

Variables	Obs	Pr(Skewness)	Pr(Kurtosis) adj	chi2(2)	Prob>chi2
Financial performance	180	0.739	0.338	8.060	0.0589
Board Size	180	0.584	0.406	9.12	0.0799
Board Independence	180	0.0569	0.3126	7.892	0.0678
Board Diversity	180	0.0312	0.2417	6.89	0.0658
Board Meetings	180	0.03810	0.2416	5.890	0.0612
Board Tenure	180	0.0412	0.2314	6.14	0.0589
Firm Size	180	0.0320	0.2175	5.94	0.0513

4.4.2 Heteroscedasticity test

Heteroscedasticity indicates of the tests on whether the variance of the errors in the regressoors is dependent on the outcome variable. To check for Heteroscedasticity, the Breusch-Pagan test was adopted. Huge Chi square values is an indication of Heteroscedasticity. Table 4.4 presents the heteroscedasticity output.

Table 4.4: Heteroscedasticity test results.

Heteroscedasticity Results
Ho: Constant variance
Variables: fitted values of ROA
chi2(1) = 3.87
Prob > chi2 = 0.0613

From the results presented in Table 4.4, with a Chi square of 1.84, then the results imply that heteroscedasticity is not present. We fail to reject the null hypothesis of constant variance. The null hypothesis was accepted justifying the absence of heteroscedasticity in the data as indicated by Poi and Wiggins (2001).

4.4.3 Multicollinearity

Severer Multicollinearity magnifies standard errors of the model resulting to incorrect model coefficients (Belsley et al., 1980). Variance inflation factors was adopted to check of collinearity in dataset. To test multicollinearity of this study, the study employed VIF. Values greater than 5 indicates the presence of Multicollinearity (Field, 2009). Table 4.5 presents the multicollinearity results of the study.

Table 4.5 Multicollinearity Results

Variable	**VIF**	**1/VIF**
Board Size	1.86	0.536822
Board Independence	1.84	0.542963
Board Diversity	1.69	0.593158
Board Meetings	1.48	0.675666
Board Tenure	1.39	0.718791
Firm Size	1.05	0.952053
Mean VIF	1.55	

The results presented in Table 4.5 show the absence of multicollinearity within the study variables. The variance inflation factor figures are less than 10 (1.86 < 10, 1.84< 10, 1.69<10, 1.48 < 10, 1.39< 10, 1.05<10).

4.4.4 Autocorrelation

To check for correlation error terms in data across time, serial correlation test was undertaken. The Wooldridge test was employed. When dealing with panel data, serial autocorrelation often is a problem. To test autocorrelation, the hypothesis tests below were done. The null hypothesis is that the panel model has no serial correlation.

Table 4.6 Serial Autocorrelation Results

Serial autocorrelation Results
H_0: no first-order autocorrelation
F (1, 12) = 1.930
Prob > F = 0.1701

The null hypothesis is that the panel model has no serial correlation. The Serial Correlation output showed a F-test of 1.930 and a p= 0.1701>0.05. Thus, serial correlation is absent in the dataset

4.4.5 Stationary Test

A Fisher's test was undertaken to test for stationarity of data. Panel data entail both cross section and time series dimension and thus there is need for a test on stationarity of the time series because time series is based on the assumption that variables are stationary. The failure to check for stationarity ay result to incorrect model coefficients (Gujarati, 2009). The null hypothesis is that panel data has no unit root. The results are shown in table 4.7.

Table 4.7 Stationarity Results

Variable		Inverse chi-squared (70) P	Inverse normal Z	Inverse logit t (179) L*	Modified inv. chi-squared Pm
Financial performance	test statistic	142.9226	-0.0920	-3.1016	7.5698
	p-value	0.0000	0.0033	0.0011	0.0000
Board Size	test statistic	88.5255	-3.6096	-3.5675	2.6040
	p-value	0.0097	0.0002	0.0003	0.0046
Board Independence	test statistic	159.7819	-4.9041	-6.9062	9.1088
	p-value	0.000	0.000	0.000	0.000
Board Diversity	test statistic	221.5889	-6.6137	-10.0348	14.7510
	p-value	0.000	0.000	0.000	0.000
Board Meetings	test statistic	122.0307	-2.7144	-3.8848	5.6626
	p-value	0.000	0.0033	0.0001	0.000
Board Tenure	test statistic	217.7408	-4.7419	-9.1421	14.3997
	p-value	0.000	0.000	0.000	0.000
Firm Size	test statistic	398.0031	-5.7960	-15.8275	30.8553
	p-value	0.000	0.000	0.000	0.000

The stationarity results test for unit root revealed that, at level financial performance, board size, board independence, board diversity, board meetings, board tenure and firm size were stationary since p-value<0.05 at P, Z, L* and Pm.

4.4.6 Specification of the Model

The choice on selecting either a random effects model or a fixed effects model, when performing analysis of panel regression must be determined (Baltagi, 2005). This is done by estimating the coefficients of both of the above models. To ascertain whether random of fixed model speciation

is appropriate, the Hausman's specification test (1978) was utilized. The Hausman results are shown in Table 4.8.

Table 4.8 Hausman Test Results

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	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
BoardSize	-.1855662	-.1948413	.0092751	.0067191
BoardIndep~e	1.03505	1.121613	-.0865629	.1100922
GenderDive~y	1.071207	1.054611	.0165962	.0699272
BoardMeeti~s	.0143267	.0147901	-.0004634	.0015347
BoardTenure	-.0429201	-.0401254	-.0027947	.0159799
FirmSize	.3058102	.3051079	.0007022	.0123508

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 2.05
Prob>chi2 = 0.9149

Results presented in table in Table 4.7 indicate that the calculated P value of the model is 0.9149. Since 0.9149>0.05, then the results imply that the random effect model is appropriate for this particular study. We fail to reject the null hypothesis that random effect is appropriate and reject the alternative hypothesis that fixed effect is not appropriate for the study.

4.5 Regression of the Effect of Board Characteristic on Financial performance of State Corporation

Boards of state corporations are instrumental in overseeing management, giving policy direction and making strategic decisions. Financial oversight is a core function of most of the boards. Financial management is critical on overall performance of state owned enterprise and its sustainability. The study sought to establish the relationship of board characteristics which features

size of the board, diversity of the board, level of independence, and meetings of the board, duration of the board and firm size on the performance of financial indicators. The panel regression on board characteristic and financial performance is shown in Table 4.9.

Table 4.9 Board Characteristic and financial performance

Financial performance	**Coefficient**	**Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
Board Size	-0.1948413	0.0469388	-4.15	0.000	-0.28684	-0.10284
Board Independence	1.121613	0.5575103	2.01	0.044	0.028913	2.214313
Gender Diversity	1.054611	0.6795726	1.55	0.121	-0.27733	2.386549
Board Meetings	0.0147901	0.0155286	0.95	0.341	-0.01565	0.045226
Board Tenure	-0.0401254	0.1021448	-0.39	0.694	-0.24033	0.160075
Firm Size	0.3051079	0.1102779	2.77	0.006	0.088967	0.521249
_cons	-2.202621	1.193814	-1.85	0.065	-4.54245	0.137213
R-sq:	within = 0.1565					
	between = 0.7576					
	overall = 0.1649					
Wald chi2(6) =	34.15					
Prob > chi2 =	0.0000					

The panel regression model is;

Financial performance = -2.202621-0.1948413Bs+1.121613Bi+1.054611Gd+0.0147901Bm -0.0401254Bt +0.3051079 Fs

Bs- Board size

B**i –** Board independence

Gd - Gender diversity

Bm- Board meetings

Bt - Board tenure

Fs- Firm size

The coefficient of determination was used to determine how the model is fitted. It was revealed that revealed that the coefficient finding of 0.1649. This means that size of the board, diversity of the board, level of independence, number of the meetings, duration of the board management and firm size explain 16.49% of variations in financial performance of the commercial state corporations. The results imply that board size, board diversity, board independence, board meetings, board tenure and firm size are predictors of financial performance. Financial performance assesses the outcome of strategies of firm, financial parameters performance, high productivity and effectiveness in monetary terms. It also lays out how a firm utilizes resources effectively to derive profitability. This will help the management to define the competitiveness of a firm and also explore the potential of a business.

Coefficient result showed that board size has adverse influence on profitability of state corporations (β =-0. 1948413, p=0.000<0.05). The finding was reinforced by z-statistic of 1.15which is more that critical z-statistics of 1.96. This implies that additional a member into the board results to 0.1948413 units' decline in profitability of state owned entities. Excess number of people in the board is ineffective because it distorts interpersonal relation and perhaps communication.

Finding of the study deduced that level of independence and financial performance of commercial state corporation (β =1.121613, p=0.044<0.05). It was backed by a computed z-statistic of 2.01 that is greater than the critical z-statistic of 1.96. It implied that additional of independent members into the board resulted to 1.121613-unit increase of financial performance of commercial state owned corporations. Independence of boards enhances accountability and transparency through oversight which fosters performance and financial management.

Board diversity influenced profitability of state owned entities (β =1.054611, p=0.121>0.05). It was backed by computed z-statistic of 1.55 that is smaller than the critical z-statistic of 1.96. Presence of women in board may induce a positive perception of fair representation which can be viewed as indicator of social responsibility because both gender are equally qualified and have competencies to render feasible decisions within the board. Hilman, et al (2002) pointed out that gender diversity in boards promotes openness in governance which will guarantee stakeholder interests.

Coefficient finding showed that frequency of meetings held by board positively and insignificant related on profitability of state owned entities (β =0.0147901, p=0.341>0.05). This was backed by an estimated z-statistic of 0.95 which was smaller than the value read from the table of z-statistic of 1.96. Meetings attended by management board are vital in establishing issues that are bothering the profitability parameters of the firm and how to address them conclusively. Board meetings is one of the indicators of effectiveness boards when discharging their activities (Pugliese, et al., 2015).

Board tenure is negatively related with financial parameters of state owned commercial enterprise and its effect is not significant (β =-0. 0401254, p= 0.694>0.05). It was evident by the comparison of an estimated z-statistic of 0.39 and z-statistic of 1.96 read from the tables which was relatively smaller. Although board tenure is linked with experience accumulated over years by directors which is invaluable to management. However, overstay in the board may be linked to diminishing returns which may deter financial performance of the commercial state owned corporations.

The outcome of the regression analysis showed that firm size influenced profitability of commercial corporations positively (β =0.3051079, p=0.006<0.05). It was backed by computed z-statistic of 2.77 which was bigger than z-statistic of 1.96 read from the table. An increase of one

unit of a firm size results to 0.3051079 increase of profitability. Bigger firms enjoy derive economies of scale and efficiency. This economic advantage of large firms are associated with lower cost of production and increased the profitability margin of commercial firms. This has direct influence on financial performance of an organization in several aspects.

4.6 Discussion

Optimal board size is paramount to the performance of commercial State Corporation. Large board size is not desirable since most of the meetings may be characterized by confusion, disorder and poor communication. Efficient board always have requisite experts with relevant knowledge required to help organization improve its performance and realize its goals. Small and manageable boards are efficient in discussing issues that have intended outcomes. On the other hand, large boards are occasionally experience inefficiencies necessitate by improper communication and sluggish decision making. According to Dzingai and Fakoya (2017) large boards are overcrowded and each member may not have an opportunity to make a decision and at times these boards are characterized by a lot of disorganizations which makes it difficult to reach a decision on time.

Large crowded board is faced with poor communication in delivering its mandate. Emeka and Alem, (2016) remarked that huge crowded meeting experience interpersonal communication challenge since every participant will struggle to assert their position within the already competing interest among board members. Efficient board ordinarily manages communication among member effectively in order to embrace the good practices of management and ultimately improve financial performance. Optimal board can easily reach a decision because communication structure is predictable and expertise of every participant is weighted before a decision is made.

The finding agreed with Noja, et al., (2021) who observed size of the board and firm considerably indicated by study outcome as predictor of firm success in terms of profitability. It also concurred

with Topal and Dogan (2014) that noted that scope of the board and indicators of performance may be demonstrated by quality decision making that enhances efficiency. However, it contradicted Shunu, et al., (2017) that established that larger board scope has an affirmative implication on performance of a firm. Although Katuse, et al., (2013) insisted on a larger board size but cautioned the need to have reasonable number that can perform optimally.

Independent board members are known for making unilateral decisions that helps the company to improve. In most cases such decisions are concerned with issues not manipulated by big players to suit certain course and leaving other players within the industry excluding management, trade unionists and middle management. Moreover, management team are likely not execute their mandate as required because they are under some due influence from the management and impartial judgement within the board is likely to be impaired. It is always been the case that poor performance of corporate institutions depicted by low productivity, undocumented deficiency, and high unproductive loans, unchecked management excesses and non-conformity to legal framework are attributed to lack of board oversight dominated by executive management that curtails board independence.

This finding agreed with Tulung and Ramdani (2018) who concluded that independence of management board is vital in enhancing organizations performance through making non-manipulated proposals during annual general meeting involving all the stakeholders which can influence corporate governance aggregately. The outcome also conformed to Oludele, et al., (2018) who noted that high level of independence within board is paramount to the aggregate profitability among manufacturing firms across Nigeria. The finding contradicted the studied of Rashid, et al., (2016) and Rashid (2018) who found mixed finding on the implication of the level of independence of management board on performance of organizations.

Meetings of the board are vital in passing resolutions which will inform the corporation policy direction and strategic management. Board meetings are specified over a given period of time to achieve specific target and the frequency can be reviewed subject to the matter that is supposed to be addressed. Regular meetings of the board assist board to monitor how the organization is being managed day to day and in case of a problem it becomes easier to make an intervention. Study outcome agreed with Aryani, et al., (2017) that concluded that meetings of the board does not affect performance of companies. It also concurred with Ting, et al., (2018) who conclude that although board meetings become frequent when the institution are performing poorly but overall the board meeting does not improve performance. The finding contradicted Ebun and Olatunji (2019) and Abang'a, et al., (2021) who argued that meetings of the board influences the aggregate performance of an organization.

Diversity within board is critical in bringing different expertise together to achieve a common goal. At times female counterpart in the board are endowed with certain skills that are inadequate among male members and through such the institution stand to benefit. Diversity is associated with up scaled legality, efficient supervision, optimal decision making process and open accessibility to scarce outsourced resources which enhance financial performance of a firm. This finding agreed with Ombaba (2016) who noted that gender diverse boards perform better. According to Arvanitis, et al., (2022) gender diverse board influences profitability positively. This outcome agreed also with the results of EmadEldeen (2022) who remarked that additional female into management board is linked with improved profitability in an organization.

Board tenure is important in addressing the rampant issues faced by the institution more often. This is because of the accumulated experience by board members that come with in-depth knowledge about the problem and how best to address it. Experienced board member have vast

knowledge that is critical on institutional memory and also laying the foundation for succession plan. It guides the board on previous failures and how it was addressed and also pointing out existing gaps that need urgent solution. According to Dikolli, et al., (2014) board tenure is a reflection of a likelihood on how members have role over supervision of executives which enhances average tenure period increment. Hillman and Dalziel, (2003) pointed out experienced have extensive knowledge about the organization which may attribute to efficient decision making. However, overstaying in the board will lead to diminished returns.

Large firms enjoy economies of scale and efficiency. This effectiveness of large firms are associated with decreased expenditure on production and increased the profitability margin of commercial firms. This has direct influence on financial performance of an organization in several aspects. According Chu to (2011) large firms have an edge derived from economies of scale that are related with efficiency as compared to smaller firms. It was further echoed by Andries and Faems, (2013); Li and Chen, (2018) who argued lesser firms faced challenges when competing with established firms due to their economic dominance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The section outlines summary of the study from background section to discussion of the finding. Based on the finding of the study conclusion is drawn and this section outlines this. Further, this section will propose several recommendations based on the outcome of the study touching on practice, area for further research and limitations of the study.

5.2 Summary of the Study

Implementation of financial parameters guidelines in commercial state entities was targeted at conformity to country's development blueprint, however, this has not been fully realized (Nyamita, *et al.,* 2014). The significance of management board in an institution management is paramount and is not underrated, board of management is critical component of corporate leadership (Fama and Jensen, 1983). Cheung, et al., (2011) remarked the urge and effective features responsibility undertaken by board of directors in running management affairs of the organization. The research study was underpinned by agency theory. The theory is premised on a person acting on behalf of another person. The study was supported by stakeholder theory, Resource dependence theory and Stewardship theory.

The research employed correlational design for the study. All the 33 commercial state owned corporations in Kenya over the period 2016-2021 were studied. In data collection census was adopted because the target population was small. Data was extracted from the annual financial reports of commercial state entities audited by the office of auditor general. The data was analyzed using Stata software where statistical parameters were generated to measure the variables of the study. Inferential statistics involved the use of panel regression to determine the relationsip

between board characteristic and financial performance. Descriptive results were employed included the minimum, maximum, mean and standard deviation.

Out of the 33 commercial state corporations that were sought to provide data, 30 commercial state corporations had the necessary information which represented 90.9 percent response rate. Kenya generating Electricity Company made the highest profit within the period 2016 to 2021 as shown by the return on asset of 5.1745. The study revealed that commercial most of the state corporation made loss within this period. Kenya Ports Authority had the largest board size constituted of 16 directors. The study established that most commercial state corporations had an average of 10 board members within their board. The study noted that many of the state owned entities recorded a board independence above average. The study established that Kenyatta international convention center recorded more women in the board. Kenya Railways Corporation recorded the highest number of board meetings occasioned by the continuous loss making. Agro-Chemicals and Food Company had accumulated longest board tenure among commercial state owned corporations.

The study was supported by coefficient of determination R-square of 0.1649. This means that board size, board diversity, board independence, board meetings, board tenure and firm size explain 16.49% of variations in financial performance of the commercial state corporations. Coefficient of the result indicated that board size has a negative and significant relationship with financial performance of state corporations (β =-0. 1948413, $p=0.000<0.05$). Excess number of people in the board is ineffective because it distorts interpersonal relation and perhaps communication. The study finding established that there exist a positive and significant relationship between board independence and financial performance of commercial state corporation (β =1.121613, $p=0.044<0.05$). The study also found out that board diversity has a positive and insignificant effect on the financial performance of commercial State Corporation (β

=1.054611, p=0.121>0.05). It was also revealed that board meetings have a positive and insignificant effect on financial performance of commercial state corporations (β =0.0147901, p=0.341>0.05). Additionally, the study revealed that firm size has a positive and significant effect on the financial performance of state corporation (β =0.3051079, p=0.006<0.05).

5.3 Conclusion

Based on the finding, the study conclude that large board size negatively affect financial performance of a state corporation. This implies that additional a member into the board results to 0.1948413 units decline in financial performance of the commercial state corporation. Excess number of people in the board is ineffective because it distorts interpersonal relation and perhaps communication. Small and manageable boards are efficient in discussing issues that have intended outcomes. On the other hand, large boards are occasionally experience inefficiencies necessitate by improper communication and sluggish decision making.

The study conclude that board independence has a positive influence on financial performance of commercial State Corporation. Addition of an independent member into the board resulted to 1.121613 units increase of financial performance. Independence of boards enhances accountability and transparency through oversight which fosters performance and financial management. Independent board members are known for making unilateral decisions that helps the company to improve. In most cases such decisions are concerned with issues devoid of undue influence of vested interests of other players within the industry excluding management, trade unionists and middle management.

The study conclude that board diversity has a positive and insignificant effect on the financial performance of commercial State Corporation. Diversity within board is critical in bringing

different expertise together to achieve a common goal. Presence of women in board may induce a positive perception of fair representation which can be viewed as indicator of social responsibility and also both gender are equally qualified and have competencies to render a feasible decisions within the board.

Further, the study conclude that board meetings have a positive and insignificant effect on financial performance of commercial state corporations. The number of meetings held by board is vital in establishing issues that are bothering the financial performance of the firm and how to address them conclusively. Board meetings is one of the indicators of effectiveness boards when discharging their activities

Additionally, the study conclude that board tenure has a negative and insignificant effect on financial performance of commercial state corporations. Although board tenure is linked with experience accumulated over years by directors which is invaluable to management. However, overstay in the board may be linked to diminishing returns which may deter financial performance of the commercial state owned corporations.

Finally, the study conclude that firm size has a positive and significant effect on the financial performance of State Corporation. Large firms enjoy economies of scale and efficiency. This economies of scale are associated with lower cost of production and increased the profitability margin of commercial firms. This has direct influence on financial performance of an organization in several aspects.

5.4 Recommendations

Based on the findings, the study recommends the establishment of an optimal board size that is manageable. Optimal board should not be small or large, optimal board size is effective in decision making and fastpacking unresolved issues. Optimal board size helps the institution avoid financial implications that are associated with large board. Moreover, optimal board size should also be made up of people with experience and knowledge on vast areas that are touching the productivity of the organization.

The study recommends the strengthening of independence within boards by increasing the number of non-executive board members to a majority in all state corporations. Non-executive board members are known for having impartiality in decision making and this is attributed to the lack influence from the executive. Impartiality in decision making is critical in making radical changes and reforms that are deemed necessary for state corporations to turn around the underwhelming performance currently witnessed in most of these institutions as showed by the numerous losses made.

Finally, the study recommends the engineering of growth of firm size so that they derive economies of scale associated with large firms. This is achievable through mergers of organization with similar product line or entering into partnership in strategic areas of interest that can engineer growth of firm size. Strategic collaboration is critical in fostering relations and widening the market niche that can spur growth firms.

On the basis of policy, the study recommend that recruitment of board members should be based on educational qualifications and experience. This will add value in management of state corporations. Ordinarily board should be more competent to the extent of interrogating

management proposal because at times most management may take the advantage of the board inability to articulate certain proposals to advance inappropriate policies.

5.5 Area for Further Research

Board tenure entail years of experience and expertise individuals have acquired during long years of service. The finding of the study that board tenure and financial performance have a negative and insignificant relationship is something that needs further analysis. The computation of board tenure is debatable and in most cases may not give the true reflection of the level of expertise and knowledge an individual may be in possession with. Therefore, this study recommends further research on this area for clarity and bridge of the knowledge gap that exist.

The effectiveness of board could significantly improve through board competency. Board competency entails the ability of the directors to be aware of specific management practices and taking decisions that needs vast knowledge. Competent board could easily oversight executive management by interrogating management and developing strategies which can enable the organization achieve optimal financial performance. The future research should include board competency as part board characteristics so as to achieve desired outcomes.

Financial reports audited by the constitutional mandated office for state corporations are faced with several shortcomings. One of the most noticeable one is its availability and is occasioned by the operationalization of the audit office that seems not honor submission of reports on time. The study was only able to undertake the financial performance of state corporations for five years which may not give a true position on the financial performance and the implication of board characteristic. Future researchers should consider undertaking a study where prolonging of time is considered from the current five years to twenty years so that more reliable finding could be obtained.

5.6 Limitation of the Study

During the data collection some of the state corporations were not able to provide data resulting to methodological limitation. Some of the respondents lacked substantial boards and others have closed down as result of non-conducive business environment occasioned by the pandemic. This lowered the responsive rate which affected the reputation of the study finding given that they were few firms being studied in short period of time.

The study focused on various aspects of board characteristics which included board size, board independence, board diversity, board meetings and board tenure which can be considered strong predictor of financial performance. The study did not focus on the aspect of board competencies which is vital in oversighting the performance of state corporations. Performance of Board could be improved through different level of competency such as financial expertise attributed to familiarity, knowledge and ability of dealing with prevailing conditions which the firm could face.

Audit of financial statements of state corporations are undertaken by the office of auditor general, office that was established by the new constitution and since then has been missing datelines on delivering these critical reports. The study could not investigate the effect of board characteristics on financial performance for state corporations for a longer period such 20 years because information of audited financial statement were unavailable. This hampered the outcome of the study because variable such as board tenure that was linked directly to time and this study failed to address it adequately.

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APPENDICES

Appendix I: Secondary data

Company	year	Financial performance	Board Size	Board Independence	Gender Diversity	Board Meetings	Board Tenure	Firm Size	Firm size in mn
Kenya Electricity Transmission Company	2016	5.174509	10	0.8	0.4	12	2.4	11.0391	109,421
Kenya Electricity Transmission Company	2017	3.186979	10	0.8	0.3	17	2.8	11.12988	134860
Kenya Electricity Transmission Company	2018	2.773861	9	0.777778	0.333333	16	3.444444	11.19623	157,120
Kenya Electricity Transmission Company	2019	0.809419	10	0.6	0.2	15	3.5	11.23685	172,525
Kenya Electricity Transmission Company	2020	-3.149048	11	0.454545	0.272727	19	2.818182	11.25879	181,465
Kenya Electricity Transmission Company	2021	-0.235783	11	0.545455	0.363636	22	3.090909	11.28186	191,362
Numerical Machining Complex	2016	-1.739305	12	0.5	0.333333	7	3.166667	8.873902	748
Numerical Machining Complex	2017	-0.790725	12	0.5	0.25	6	3	8.924796	841
Numerical Machining Complex	2018	-6.112179	11	0.454545	0.363636	8	3.818182	8.971276	936
Numerical Machining Complex	2019	-6.931198	11	0.545455	0.272727	9	3.727273	8.925828	843
Numerical Machining Complex	2020	-8.551492	16	0.305	0.125	6	2.5625	9.016616	1,039
Numerical Machining Complex	2021	-1.125448	11	0.145455	0.272727	11	3.636364	9.047664	1,116
National Water Conservation and Pipeline Corporation	2016	0.059178	12	0.666667	0.333333	9	2.416667	9.299725	1,994
National Water Conservation and Pipeline Corporation	2017	0.000794	12	0.666667	0.333333	6	2.25	10.30456	20,163

National Water Conservation and Pipeline Corporation	2018	-0.004516	12	0.666667	0.333333	8	2.833333	10.31372	20,593
National Water Conservation and Pipeline Corporation	2019	-0.006669	12	0.666667	0.25	7	2.333333	10.33732	21,743
National Water Conservation and Pipeline Corporation	2020	-0.008615	12	0.666667	0.25	17	2.666667	10.36143	22,984
National Water Conservation and Pipeline Corporation	2021	-0.009534	11	0.545455	0.272727	14	2.454545	10.37099	23,496
National Oil Corporation of Kenya	2016	-0.135140	10	0.6	0.3	9	2.8	9.776629	5,979
National Oil Corporation of Kenya	2017	-0.016258	8	0.75	0.375	8	3.375	9.615003	4,121
National Oil Corporation of Kenya	2018	0.137475	10	0.7	0.2	11	2.9	9.594171	3,928
National Oil Corporation of Kenya	2019	-0.152234	10	0.6	0.3	11	3.1	9.511215	3,245
National Oil Corporation of Kenya	2020	-0.186362	9	0.666667	0.444444	18	3.777778	9.411788	2,581
National Oil Corporation of Kenya	2021	-0.299826	10	0.7	0.4	17	3.9	9.36135	2,298
National Housing Corporation	2016	0.027951	10	0.7	0.4	5	2.8	10.08636	12,200
National Housing Corporation	2017	0.018983	10	0.7	0.5	6	2.9	10.31271	20,545
National Housing Corporation	2018	0.008495	9	0.777778	0.666667	8	3.777778	10.31387	20,600
National Housing Corporation	2019	0.014563	12	0.583333	0.416667	6	3.166667	10.31387	20,600
National Housing Corporation	2020	0.012009	12	0.583333	0.5	4	2.416667	10.33041	21,400
National Housing Corporation	2021	0.012124	12	0.583333	0.5	5	2.666667	10.35411	22,600
National Cereals and Produce Board	2016	0.025570	9	0.555556	0.333333	7	3.777778	10.44475	27,845
National Cereals and Produce Board	2017	0.019483	10	0.6	0.2	11	2.5	10.47452	29,821

National Cereals and Produce Board	2018	0.021334	10	0.5	0.2	13	2.8	10.45339	28,405
National Cereals and Produce Board	2019	0.025627	10	0.6	0.1	12	2.7	10.44682	27,978
National Cereals and Produce Board	2020	0.041473	9	0.444444	0.222222	6	2.666667	10.42284	26,475
National Cereals and Produce Board	2021	0.034899	9	0.444444	0.111111	8	2.888889	10.43856	27,451
Kenyatta International Conference Center	2016	0.010470	10	0.7	0.5	8	3.4	9.59073	3,897
Kenyatta International Conference Center	2017	0.022292	9	0.666667	0.666667	6	3.111111	9.601734	3,997
Kenyatta International Conference Center	2018	0.031953	10	0.7	0.4	4	2.9	9.603036	4,009
Kenyatta International Conference Center	2019	0.009237	11	0.636364	0.636364	7	2.454545	9.606059	4,037
Kenyatta International Conference Center	2020	0.009043	10	0.6	0.6	9	3.1	9.604766	4,025
Kenyatta International Conference Center	2021	0.014361	10	0.7	0.7	6	3.2	9.602494	4,004
Kenya Wine Agencies	2016	0.374172	8	0.75	0.375	11	4.375	8.781037	604
Kenya Wine Agencies	2017	0.414493	9	0.666667	0.333333	13	3.555556	8.838849	690
Kenya Wine Agencies	2018	0.402703	10	0.7	0.4	17	3.6	8.869232	740
Kenya Wine Agencies	2019	0.388150	9	0.666667	0.333333	12	3.111111	8.917506	827
Kenya Wine Agencies	2020	0.348837	10	0.7	0.4	10	3.1	8.995196	989
Kenya Wine Agencies	2021	0.342105	8	0.625	0.375	9	4.25	9.042182	1,102
Kenya Seed Company Limited	2016	0.063802	10	0.8	0.2	10	3.6	10.10951	12,868
Kenya Seed Company Limited	2017	0.071471	11	0.818182	0.272727	11	3.454545	10.07273	11,823

Kenya Seed Company Limited	2018	0.046797	9	0.888889	0.222222	8	4.555556	10.08945	12,287
Kenya Seed Company Limited	2019	0.019706	11	0.909091	0.090909	9	2.727273	10.09985	12,585
Kenya Seed Company Limited	2020	0.021802	12	0.75	0.166667	12	2.333333	10.10554	12,751
Kenya Seed Company Limited	2021	0.023009	12	0.75	0.166667	9	2.166667	10.10792	12,821
Kenya Safari Lodges and Hotels	2016	0.063325	10	0.6	0.2	6	2.8	8.879669	758
Kenya Safari Lodges and Hotels	2017	0.074906	9	0.777778	0.333333	5	2.888889	8.903633	801
Kenya Safari Lodges and Hotels	2018	-0.041951	10	0.6	0.2	7	2.1	8.92993	851
Kenya Safari Lodges and Hotels	2019	0.029778	10	0.7	0.3	6	2.4	8.954243	900
Kenya Safari Lodges and Hotels	2020	-0.182396	10	0.6	0.2	5	2.5	9.042182	1,102
Kenya Safari Lodges and Hotels	2021	0.039933	10	0.7	0.3	6	2.8	9.079904	1,202
Kenya Railways Corporation	2016	0.005418	11	0.727273	0.363636	38	2.909091	10.85833	72,165
Kenya Railways Corporation	2017	0.000484	12	0.5	0.166667	34	2.416667	11.87397	748,118
Kenya Railways Corporation	2018	-0.007332	10	0.7	0.3	24	2.7	11.87859	756,112
Kenya Railways Corporation	2019	-0.011153	14	0.857143	0.285714	35	2	11.88051	759,470
Kenya Railways Corporation	2020	-0.031756	15	0.733333	0.2	40	1.733333	11.8816	761,370
Kenya Railways Corporation	2021	-0.031813	12	0.583333	0.333333	25	2.416667	11.87974	758,119
New Kenya Co-operative Creameries Ltd	2016	-0.021124	10	0.7	0.2	8	2.8	10.06438	11,598
New Kenya Co-operative Creameries Ltd	2017	-0.046078	10	0.6	0.2	9	2.5	10.07529	11,893

New Kenya Co-operative Creameries Ltd	2018	-0.037814	9	0.666667	0.333333	11	3.222222	10.08322	12,112
New Kenya Co-operative Creameries Ltd	2019	-0.028216	10	0.5	0.2	8	3.2	10.10339	12,688
New Kenya Co-operative Creameries Ltd	2020	-0.018480	11	0.636364	0.272727	8	3.181818	10.13985	13,799
New Kenya Co-operative Creameries Ltd	2021	-0.008104	10	0.5	0.1	11	3.6	10.14054	13,821
Kenya Power and Lighting Company	2016	0.010137	9	0.666667	0.333333	17	3.777778	11.51062	324,056
Kenya Power and Lighting Company	2017	0.009634	9	0.666667	0.333333	12	3.555556	11.51049	323,960
Kenya Power and Lighting Company	2018	0.009835	8	0.75	0.375	16	3.875	11.52149	332,269
Kenya Power and Lighting Company	2019	0.000796	9	0.666667	0.333333	19	3.111111	11.51588	328,004
Kenya Power and Lighting Company	2020	-0.002887	9	0.666667	0.333333	12	3.666667	11.51224	325,267
Kenya Power and Lighting Company	2021	0.004485	9	0.666667	0.333333	11	4	11.52144	332,230
Kenya Ports Authority	2016	0.482120	12	0.583333	0.333333	12	2.666667	10.33367	21,561
Kenya Ports Authority	2017	0.427153	11	0.727273	0.272727	14	2.636364	10.39587	24,881
Kenya Ports Authority	2018	0.298281	12	0.583333	0.416667	11	2.833333	10.53855	34,558
Kenya Ports Authority	2019	0.328204	12	0.583333	0.333333	12	3	10.62643	42,309
Kenya Ports Authority	2020	0.334725	12	0.666667	0.25	13	3.5	10.38796	24,432
Kenya Ports Authority	2021	0.294309	12	0.666667	0.333333	14	2.583333	10.53219	34,056
Kenya Pipeline Company	2016	0.129324	9	0.777778	0.333333	6	3.111111	10.96942	93,200
Kenya Pipeline Company	2017	0.089559	10	0.7	0.3	7	2.7	11.10776	128,162

Kenya Pipeline Company	2018	0.090870	10	0.7	0.2	5	3.6	11.13363	136,030
Kenya Pipeline Company	2019	0.023956	10	0.7	0.4	4	3.4	11.13033	135,000
Kenya Pipeline Company	2020	0.047268	9	0.666667	0.444444	5	3.888889	11.08991	123,000
Kenya Pipeline Company	2021	0.054180	10	0.7	0.4	4	3.1	11.09765	125,213
Kenya Ordinance Factories Corporation	2016	0.086530	9	0.444444	0.111111	12	3.666667	9.748576	5,605
Kenya Ordinance Factories Corporation	2017	0.037420	10	0.5	0.1	13	2.8	9.749118	5,612
Kenya Ordinance Factories Corporation	2018	-0.049606	8	0.375	0.125	18	3.375	9.716087	5,201
Kenya Ordinance Factories Corporation	2019	-0.099768	10	0.6	0.1	16	3	9.712818	5,162
Kenya Ordinance Factories Corporation	2020	-0.139087	10	0.4	0.1	15	3.1	9.702431	5,040
Kenya Ordinance Factories Corporation	2021	-0.195523	9	0.555556	0.111111	18	3.111111	9.68744	4,869
Kenya Medical Supplies Agency	2016	0.000800	10	0.7	0.2	12	3.6	10.54391	34,987
Kenya Medical Supplies Agency	2017	0.001053	10	0.7	0.3	15	3.2	10.53384	34,185
Kenya Medical Supplies Agency	2018	0.002535	10	0.7	0.2	12	2.8	10.54546	35,112
Kenya Medical Supplies Agency	2019	0.002771	8	0.75	0.375	19	3.875	10.56601	36,814
Kenya Medical Supplies Agency	2020	-0.001515	9	0.666667	0.333333	12	3.111111	10.58292	38,275
Kenya Medical Supplies Agency	2021	0.002140	8	0.625	0.25	11	3.625	10.60911	40,655
Kenya Literature Bureau	2016	0.010654	10	0.6	0.2	6	3.2	9.798582	6,289
Kenya Literature Bureau	2017	0.032806	10	0.6	0.3	7	3.6	9.787248	6,127

Kenya Literature Bureau	2018	0.025951	11	0.636364	0.181818	6	3.181818	9.836261	6,859
Kenya Literature Bureau	2019	0.104081	11	0.545455	0.272727	7	2.909091	9.785401	6,101
Kenya Literature Bureau	2020	0.031388	12	0.5	0.25	6	2.916667	9.676419	4,747
Kenya Literature Bureau	2021	0.021236	10	0.6	0.2	8	3.4	9.75929	5,745
Kenya Electricity Generating Company	2016	0.018764	10	0.7	0.3	14	2.8	11.56496	367,249
Kenya Electricity Generating Company	2017	0.019356	12	0.583333	0.333333	17	2.833333	11.57453	375,430
Kenya Electricity Generating Company	2018	0.020839	11	0.727273	0.272727	18	3.272727	11.57444	375,353
Kenya Electricity Generating Company	2019	0.019639	12	0.75	0.333333	12	3.166667	11.60362	401,442
Kenya Electricity Generating Company	2020	0.044503	13	0.692308	0.384615	11	3.230769	11.61588	412,936
Kenya Electricity Generating Company	2021	0.046363	12	0.666667	0.416667	13	3.583333	11.6152	412,289
Kenya Broadcasting Corporation	2016	-0.315426	8	0.75	0.375	14	3.5	10.38043	24,012
Kenya Broadcasting Corporation	2017	-0.407198	10	0.7	0.2	12	3.6	10.34366	22,063
Kenya Broadcasting Corporation	2018	-0.414560	10	0.7	0.2	16	3.4	10.32397	21,085
Kenya Broadcasting Corporation	2019	-0.404219	9	0.666667	0.222222	18	4	10.3073	20,291
Kenya Broadcasting Corporation	2020	-0.554071	8	0.75	0.125	19	3.625	10.25426	17,958
Kenya Broadcasting Corporation	2021	-0.602624	10	0.7	0.1	10	3.1	10.21856	16,541
Kenya Airports Authority	2016	0.029440	16	0.5	0.3125	17	2.375	10.89298	78,159
Kenya Airports Authority	2017	0.034236	16	0.5625	0.3125	19	2.625	10.90406	80,179

Kenya Airports Authority	2018	0.035839	16	0.5625	0.25	21	3.0625	10.92059	83,289
Kenya Airports Authority	2019	0.035620	15	0.533333	0.2	14	2.4	10.93175	85,457
Kenya Airports Authority	2020	0.011080	16	0.4375	0.25	12	2.4375	10.89944	79,330
Kenya Airports Authority	2021	0.011953	16	0.4375	0.25	13	2.3125	10.90388	80,145
Jomo Kenyatta Foundation	2016	0.041107	11	0.727273	0.272727	12	3.272727	9.102091	1,265
Jomo Kenyatta Foundation	2017	0.094197	10	0.7	0.4	13	3.8	9.075182	1,189
Jomo Kenyatta Foundation	2018	-0.105263	12	0.75	0.25	12	3.25	9.049606	1,121
Jomo Kenyatta Foundation	2019	-0.164026	12	0.75	0.25	13	3	9.0306	1,073
Jomo Kenyatta Foundation	2020	-0.189504	12	0.75	0.333333	14	3.25	9.012415	1,029
Jomo Kenyatta Foundation	2021	-0.209486	11	0.727273	0.363636	15	3.818182	9.005181	1,012
University of Nairobi Enterprises and Services Limited	2016	-0.111952	4	0.25	0.25	9	7	7.399674	25
University of Nairobi Enterprises and Services Limited	2017	-0.185433	4	0.25	0.25	6	6	7.404834	25
University of Nairobi Enterprises and Services Limited	2018	-0.185714	4	0.25	0.25	7	6.5	7.4133	26
University of Nairobi Enterprises and Services Limited	2019	-0.211061	4	0.25	0.25	4	7.75	7.421604	26
University of Nairobi Enterprises and Services Limited	2020	-0.012252	4	0.25	0.25	5	5.5	7.418301	26

University of Nairobi Enterprises and Services Limited	2021	0.118774	4	0.25	0.25	8	6.25	7.416641	26
East African Portland Cement Company	2016	0.052409	10	0.5	0.2	11	2.8	10.40314	25,301
East African Portland Cement Company	2017	0.053771	10	0.5	0.2	16	3.1	10.43707	27,357
East African Portland Cement Company	2018	0.210542	9	0.444444	0.111111	12	4	10.57522	37,603
East African Portland Cement Company	2019	-0.089981	10	0.5	0.2	14	2.9	10.56278	36,541
East African Portland Cement Company	2020	-0.078633	10	0.5	0.3	12	3.9	10.54625	35,176
East African Portland Cement Company	2021	0.065183	9	0.444444	0.222222	13	3.777778	10.53959	34,641
Chemelil Sugar Company	2016	0.011804	10	0.4	0.3	19	3.2	9.626956	4,236
Chemelil Sugar Company	2017	-0.095980	10	0.4	0.4	14	3.9	9.646208	4,428
Chemelil Sugar Company	2018	-0.132671	11	0.363636	0.363636	13	3.818182	9.665393	4,628
Chemelil Sugar Company	2019	-0.108773	11	0.363636	0.363636	11	3.272727	9.773713	5,939
Chemelil Sugar Company	2020	-0.097160	11	0.363636	0.272727	16	4	9.779669	6,021
Chemelil Sugar Company	2021	-0.111645	10	0.4	0.3	15	4.8	9.765743	5,831
Agro-Chemicals and Food Company	2016	-0.192398	10	0.4	0.4	13	6.4	9.534026	3,420
Agro-Chemicals and Food Company	2017	-0.079343	12	0.333333	0.333333	16	5.75	9.555336	3,592
Agro-Chemicals and Food Company	2018	-0.086616	12	0.333333	0.416667	14	5.916667	9.568905	3,706
1.3636	2019	-0.136734	10	0.4	0.5	12	8.9	9.580126	3,803

Agro-Chemicals and Food Company	2020	-0.078928	12	0.333333	0.416667	12	4.833333	9.601082	3,991
Agro-Chemicals and Food Company	2021	0.042775	12	0.333333	0.416667	12	3.5	9.604334	4,021
South Nyanza Sugar Company	2016	-0.209598	11	0.818182	0.363636	9	3.181818	9.85034	7,085
South Nyanza Sugar Company	2017	-0.223111	10	0.8	0.4	11	2.9	9.852602	7,122
South Nyanza Sugar Company	2018	-0.334815	11	0.818182	0.454545	9	2.272727	9.799272	6,299
South Nyanza Sugar Company	2019	-0.226636	11	0.818182	0.545455	6	1.363636	9.777572	5,992
South Nyanza Sugar Company	2020	-0.301859	11	0.818182	0.454545	11	1.636364	9.739256	5,486
South Nyanza Sugar Company	2021	-0.364360	11	0.818182	0.454545	14	2.272727	9.690107	4,899
School Equipment Production Unit	2016	0.101887	6	0.166667	0.333333	5	3.5	8.423246	265
School Equipment Production Unit	2017	0.108108	6	0.166667	0.5	4	4.166667	8.4133	259
School Equipment Production Unit	2018	-0.021645	6	0.166667	0.5	4	4.666667	8.363612	231
School Equipment Production Unit	2019	-0.082192	6	0.166667	0.5	6	3.5	8.340444	219
School Equipment Production Unit	2020	-0.154639	6	0.166667	0.5	4	3	8.287802	194
School Equipment Production Unit	2021	-0.219251	5	0.2	0.4	5	5.4	8.271842	187
Postal Corporation of Kenya	2016	-0.012818	10	0.5	0.3	16	3.6	9.989094	9,752
Postal Corporation of Kenya	2017	-0.009097	11	0.545455	0.272727	12	2.909091	9.98064	9,564
Postal Corporation of Kenya	2018	-0.008904	11	0.545455	0.363636	14	3.454545	9.974696	9,434
Postal Corporation of Kenya	2019	-0.103393	11	0.545455	0.363636	13	4.090909	9.970486	9,343

Postal Corporation of Kenya	2020	-0.091007	11	0.545455	0.363636	18	3.545455	9.967782	9,285
Postal Corporation of Kenya	2021	-0.068705	11	0.545455	0.363636	19	3.727273	9.96028	9,126
Nzoia Sugar Company	2016	-0.223551	11	0.818182	0.181818	9	2.818182	10.05903	11,456
Nzoia Sugar Company	2017	-0.231713	10	0.8	0.2	11	3.2	10.07533	11,894
Nzoia Sugar Company	2018	-0.245035	11	0.818182	0.272727	6	2.545455	10.08586	12,186
Nzoia Sugar Company	2019	-0.255450	11	0.818182	0.272727	8	1.909091	10.09293	12,386
Nzoia Sugar Company	2020	-0.285165	11	0.818182	0.181818	7	2.181818	10.08686	12,214
Nzoia Sugar Company	2021	-0.296463	11	0.818182	0.181818	8	2.636364	10.0859	12,187

Appendix II: List of Commercial State Corporations

1. Agro-Chemicals and Food Company
2. Chemelil Sugar Company
3. East African Portland Cement Company
4. Gilgil Telecommunications Industries
5. Jomo Kenyatta Foundation
6. Kenya Airports Authority
7. Kenya Broadcasting Corporation
8. Kenya Electricity Generating Company
9. Kenya Electricity Transmission Company
10. Kenya Literature Bureau
11. Kenya Medical Supplies Agency
12. Kenya Ordinance Factories Corporation
13. Kenya Pipeline Company
14. Kenya Ports Authority
15. Kenya Power and Lighting Company
16. Kenya Railways Corporation
17. Kenya Safari Lodges and Hotels
18. Kenya Seed Company Limited
19. Kenya Wine Agencies
20. Kenyatta International Conference Center
21. National Cereals and Produce Board
22. National Housing Corporation
23. National Oil Corporation of Kenya

24. National Water Conservation and Pipeline Corporation

25. New Kenya Co-operative Creameries Ltd

26. Numerical Machining Complex

27. Nzoia Sugar Company

28. Postal Corporation of Kenya

29. Pyrethrum Board of Kenya

30. School Equipment Production Unit

31. South Nyanza Sugar Company

32. Telkom Kenya Limited

33. University of Nairobi Enterprises and Services Limited

Source: State Corporations Advisory Committee 2022

Appendix III: Plagiarism Report

November 22, 2022

EFFECT OF BOARD CHARACTERISTICS ON FINANCIAL PERFORMANCE OF COMMERCIAL STATE CORPORATIONS IN KENYA

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