CEO TENURE, BOARD CAPITAL AND FIRM FINANCIAL INNOVATION: EVIDENCE FROM FINANCIAL SERVICES SECTOR

BY

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DECLARATION

Declaration by the Candidate

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DEDICATION

I most sincerely dedicate this thesis to my dear parents: my late dad, Mr. Christopher Nthama Nzau and mum, Serah Mbulwa Nthama for their steadfast love, kindness and unwavering support at the transition of my studies to Doctor of Philosophy Degree. To my dear family, beginning with dear beautiful children – Dr. Christine Mbaika, Evelyn Njoki, Faith Ndinda, Joseph Kyalo and Malia Mwikali, thank you for your steadfast support and superb encouragement during the long-winded journey culminating to this doctoral thesis. With this daunting engagement now behind me, I will endeavor to become the best dad and trust that it is never too late to do so. To my dear lovely wife, Anne Syowai Nzau, your kindness to me has been unsurpassed and will redouble my efforts in an attempt to become the best life companion in the remaining days of my life. Last but in no way the least, to the almighty Lord, for continued grace, love and blessings without which it would not have been possible to come this far. I do not take this grace, love and blessing for granted and will forever be grateful.

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ABSTRACT

Firm financial innovation is key in enhancing financial performance and competitive advantage of financial services sector players. In response to recent trends in financial technology, firms have sought to find ways to improve financial innovations. However, there are limited empirical studies on effect of board capital on financial innovation. The general objective of this research was to ascertain the effect of CEO tenure on the relationship between board capital and firm financial innovation in the financial services sector in Kenya. The specific objective of this study was to establish the effect of board human capital (education, experience and functional diversity) as well as board social capital (interlocks, prestige and directors' relations with the CEO) on firm financial innovation. The study also sought to determine the moderating effect of CEO tenure on the relationship between board human and social capital and financial innovation in the financial services sector in Kenya. The study was guided by Agency, Resource Dependence, Human Capital, Social Capital, Upper Echelons, Stakeholder and Innovation Ecosystems theories. The study adopted positivism research philosophy to undertake the explanatory research using hierarchical regression models. The study targeted 90 firms in the financial services sector in Kenya and used questionnaires to collect data from 270 respondents, three from each qualifying firm. This study adopted Cronbach's alpha to determine the internal consistency and reliability of the Likert-type scales used in the research instrument. The validity of the instrument was measured through Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The findings showed that board of directors' education ($\beta=0.24$, $p=0.00$), board of directors' interlocks ($\beta=0.3$, $p=0.00$), board of directors' prestige ($\beta=0.29$, $p=0.00$) and board functional diversity ($\beta=0.21$, $p=0.01$) had positive and significant effect on firm financial innovation, while board of directors' relationship with CEO ($\beta=-0.17$, $p=0.01$) had negative and significant effect on firm financial innovation. CEO tenure enhances the relationship between board of directors' education and firm financial innovation of financial services sector ($R2\Delta=0.174$, $\beta=-1.93$, $\rho<0.05$). CEO tenure also enhances the relationship between board of directors' experience ($R2\Delta=0.039$, $\beta=0.6$, $\rho<0.05$) as well as the relationship between board of directors' interlocks and firm financial innovation ($R2\Delta=0.019$, $\beta=.58$, $\rho<0.05$). Finally, CEO tenure enhances the relationship between boards' functional diversity of directors and firm financial innovation of financial services sector ($R2\Delta=0.037$, $\beta=-0.44$, $\rho<0.05$). In the end, this study concluded that board of directors' education qualifications, prestige and interlocks enhance financial innovations. The results of this study suggest that CEO tenure enhances impact of board capital on firm financial innovation and is to be considered in leveraging on board human and social capital to drive financial innovation. This study recommends nomination to boards of directors of persons with at least one university degree, persons with prestige as well as persons sitting on other boards to drive financial innovations and further, to consider CEO tenure as it enhances the relationship between board human and social capital and financial innovation. This study makes two contributions to literature, finding support for board human and social capital theories and extending knowledge on the moderating effect of CEO tenure on the relationship between board human and social capital and firm financial innovation. Regarding policy, directors in the financial services sector should possess at least a university degree and be independent of the CEO.

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LIST OF ABBREVIATIONS AND ACRONYMS

CBK	Central Bank of Kenya
CEO	Chief Executive Officer
COC	Cost of Capital
CTA	Cash to Assets
DV	Dependent Variable
DY	Divided Yield
EPS	Earnings Per Share
ESRC	Economic Social Research Council
ETA	Expense to Assets
ETS	Expenses to Sale
IV	Independent Variable
KBA	Kenya Bankers Association
K-M-O	Kaiser-Meyer-Olkin
OCF	Operating Cash Flow
OECD	Organisation for Economic Co-operation and Development
PE	Price-Earnings Ratio
PM	Profit Margin
R&D	Research and Development
ROCE	Return on Capital Employed
ROE	Return on Equity
ROI	Return on Investment
ROS	Return on Sales

SACCO	Saving & Credit Cooperative Organisation
SASSRA	Sacco Societies Regulatory Authority
SPSS	Statistical Package for the Social Sciences
STS	Sales to Assets
TMT	Top Management Team
VIF	Variance Inflation Factors

OPERATIONAL DEFINITION OF TERMS

Board Capital: The sum of board human and social capital, Hillman & Dalziel, (2003), both of which are described below, separately.

Board Human Capital: The stock of directors' education, experience and skills that can be used to the benefit of the organisation, Haynes and Hillman, (2010).

Board Social Capital: The directors' ability to access resources through a network of relationships, Donald, *et. al*., (2024).

CEO Tenure: Number of years the CEO held that position in the focal institution, Makaryanawati, Azzardina & Haslinda, (2024).

Director interlocks: The extent of connectedness with other boards, as can be measured by counting number of directors sitting on boards of other companies which are listed in the securities exchange, Pfeffer and Salancik, (1978).

Education: Level of education attained by the directors, Wincent *et al.*, (2010).

Experience: Experience held by directors as employees or as directors of other banks, Chen, (2014).

Financial Innovation: New financial instruments that help manage financial risk, transfer risk, and manage credit and liquidity, Khraisha and Arthur (2018).

Firm age: Longevity of existence of the study subjects in terms of number of years the firm has existed.

Firm performance: Firm performance as measured by profit before tax as reported in the published financial statements.

Firm type: Firm categorisation into either of the 3 categories namely Commercial Banks, Micro Finance Banks or Deposit-taking SACCO

Functional diversity: Breadth of functional diversity in the board, as can be measured by counting number of professions represented on the board, Kusumastati, Siregar, Martani & Adhariani, (2022).

Innovation performance: The assessment of innovation performance as measured by directors on a 5-point Likert scale.

Personal / business relations with the chief executive or bank: Presence of directors' connections to the bank or chief executive

Status / prestige: Subjective evaluation by directors, of status and prestige of their board relative to other boards of directors, Johnson *et al.*, (2011)

CHAPTER ONE

INTRODUCTION

1.0 Overview

This first chapter introduces the thesis by presenting the background to the study, articulates the statement of the problem, lays down the objectives, hypotheses, significance as well as the scope of the research. Thereafter, chapter two discusses previous literature review. Chapter three lays down the research methodology, including details on the techniques used to collect the data and conduct the research. In chapter four, the researcher summarises the findings of the study, while the last chapter contains concludes the thesis and at the same time discusses the study's recommendations, theoretical and practical implications of the study as well as pointing on potential areas for further research.

1.1 Background of the Study

The effect of corporate governance on firm performance has received a lot of attention in the economic and finance literature in recent years, with a myriad of firm performance constructs being studied, including innovations. Technologies have yielded novel goods and services in financial services since the advent computer applications in businesses, to the extent of reaching the stage of disruptive innovations, such as mobile money payments, cryptocurrencies, and digitization of business assets, (Hendershott *et al*., 2021). Researchers have documented that over 70% of all mobile money transactions

worldwide in 2021 took place in Africa, where instant digital payment options continue to proliferate rapidly (Domingo & Teevan, 2022).

The banking systems in developed nations have witnessed and continue to witness ongoing change and enquiries on the main drivers of such disruptive changes would ordinarily and promptly yield or rather receive the following answers: trends in financial service demand; financial innovation (Yang, 2022). The banking sector is being significantly impacted by the swift development of technology in the financing sector (Cruz-García et al. 2021) and the services that are offered within the banking services sector have over the last decade continued to evolve in tandem with developments in and through financial technology. The financial performance of banks could potentially be improved by enhancing the revenue streams from charges that are surcharged to the banks' customers. These customers are surcharged and pay for the convenience experienced following their use of user-friendly, novel and easily accessible banking services that they initiate, execute and complete in the comfort of their homes.

The hypothesis on innovation - growth argues that innovations in the financial industry can shape and reshape the way services are offered in the banking or rather the financial services industry and further, that this can potentially diversify the goods and services available in the banking industry (Berger, 2003). This way, the financial innovations help in enhancing the overall growth in banks courtesy of enhanced delivery of banking services, and diversity, risk - sharing and efficiency (Lee, Sinha, Bae, & Lee, 2022). Financial innovations constitute the independent variable in this study.

Extant literature has demonstrated that banks that are domiciled in geographies or nations countries that have a relatively higher level of financial innovation seem to exhibit a superior acceleration of their asset base, loan book and profitability. It would thus be vital to a country to remain in step with developments in the financial innovations space for its overall financial system development which will in turn invariably strengthen the performance of their banking sector and provide a diversified portfolio of financial services and products. Overall, courtesy of financial innovation, financial services sector player are having to confront changes in their industry. Consequently, the financial innovations have rightfully become worthwhile areas of in-depth studies to ascertain their impact on banks (Wang & Cao, 2022).

Extant studies have demonstrated that firms are ready and willing to apply efforts in pursuit of financial innovations and that this is to a large extent attributable to fundamentals in corporate governance (board of directors). More specifically, a company with an excellent system of corporate governance may be able to improve its performance in terms of innovation (Balsmeier, Filatotchev & Wright, 2017). For example, in instances where there is a high proportion of shares in a business firm that are held by directors, it is likely that there will be goal congruence between those directors and the firm in terms of interests and this can potentially drive dedication of more resources to research and development and hence incremental financial innovation (Wang, Zhao, Chi, & Li, 2017). Furthermore, where there is a higher ratio of independent versus non-independent directors, the independent directors have been known to have more influence on innovation activities (Balsmeier et al. 2017). Existing

research has also demonstrated that higher levels of financial innovation positively drive in no trivial way the performance of banks (Cheng, 2018).

1.1.1 Financial Innovation

Innovation is defined as the process of generating novel technological know-how and bringing that know-how into productive use (Lodh, Nandy & Chen, 2014). Extant literature has laid claims pointing towards the vitality of the role played by innovation in increasing the success of a firm and frequently acknowledges it as a pivotal driver of superior firm performance, (Ngo & O'Cass, 2013). Digital firm financial innovations leverage or rather exploit digital technologies to provide and deliver financial solutions that help and facilitate businesses and organizations in running their business operations, (Hussain & Papastathopoulos, 2022). Financial innovations are used in this study as the independent variable.

Financial services sector services have in recent years evolved through financial technology and continue to evolve as businesses seek to harness these financial technologies in order to cost-effectively deliver services to their clientele. The performance of banks as well as other financial services sector players could potentially be enhanced by augmenting the revenue streams emanating from fees and other charges that are levied to the customers in exchange for the enjoyment of convenience of innovative financial goods and services or for getting and enjoying enhanced value-added banking products and services, (Wang, & Cao, 2022).

As Millennials and those in the immediate subsequent generation known as Generation Z enter the workforce, they seem to expect seamless touch points and experiences in their dealings and transactions with financial services sector players. To be more precise, these two generations want to be able to originate, undertake and complete their financial transactions in a cost-effective and convenient manner, just like they would when managing other service requirements like online shopping, Uber car service, or vacation reservations on their phones, (Nejad, 2022). The opportunity for the banks to reduce cost of service delivery using firm financial innovations is thus met by the needs of Millennials and Generation Z for convenience while undertaking their financial activities. Notably, Dospinescu, Anastasiei, & Dospinescu (2019) note that members of these two generations currently make up the bulk of the planet's active population: Generation Z (born between 1997 and 2012) and Generation Y (Millennials, born between 1980 and 1996). According to Nejad (2022), newer generations of customers have different requirements, needs and wants when compared to the earlier or rather older generations, and in particular, they seem to seek for creative solutions to meet their financial needs. Accordingly, the aspirations of these two non-trivial generations need to be integrated in firm strategy, and particularly so in firm financial innovations primarily due to the importance of financial services sector in economic development. In East Africa, Kenya pioneered the celebrated M-Pesa which is most widely used and most banks and financial institutions have integrated it into the financial services.

1.1.2 Board Capital

Persons sitting on corporate boards of directors perform multiple roles that include but are not limited to supply or availing their focal firm with the needed resources (Pfeffer & Salancik, 1978), searching, recruiting and hiring or rather employing the chief executive (Masulis & Xie, 2011) and supervising, keeping an eye on and advising management (Haynes & Hillman, 2010). Researchers increasingly give credence to the impact board capital has on firm financial innovation. In defining board capital, extant literature splits it into two key elements: human capital that encapsulates the knowledge base and skill sets obtained through practical work experience; and social capital, that is attributed to resources accessible through network of either personal or organisational relationships, (Tian, Haleblian & Rajagopalan, 2011). Board human and social are the predictor variables in this study.

However, empirical evidence in the extant literature on the connection between board capital and firm financial innovation is far from conclusive. To this effect, studies undertaken to ascertain the effect of board capital and firm financial innovation have generated mixed findings, with some showing positive effect and others showing nil or negative effect. For instance, studies on the effect of board education, functional diversity and experience, the three main constructs used in extant literature of human capital, on innovation, have yielded inconsistent findings, with some studies pointing to positive effect while others concluded there was nil or negative impact. For instance, contrary to expectation, Dalziel *et al*., (2011) concluded that advanced educational qualifications have a negative and significant effect on research and development

expenditure, a construct that is used for measuring innovation in most existing literature. Wincent *et al.*, (2010) findings suggest that directors with superior educational qualifications and other relevant skills are better able to make meaningful contributions to development of innovative and creative solutions in their organizations.

Accordingly, there are no unified scholarly findings on the impact of educational qualifications of directors. In the same vein, extant literature also finds similar disagreements regarding director interlocks, board prestige as well as personal connections to the CEO, constructs for social capital, on innovation. The absence of conclusive empirical link between board capital and innovation may stem from prior work not taking into account pertinent externalities that may affect the relationship, e.g., CEO tenure.

Although boards of directors play a key role in firm financial innovations, the strategy of their firms, such as allocation of resources to Research & Development expenditure, is influenced by the traits possessed by the top management team, more so the CEOs (Hambrick and Mason 1984; Hambrick 2007). Typical CEO characteristics and attributes that relate to one's age, gender, educational qualifications, duality and tenure are important factors in forming, shaping and reshaping the long term and strategic decisions of a firm, (Crossland, Zyung, Hiller & Hambrick, 2014). These traits and attributes are known to be key drivers of the CEO's perspectives and consequently affect the CEO's propensity to take risk (or rather risk disposition), cognitive power, knowledge base, and relative position power (Galbreath, 2018; Furlotti et al., 2019).

Based on Stakeholders theory, a company's leading financial innovation strategist and planner is often its chief executive officer (CEO), (Sheikh, 2018). The upper echelon theory (Hambrick and Mason 1984) provides an additional explanation for this. This theory suggests that CEO attributes, like CEO tenure, impact a company's strategic decisions and results (Hambrick 2007; Arena et al. 2018). Prior research has identified the CEO of an organization as one of the the most significant determinants of a firm's innovation performance, (Bereskin & Hsu, 2013). CEO attributes can therefore constitute a pertinent externality that may influence the connection between board capital and innovation. For instance, some scholars have argued that experimentation, a proxy for innovation declines during the tenure of a CEO, (Miller & Shamsie, 2001). A CEO with a relatively elongated tenure has a diminished propensity or rather appetite to invest in firm financial innovation (He, Ding & Yang, 2021). Hsu et al. (2020) discover that as their careers progress, CEOs—both agent and founder—invest significantly less in research and development. Agent CEOs get disconnected from the outside world and fall back on strategies that worked for them well in the past. Founder CEOs are at the end of their managerial endurance when it comes to ongoing financial innovation within the company. Thus, this study conceptualizes CEO tenure as a construct that may alter the connection between board capital and firm financial innovation. Prior to this study, no known research has determined the impact of CEO tenure on the connection that exists between board capital and firm financial innovation. This study extends knowledge by tracing the interactive effects of CEO tenure on the effect board capital has on financial innovation of firms.

Most studies on the effect of board capital on innovation have been undertaken in the developed world, Agyapong et al., (2019). In developed countries, Khan et al., (2019) observe that the results are different as compared to developing countries even though the studies are undertaken with the same theory and framework. Although the findings from studies undertaken in the developed world can be presumed to be applicable to firms in developing countries, it is imperative to replicate those studies in a developing country in order to confirm generalisability. In addition, prior studies on the impact of board capital on innovation were undertaken in and for large conglomerates, with Agyapong et al., (2019) observing that very little attention has been accorded to how innovation could play a significant role in the relationship between social capital and the performance of micro and small businesses. So as to confirm application of those research findings on small firms, it was also imperative to undertake research with small firms as study subjects. For the purposes of this study, Kenya's financial services sector was selected due to the significant innovations rolled out, as described in the following section.

1.2 Financial Services Sector in Kenya

Extant research on financial services has covered both traditional financial services and non-traditional financial services, including mobile money and nonbranch retail agent outlets, Gerth (2024). Since the earliest days of computer applications in organizations, technology has given rise to financial innovations. Most recently, disruptive innovations like mobile payments, cryptocurrencies, and the digitization of company assets have emerged (Hendershott et al., 2021). The financial industry has come up to be a breeding ground for new and disruptive goods and services, processes and business models, Nejad

(2022). In tandem, the financial services sector in Kenya, awash with mobile money applications is an attractive area for academic research especially in view of accentuated rate of adoption of financial services sector innovations.

In recent times, without considering costs related human resources, investments of financial resources behind technological advancements by commercial banks in Kenya is perhaps one of the most weightier cost items in the profit and loss and cashflow statements and most likely the fastest in terms of year-on-year growth, (Aduda and Kingoo, 2012), all arguably invested in support of rolling out innovative financial products and services. The Central Bank of Kenya, the industry regulator, notes that the increase in the deployment of technology-enabled products by commercial banks has primarily been occasioned by acute competitive moves by industry players leading them to attempt to roll out modern and cost-effective customer touchpoints in delivering cutting edge services aimed at defending and growing market share (Marfo-Yiadom & Ansong, 2012). The COVID-19 pandemic has catalysed the technological shift in the provision of financial services sector services. This is especially due to social distancing forcing customers and businesses to adopt virtual methods in order to respectively access and deliver customer service needs remotely (Nejad, 2022).

Investments in technology enable e-financial services sector that cost effectively takes financial services sector services closer to the customers and drive financial performance of banks. The opportunity for the banks to reduce cost of service delivery using firm financial innovations is met by the needs of Millennials and Generation Z for convenience while undertaking their financial activities. Notably, Dospinescu,

Anastasiei, & Dospinescu, (2019) observe that most of the population that is active in the planet is currently composed of members of two generations: Generation Y (Millennials - born between 1980–1996) and Generation Z (born between 1997 - 2012), and Kenya is no exception. Accordingly, the aspirations of these two non-trivial generations need to be integrated in firm strategy, and particularly so in firm financial innovations due to the relative significance of financial services sector in economic development of a country.

Using Kenya as an illustrative case, the nascent innovative business practices such as the mobile money revolution and related phenomena in the financial services sector have played a pivotal role particularly in fostering financial inclusion and promoting financial development, (Burns, 2015). The popular mobile money services introduced by Safaricom, one of the telecommunications firms in Kenya, was rolled out in Kenya in the year 2007 (Demombynes & Thegeya, 2012) and makes it possible for individual customers to store monetary value and process cash transmission transactions or rather payments using mobile telephones or other digitally enabled gadgets. Some of the most significant financial services sector innovations in Kenya include M-Pesa, M-Kesho, M-Shwari, M-Kopa and Pesalink. The most popular mobile money system in the world for person-to-person money transfers is M-PESA, (Rouse, Batiz-Lazo & Carbo-Valverde, 2023). MPesa (M for mobile and Pesa which in Swahili – the national language in Kenya means money), is a relatively small - valudigital payment method and storage of value system that is available for use on a mobile telephone (Burns, 2015). In Kenya, a vast majority of households use M-Pesa, with Dalton *et al*., 2017 estimating penetration at 95%. To provide context, and as a manifestation of pervasive adoption of the mobile

money technology, Burns 2014 estimated that M-Pesa transactions were in the region of US$24 billion in 2013, more than 50% of the gross domestic product of Kenya.

M-Kesho refers to the interest - earning and integrated mobile deposit and saving system that was unveiled into the Kenyan market by Equity Bank and Safaricom (Demombynes & Thegeya, 2012). M-Shwari, on the other hand refers to a bank account that offers savings and loans facilities to registered M-Pesa customers, (Cook & McKay, 2015). M-Kopa, another mobile money service seeks to provide micro - financed energy products in Kenya to registered M-Pesa customers, (Nique & Opala, 2014). The three mobile money products, over and above the baseline M-Pesa service are evidently the result of innovative mobile financial services sector service available in Kenya over the past few years. Pesalink (Pesa for money in Swahili), has been in use in Kenya to provide real time interbank money transmission services that are accessible to commercial bank clientele since July 2017, after about four months of commercially piloting the product in Kenya. The Pesalink transactions can be originated or rather initiated from mobile and other digitally enabled gadgets as well as computers as long as the customers have internet connection. These mobile money services that are an integral part of financial services sector in Kenya complement the Automated Teller Machines and agency banking. Notably, Pesalink takes less than a minute to complete the transaction from an end-to-end basis. Under Pesalink, it is possible for customers to transact amounts that range from Kshs. 10 up to Kshs. 999,999 at any one point in time. This service has enabled commercial banks to share innovative infrastructural developments to make it possible to deliver a wide array of cost effective and sufficiently secure banking services to the financial services sector community. Considering that the service had not been in

commercial operation for a long time (it had only recently been unveiled to the market), the researchers did not access publicly available statistics that could illuminate on the uptake of the service, in particular about statistics or data on the number of customers who had subscribed and started use of Pesalink and an indication of the volume of cash transacted using the platform.

Many commercial bank branches were forced to close down as a result of the Covid-19 Pandemic, forcing clients to seek to handle their financial services demands online or through other remote means. The unexpected result is that most future customers of commercial banks might never visit a bank hall or office; instead, they might as well take care of all of their financial services needs through creative financial solutions as may be availed to them by the banking sector players, (Nejad, 2022).

1.3 Statement of the Problem

Fostering innovation is imperative for banks to remain competitive, yet achieving this poses leadership challenges, Chimakati & Macharia, (2024). Innovation is a subject matter of interest to management and researchers that spans several academic fields. Firm financial innovation is key in enhancing financial performance and competitive advantage. The fast evolution and rapid development of new technology has awakened the need for financial sector players to reengineer, reinvent and adjust their conventional business models or face the wrath of their ever-demanding customer base. As a result, the progressive advancement has birthed successive banking formats, for instance the progression has seen a move from the more conventional brick and mortar or rather

physical branch (Bank 1.0) to Internet banking (Bank 2.0), mobile banking (Bank 3.0) and, finally, to banking everywhere (Bank 4.0) (King, 2018).

In reaction to the recent trends in financial technology advancement, the financial services firms have sought to find ways to improve financial innovations (Wang & Cao, 2022), to contemporaneously reduce operating expenses and the number of bank branches by implementing artificial intelligence systems. Khraisha & Arthur (2018) observe that the competition seen in the marketplace is evidently experiencing changes due to the innovations of Fintech start-ups that, in many cases, promise and deliver superior or rather better and safer customer services than traditional financial institutions.

This development creates a sense of urgency for boards of directors to ensure their businesses develop cutting edge innovations in order to become or remain competitive, provide best in class financial services and improve the performance of their companies. The influence board capital has on firm financial innovation has thus becomes critical and has in recent years attracted scholarly attention.

Another line of research has been to consider corporate governance as a key element for innovation (Talke, Salomo & Rost, 2010). However, the corporate body that has received the most attention when it comes to studying this link is the top management team (TMT), with several studies reporting a non - trivial and positive connection between TMT diversity and innovation (Chen, Bu, Wu & Liang, 2015; Talke et al., 2010). These findings can notably be explained by the capacity of heterogeneous groups to cope with the changes and consequences of breakthrough innovation (Lyon & Ferrier, 2002), by some managers attributes such as their education and professional experience (Bantel &

Jackson, 1989), as well as their functional expertise (Huffman & Hegarty, 1993). Thus, even if extant research studying the impact of TMT' diversity on innovation has not consistently supported the positive sign thesis (Daellenbach, McCarthy & Schoenecker, 1999), as it is the case for employees' diversity, the literature suggests that the positive link is the more plausible. These observations set the ground to direct our attention to another corporate body: the board of directors (BoD).

However, extant literature on impact of board capital on financial innovation has yielded or rather generated mixed results, with some findings pointing to negative or positive or no effect. Regarding board diversity, for instance, extant research widely points that board diversity could impact corporate innovation, without sufficient clarity on the direction of such an impact, (Abtahi, Chkir, & Benkraiem, 2023). While it is true that having a diverse board of directors broadens their skillsets and the quantity and quality of information at their disposal, which in turn encourages innovation, board diversity may also have a negative impact on the integration process that is necessary when making decisions pertaining to innovation (Abtahi, Chkir, & Benkraiem, 2023).

Although some studies found functional diversity to be beneficial to innovation, (Wincent *et al*., 2010), extant literature calls for additional investigation to ascertain when diversity can be advantageous and when it cannot, (Haynes and Hillman, 2010). This is perhaps so because board diversity may give rise to divergence of opinions, which can be viewed as a two-sided coin: with one side being the potential for creation of board conflict and the other the propensity to enrich debate. Therefore, it is not clear whether board diversity is important to firms that would like to pursue innovation.

Board education was found to have a non - significant effect on administrative innovation (Bantel and Jackson, 1989). Studies investigating the impact of the educational qualifications of directors on research and development expenditure, one of the methods used in extant literature to operationalize innovation found a negative relationship (Dalziel *et al*., 2011). Other studies found a significant effect of advanced education of directors on innovation, (Subramaniam and Youndt 2005, Chen, 2014 and Wincent *et al.,* 2010). With such contradictions appearing in extant literature, often, authors have advocated for additional investigations to help illuminate or rather clarify the impact of, for instance, experience, another construct of board human capital on firm outcomes, (Johnson *et al*., 2013). In view of the conflicting findings on the effect of educational qualifications of directors on innovation, this research sought to resolve the tension by undertaking quantitative research in the Kenyan financial services sector.

Under resource dependence theory, directors of companies provide resources – financial and otherwise, from contacts that are external to the focal firm potentially enabled by social interaction, which is enabled by social capital, (Pfeffer and Salancik, 1978). This interaction potentially generates exchange of resources that are beneficial and which in turn may advance innovation (Chen, 2014). Director interlocks, often used interchangeably with social capital can cause in or outflow of information resources consequently providing advantages (Rass *et al*., 2013), but can at the same time enhance the level of demand for attention, time and efforts of directors often at the peril of the companies where they serve as directors (Masulis *et al*., 2012). In such a scenario, these interlocked directors may not sufficiently apply themselves fully due to time, capability and other related constraints. Director interlocks, which occur when directors sit on

boards of two or more firms help firms get linkages to other companies or industries, thereby accessing information and other resources, (Kor & Sundaramurthy, 2009). With these conflicting points of view that interlocks can make directors too busy to be effective on one hand, and that the same interlocks can enable firms access information and other resources on the other makes it unclear whether connectedness of directors is important to firms that would like to pursue firm financial innovation.

Thus, this study looked at effect of board capital (board of directors' education, board of directors' experience, board of directors' functional diversity, board interlocks, prestige of the board of directors and directors' relations with the CEO) on firm financial innovation as moderated by CEO tenure. This study has a novel approach by examining the impact of board capital on innovation, a non-financial variable, in contrast to most other studies that primarily examine impact of board capital on financial variables only. This study is probably the first to look into how CEO tenure modifies, if at all, the association between board human and social capital and financial innovation in firms. This research is novel because it investigates how CEO tenure affects the relationship between board capital and business financial innovation, particularly in Kenya's banking sector.

1.4 Research Objectives

Under this study, general as well as specific objectives were formulated with a view to answering the research question. These objectives are outlined here below.

1.4.1 General objective

The general objective of this research was to test the moderating effect of CEO tenure on the relationship between board capital and firm financial innovation in the financial services sector in Kenya.

1.4.2 Specific objectives

The specific objectives of this study were to:

1. Establish the effect of board of directors' education on firm financial innovation in the financial services sector in Kenya.
2. Analyse the effect of board of directors' experience on firm financial innovation in the financial services sector.
3. Determine the effect of board of directors' functional diversity on firm financial innovation in the financial services sector in Kenya.
4. Ascertain effect of board interlocks on firm financial innovation in the financial services sector in Kenya.
5. Analyse the effect of prestige of the board of directors on firm financial innovation in the financial services sector in Kenya.
6. Determine the effect of directors' relations with the CEO on firm financial innovation in the financial services sector in Kenya.

7a. Determine the moderating effect of CEO tenure on the relationship between board of directors' education and firm financial innovation in the financial services sector in Kenya.

7b. Assess the moderating effect of CEO tenure on the relationship between board of directors' experience and firm financial innovation in the financial services sector in Kenya.

7c. Examine the moderating effect of CEO tenure on the relationship between board of directors' functional diversity and firm financial innovation in the financial services sector in Kenya.

7d. Determine the moderating effect of CEO tenure on the relationship between board of directors' interlocks and firm financial innovation in the financial services sector in Kenya.

7e. Establish the moderating effect of CEO tenure on the relationship between prestige of the board of directors and firm financial innovation in the financial services sector in Kenya.

7f. Analyse the moderating effect of CEO tenure on the relationship between board of directors' relations with the CEO and firm financial innovation in the financial services sector in Kenya.

1.5 Research Hypotheses

Under this study, twelve hypotheses were formulated with a view to answering the research question. These hypotheses are outlined here below.

H_{01}: Educational qualifications of directors have no significant effect on firm financial innovation in the financial services sector.

H_{02}: There is no significant effect between board of director's experience and firm financial innovation in the financial services sector in Kenya.

H_{03}: There is no significant effect between board of directors' functional diversity and firm financial innovation in the financial services sector in Kenya.

H_{04}: There is no significant effect between board of director's interlocks and financial innovation in the financial services sector in Kenya.

H_{05}: There is no significant effect between board of director's prestige and financial innovation in the financial services sector in Kenya.

H_{06}: There is no significant effect between board of director's relations with the CEO and firm financial innovation in the financial services sector in Kenya.

H_{07a}: CEO tenure does not moderate the relationship between board of director's education and firm financial innovation in the financial services sector in Kenya.

H_{07b}: CEO tenure does not moderate the relationship between board of directors experience and firm financial innovation in the financial services sector in Kenya.

H_{07c}: CEO tenure does not moderate the relationship between board of directors' functional diversity and firm financial innovation in the financial services sector in Kenya.

H_{07d}: CEO tenure does not moderate the relationship between board of director's interlocks and firm financial innovation in the financial services sector in Kenya.

H_{07e}: CEO tenure does not moderate the relationship between board of director's prestige and firm financial innovation in the financial services sector in Kenya.

H_{07f}: CEO tenure does not moderate the relationship between board of director's relations to the CEO and firm financial innovation in the financial services sector in Kenya.

1.6 Significance of the Study

Findings from this study provide some of the core evidence supporting the selection of board members in possession of superior board capital. The significance of this research lies in its potential to inform shareholders and directors of a company as well as the industry regulators regarding the moderating effect of CEO tenure on the relationship between board human and board social capital and firm financial innovation. This research provides practical insight to practitioners and regulators on firm financial innovations in the context of board capital. Empirical evidence on the role played by board capital in firm financial innovation was hitherto this research inconclusive. For instance, there was no consensus on role played by board education, director interlocks and functional diversity of directors in firm financial innovation. Furthermore, prior to this study, there was no known research that had conclusively determined the moderating effect of CEO tenure on the relationship between board capital and firm financial innovation. This study, therefore, helped shed light on the role played by board capital in firm financial innovation. Also, this study has illuminated the effect of CEO tenure on the relationship between board capital and firm financial innovation.

Other than expanding scholarly knowledge, this study has provided insights for development of policy framework for the local financial services sector, which is undergoing a technological shift, by providing practical policy guidance that can further spur financial services sector development. The regulators, can, for instance enact guidelines on minimum educational qualifications of directors of financial services sector firms. The nominations committees, the board committees responsible for recruitment of directors also stand to benefit from this study. This is because the committees would be well guided on what attributes to look for in directorship candidates, should they wish to pursue an innovation strategy in their banks. Investors and shareholders as well stand to benefit from this study, as they would be well informed on the desired characteristics of the individuals they approve for appointment to be board members in the companies they have invested in.

This research illuminates the role played by CEO tenure on the impact of board capital on firm financial innovations. The nominations committee, the board committee that is responsible for recruitment of CEO also stands to benefit from this study. This is because the committees would be well guided on the role the CEO tenure plays in moderating the impact of board human and social capital on firm financial innovation. Investors, institutional managers and shareholders as well stand to benefit from this study, as they would be well informed on the role of CEO tenure on the impact of board capital on firm financial innovations in the companies they have invested in. The timing that a new CEO is expected to begin to deliver firm financial innovations will be decided upon with the findings of this study in mind.

This study's findings benefit investors by providing them with knowledge on which board human and social capital attributes are likely to increase or decrease firm financial innovation of commercial banks and other players in the financial services sector. This study also helps investors to make prudent investment decisions regarding stock investments and which firms to buy shares from.

This study contributed to the board human and social capital literature by providing more insights about the relationship between the two variables, human capital and firm financial innovation as well as the moderating effect of CEO tenure. The study also sheds light to scholars and future researchers on gaps that require further investigations. From the study, scholars are able to evaluate the impact of board human and social capital on firm financial innovation and establish whether CEO tenure increases or decreases the strength of that relationship. In summary, this study incrementally adds a substantial body of literature to the existing knowledge which can be used in future research and critical examinations of board capital as well as firm financial innovations.

1.7 Scope of the Study

The scope of the study refers to the parameters under which the study was conducted principally because the problem which the study seeks to resolve invariably fits within certain parameters. Empirical evidence in extant research on the role played by board capital in firm financial innovation was hitherto this research inconclusive. For instance, there was no consensus on role played by board education, director interlocks and functional diversity of directors in firm financial innovation. Furthermore, prior to this study, there was no known research that had conclusively determined the moderating

impact of CEO tenure on the relationship between board capital and firm financial innovation. This study, therefore, helped shed light on the role played by board capital in firm financial innovation. Also, this study has illuminated the impact of CEO tenure on the association between board capital and firm financial innovation.

The scope of this study included the financial services sector in Kenya. In the promotion of financial inclusion, which means the process of including the unserved and underserved in the formal financial system, Yap et al., (2024) observe that policymakers have primarily focused on banks, digital finance, and micro-finance. Guided by this focus by the policymakers, the scope of this study was limited to banks, digital finance, deposit-taking SACCOs and micro-finance institutions. With the proliferation of mobile banking that has been widely adopted by the various financial services sector players, the sector was deemed a fertile area of study. In 2021, for instance, a significant 70% of the total amount in value of global mobile money transactions were processed in continental Africa with the continent experiencing a rapid adoption of digitally enabled instant payment solutions, (Domingo & Teevan, 2022). Kenya, home to the celebrated M-Pesa, the East African country where mobile money is most widely used was selected as the scope of this study.

The rapid adoption of digitally enabled financial innovations in Kenya has made the banking sector an ideal subject for scholarly investigation. These days, commercial banks in Kenya have been investing in technology more than any other line item, with the exception of human resource expenditures (Aduda and Kingoo, 2012). These investments are presumably all focused on innovations. The fierce competition that has

forced banks to seek to deploy cost-effective route-to-market solutions for providing financial services in order to ensure efficiency and grow market share has, according to the industry regulator, the Central Bank of Kenya, been the primary driver of the increase in technology use by banks (Marfo-Yiadom & Ansong, 2012).

These investments in technology enable e-banking that takes banking services closer to the customers and drive the financial performance of banks. Using Kenya as an illustrative case, the emergence of entrepreneurial ideas such as the mobile money revolution and agent banking have been crucial in advancing financial development and financial inclusion, (Burns, 2015). Furthermore, over and above the vital research and policy questions touching on the banking industry, the study of innovations in the industry is also advantageous due to relative abundance of high-quality data that is easily available on firms in this industry.

The target population for this study was all the forty-three commercial banks in Kenya, (Omwansa & Waema, 2014), all the nine Micro Finance Banks (MFBs) as well as top tier deposit taking SACCOs (thirty-eight). Out of the 215 deposit-taking SACCOs as reported in SASSRA's annual SACCO supervision report at the time of data selection, thirty-eight were included in the scope of this study, after setting a cutoff threshold of Ksh 3 billion in assets and deposits. The choice of Ksh 3 billion threshold was to have the effect of choosing deposit-taking SACCOs that are comparable in size to the commercial and microfinance banks.

This explanatory research relied on both primary and secondary data for which multiple regression analysis was performed. Before this research, most studies on the association

between board human and social capital on firm financial innovations have been done in the context of the developed world, yet these relationships need to be re-studied in the backdrop of developing countries given the differential theoretical foundations across contexts. Perhaps as a result, despite Africa taking a pioneering and leadership role in mobile money innovation, experiencing a pronounced level of advancement in financial technology as well as having a booming entrepreneurial activity, extant literature does not adequately address the trajectory of Africa's financial technology ecosystem, (Molla & Biru, 2023). Although the resultant findings of the studies undertaken in the context of the developed world can be presumed to be applicable to firms in developing countries e.g. Kenya, it is imperative to replicate those studies in developing countries to confirm the application of those study results. In addition, most of those prior studies were undertaken in the context of large conglomerates. To confirm the application of those study findings in the context of small firms, such as most of those found in developing countries, it was also imperative to replicate those studies on smaller firms.

In addition, most of the studies investigating the impact of board capital on innovation have relied on secondary data and some included recommendation for alternative ways of gathering data. This research has answered that call by collecting data from the financial services sector in Kenya.

Mobile money services constitute a major retail financial service availed by telecommunication firms as well as formal banking institutions in multiple countries in Sub-Saharan Africa (Twum *et. al,* 2023), and more so in Kenya. Kenya's financial services sector was selected due to presence of significant innovations rolled out in a

developing economy and the industry players are deemed to be small to medium size when compared to most study subjects in the developed world. The research deemed Kenya, pioneer for mobile money (Johnen, Parlasca & Mußhoff (2023) as an ideal geographic scope because mobile money has been adopted as an invention that eliminates the need for a bank account and enables mobile phone users to deposit, transfer and withdraw or otherwise access money for transaction purposes.

The structure of the rest of this thesis is laid out as follows. Literature review is included in chapter two and it includes the theoretical analysis underpinning this study as well as the conceptual framework. Research methodology is included in chapter three while data analysis is laid out in chapter four. The debate and policy consequences are in chapter five with conclusion and areas of further research shown at the tail end of the thesis.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter delves into recent literature on firm financial innovation, board capital and related empirical studies that have been undertaken.

2.1 Concept of Firm financial innovation

Past several research investigated and concluded that innovation enhances firm performance and furthermore, that financial innovation influences business performance in a beneficial way, (Abbas, et al., 2024). Innovation plays a significant part in the growth and sustainability of businesses, (Zahra, 1996), but its benefits can often only be seen in the long rather than short term, (Lee and O'Neill, 2003). Innovation of goods and services that have recently incorporated modern day technology are an important determinant of long-term success of business enterprises. The concept of innovation has attracted the interest of decision makers as well as researchers for a long time, due to the economic benefits that accrue from innovative goods and services.

Since the 2008 financial crisis, the discipline of innovations in the banking industry has received more attention—possibly rightfully so. Even while financial innovations' advantages to the real economy are well acknowledged in the literature, the 2008 financial crisis elevated financial innovation to a critical topic during a period of re-evaluation and reconceptualization (Greenwood and Scharfstein, 2013). According to

some scholars, the 2008 financial crisis was caused in part by the apparent abuse or misuse of financial innovations (Boz and Mendoza, 2014). According to Henderson and Pearson (2011), other scholars looked into what was subsequently dubbed the "Dark Side" of financial innovations. Allen (2001) observed that empirical evidence indicates that financial innovation does increase the intricacy of transactions and this in turn does provide opportunities to explore questions of interest of consumers of financial services.

The meteoric rise of the digital economy has been largely driven by technologies that include but are not limited to the Internet, artificial intelligence, and cloud computing and these have had a profound effect on industrial development and consequently, economic growth, (Guo, Li, Wang & Mardani, 2023). For business firms to survive and be competitive in the context of today's competitive markets, firms have little or no option than to innovate for the long rather than short term, deliver innovative goods and services in their existing product and service portfolio, and continuously evolve and reinvent their customer value propositions as well as business models through innovation.

The body of research affirms the significance of innovation for business success and often lists it as a critical component of higher firm performance, (Ngo & O'Cass, 2013). With innovative goods and services, market players can gain competitive advantage, expand their revenues, control their expenditure and accordingly deliver superior financial performance relative to their competitors. These novel goods and services or rather innovations avail business firms new space and opportunities to reach out to, interact and engage with their target audience in the market, collate invaluable data and insights and consequently remain on top of the competition, (Jung & Shegai, 2023).

Innovation in business firms is acclaimed to be the most feasible route for accessing new markets with a view to widen their market reach and possibly expand their market share as well as increase competitive advantage, (Samad, 2020). Financial innovations from digital firms leverage digital technologies to provide solutions that help organizations run their operations (Hussain & Papastathopoulos, 2022). New financial tools that aid in managing credit and liquidity, financial risk, and risk transfer are referred to as financial innovations. Product and process innovations—which are dependent on the demands of the various countries' economic systems—are used to implement these financial innovations (Huo et al., 2022).

Financial services sector players have recently deployed digital solutions in delivery of financial services to their clientele. These firm financial innovations have played a pivotal role in the world of business and in the daily lives of consumers by transforming how financial transactions are handled, and especially so after Covid-19 pandemic, (Nejad, 2022). Consistent with Crossan and Apaydin (2010), innovation is defined as the creation or adoption, assimilation and exploitation of a value-added novelty in the economic and social spheres; renewal and expansion of products, services, and markets; development of new production methods and establishment of new management systems; and further, that it is both a process and an outcome. This definition was reached after an exploration of peer-reviewed journals that were published during a 27-year consecutive period between the years 1981 and 2008.

This study conceptualises innovation as a characteristic of the organisations that generates novel technological know-how and deploys the knowledge to productive use,

(Lodh *et al.,* 2014). Furthermore, this study also conceptualises innovation performance as a business firms' ability to roll out innovations and create value through novel ideas, business processes, marketable goods and services (Sharma, 2019). This study utilises this literature by adopting the conceptualisation of firm financial innovation in the financial services sector in which novel methods of making financial services available have been generated with use of available technology. Firm financial innovation of financial services sector players is therefore the lone dependent variable in this explanatory study.

The classic division of technological progress into three phases by Austrian economist Joseph Schumpeter is as follows: invention (the development of new technologies); innovation (the commercial launch of new technologies); and diffusion (the dissemination of new technologies) (Arthur, 2009). This study focused on innovation in Kenya's financial services industry service delivery. It is necessary to define the term "firm financial innovation" in order to comprehend the firm financial innovation process. Firm financial innovation is described by Khraisha and Arthur (2018) as innovation in the financial services sector. This type of corporate financial innovation involves introducing new or qualitative changes to markets, organizations, input sources, goods, processes, and marketplaces.

Effiom and Edet (2022) identified seven firm financial innovation instruments used in their study of the association of the performance of small and medium-sized enterprises in Nigeria to firm financial innovation. These instruments include the Nigeria Inter-Bank Settlement System Instant Payment, Cheques, Automated Teller Machines, Points of

Sales, Web or Internet Financial Services sector, and Mobile Money Operations. The literature currently in publication has identified additional firm financial innovations, which have been introduced mainly by the traditional or rather conventional financial institutions that have integrated technological advancements into the services offered to their clientele. These innovations include platforms and mobile apps like PayPal and Chime, online payment systems, virtual currencies, robo-advisors, and peer-to-peer lending (Nejad, 2022).

Due to the continent's youthful population, absence of legacy institutions and perceived or real potential for doing business, lately, businesses and investors have expressed their elevated interest in Africa in terms of firm financial innovations (Rooney, 2020). Thus, there are many chances for study on business finance innovations in developing nations, like Kenya (Nejad, 2022). This research is one of those opportunities.

2.2 Concept of Board Capital

As the highest level of an organization, boards of directors have drawn interest from both researchers and policy makers. According to Dong, Liang, and Wanyin (2023), the board room of a company is thought to be the apex, or rather the ultimate body in charge of oversight, monitoring, and decision-making. The construct of board capital includes social capital, which is a network of relationships with other businesses and external contingencies, and human capital, which is experience gained on the job, functional expertise, and reputation (Hillman & Dalziel, 2003). Access to knowledge configurations that assist board members to comprehend difficult content allows them to make better recommendations (Javeed et al., 2023).

Board capital, according to Hillman and Dalziel (2003), is the total of social and human capital of corporate boards. The human capital of a board is made up of the knowledge and skill sets that directors individually and collectively bring to the table, as well as the education and experience they have invested in both inside and outside the company (Wincent et al., 2010; Kor & Sundaramurthy, 2009). On the other hand, according to Ricci, Scafarto, Moscarini, and della Corte (2019), social capital is the sum of all actual, demonstrable, and prospective resources that are an integral part of, accessible through, and generated from a person's or a social unit's network of interactions.

According to Pérez-Calero et al. (2016), board human capital, external social capital, and internal social capital are all essential for building the board's capabilities, which in turn allow it to effectively carry out its mandated obligations and perform its roles and functions. Collectively, these resources are referred to as "Board Capital" (Haynes and Hillman, 2010). More specifically, the board provides essential resources (experience, data, and knowledge about the company) through human and social capital. Because of the relationships and cooperation among board members that provide the internal social capital, the board may be able to use these resources more constructively.

Internal social capital is a type of social capital that concentrates on the qualities that promote internal cohesion and ease the pursuit of group objectives. It crystallizes and strengthens bonds. (Adler and Kwon, 2002). Having access to important resources does not ensure that they will be mobilized and used to their fullest potential during board discussions and, ultimately, decision-making processes. The ability to share, pool, or rather combine and utilise the collective knowledge, experiences, and resources from

outside of the organisation that the board has access to courtesy of human capital stocks as well as the external social capital of all the board members occurs when the board collaboratively operates as a cohesive and united group with close and beneficial ties to a greater degree.

Human capital, which includes experience, skill, reputational and relational capital, which also includes a network of connections to other businesses and outside variables, make up board capital (Hillman & Dalziel, 2003). The concept of board capital is meant to represent the capacity of the board of directors to supply or make resources accessible to the company (Hillman and Dalziel, 2003). The term "composite of" refers to the combined personal and social capital of a commercial firm's board of directors. Existing research highlights how the fundamental human and external social capital conceptions are mutually dependent (Haynes and Hillman, 2010), meaning that one cannot be potentially used without the other.

Corporate boards use board capital to fulfill and execute their responsibilities for resource provision, oversight, and monitoring (Haynes & Hillman, 2010). According to Carter et al. (2010), boards of directors have four major responsibilities: first, they hire and oversee managers; second, they provide information; third, they advise the firms' management cadres; and fourth, they connect the company with the outside world. Despite the perception that corporate boards are homogeneous groups, anecdotal evidence and the body of existing research indicate that certain directors have significantly more influence and power than others for a variety of reasons (Hambrick et al., 2008).

Individual corporate directors may differ from their colleagues in a variety of significant ways, including knowledge, educational background and professional experience, hands-on industry experience, social and political connections, insider status, gender, and race (Ferreira, 2007). These differences may be capitalized upon to give the focal firm a competitive edge that is worth immeasurable sums of money. The use of concepts like board education (Wincent, Anokhin & Örtqvist, 2010; Chen, 2014; Bantel & Jackson, 1989), board functional diversity (Wincent et al., 2010; Yang, 2014, Jackson, May & Whitney, 1995), and board experience (Chen 2014; Johnson, Schnatterly & Hill, 2013) is revealed by a review of the body of existing literature on human capital.

Research and investment, two potentially key factors that determine a firm's capacity for innovation, may benefit greatly from the presence of both board human and board social capital (Chen, 2014). In order to improve the generalizability of the study findings, researchers such as Chen (2014) suggested that future investigations expand their examination outside the field of Taiwanese electronics to encompass a variety of industrial settings and geographical locations.

Notably, Chen (2014) depended on secondary data for their study, and they recommended that future studies examine the use of different approaches for data collection. This academic study logically seeks to expand on previous research, as suggested by Chen (2014), by examining board human and social capital in financial services industry in Kenya and, moreover, by employing primary data. In summary, this research utilizes the literature to define board human and social capital as constructs that have received the much-needed scholarly attention. It also offers guidance on the

practical operationalization of these constructs and, to a large extent, prising open scholar's recommendations for further research (Chen, 2014), all of which are taken into consideration when taking board capital research forward.

To the best of our knowledge—and particularly in Kenya—no research has demonstrated the impact of board human and social capital on business financial innovation, which is a vital source of competitive advantage. This study made a rational effort to fill this information gap and produce fresh insights into how board human and social capital affects financial innovation within the company.

2.3. Concept of CEO Tenure

In business firms, the role of the CEO is the most crucial in terms of conceiving, shaping and progressing various strategic agenda items and policies, (Heriyanto, 2024). Furthermore, the CEO is also widely known to be one of the key pillars in the firm’s governance mechanisms that plays a fundamental role in guiding the company's strategies, (Aldaoud, 2023). The CEO, being the person at the helm of a company is responsible to the board of directors for the operational aspects or rather of running the day to day activities of the organisation. Based on this premise, it is essential to deepen the understanding of various CEO characteristics so as to have a 360-degree view of how the CEO may impact innovations, our dependant variable.

Extant literature has delved into whether innovations are fostered or more pronounced when CEOs have longer career horizons, (Ahmad, Farag & Wang, 2023). Additionally, CEOs can be quite important in the operations and decision-making of their companies,

(Sun, Cappa, Zhu & Peruffo, 2023), making it important to incorporate the CEO in this study to ascertain whether they have effect on firm financial innovations.

According to Shui, Zhang, Smart, and Ye (2022), previous research has examined the factors influencing innovation from the viewpoint of important decision-makers who support overall innovation inside the company, with the key actors including owners, CEOs, and boards of directors. The traits and experience of the CEO in no trivial manner influence the decisions that CEOs make, which thus affects the effectiveness of the company, (Zavertiaeva & Ershova, 2022), including corporate financial innovation. The CEO's tenure serves as one among many indicators of CEO characteristics, as per the upper echelon theory (Heriyanto, 2024), with other characteristics being duality, nationality, gender, tenure, turnover, and ownership, (Ibrahim & Yahaya, 2024). For instance, CEOs who are in earlier stages of their tenure are more likely to immerse themselves in long-term investment initiatives because they can gain from them later in their career and because they have a longer time horizon (Chen et al., 2019).

The tenure of CEOs, operationalised as the duration a person occupies the executive role at the helm of the focal firm has a vital role in CEO research (Finkelstein et al., 2009). The tenure of CEOs is in extant literature considered as one of the most vital characteristic due to the influence it can have on a firm’s business decisions and therefore, performance, (Almulhim & Aljughaiman, 2023). CEOs who have long tenures in their firms might potentially have more power and influence to take the right decisions, strategic choices and deploy more efficient tactics that could aid the firm to perform better in any of the desired business objectives, including innovations. This is perhaps so

because they can also accumulate incremental quantities of firm-specific expertise and skillsets in addition to getting an in-depth awareness of the firm's capabilities, management, and culture. This, in turn, can aid the firm in embracing the firm's strategy and the attendant strategic goals.

Extant literature, for instance the seminal paper by Hambrick and Mason (1984) identified "CEO tenure" as a distinct observable characteristic that can potentially predict both the "givens and behaviours" of CEOs during the time they occupy the top executive role in the focal firm. Tenure is defined as the length of time during which a member of a board of directors of a company has been retained in the employ of an organization, (Makaryanawati, Azzardina & Haslinda, 2024).

CEOs have the responsibility to make decisions that can potentially impact their companies' fortunes and destinies (Hambrick & Fukutomi, 1991; Miller, 1991). Over an extended period of employment, the CEO establishes strong social connections with the board of directors, which can lead to improved communication between the board and upper management, (Zavertiaeva & Ershova, 2022). Thus, gaining a thorough and perceptive grasp of CEO tenure is essential to understanding the duties and behaviors of CEOs generally..

It should come as no surprise that management, accounting, and finance scholars have given CEO tenure a great deal of attention. The phases of CEO tenure were the subject of early conceptual and procedural investigations (Graham et al., 2020). Building on these studies, researchers in both fields have looked at a range of topics related to CEO

tenure, such as CEO-related factors like commitment and motivation (McClelland et al., 2010); compensation (Taylor, 2013); and decision-making (Ali & Zhang, 2015).

Previous research has also examined the relationships between CEO tenure and different outcomes, or rather results, at the individual and company levels. Examples of these outcomes include performance, strategic change, and innovation (Simsek, 2007; Miller, 1991, Miller & Shamsie, 2001). However, to the best of our knowledge, no studies have been done on how CEO tenure modifies the association between board capital and financial innovation in firms. Furthermore, CEOs are the pivotal in harnessing board capital from the board members. With the CEO tenure impacting CEO's propensity to undertake innovations, this study identified that it was pertinent to include CEO tenure in the investigation aimed at establishing the impact of board capital on firm financial innovations.

The concept of the CEO tenure has generated a lot of attention, but there are other knowledge streams that focus on different aspects of CEO tenure. These knowledge streams, which include management and accounting and finance, build on a variety of assumptions, theories, and methodologies. Studies on CEO tenure encompass a wide range of issues, even when researchers come from different fields or are inside a common field. For instance, leadership academics concentrate on career topics, whereas scholars from strategy stream concentrate on outcomes of CEO tenure (Boeker, 1997; Miller, 1991; Miller & Shamsie, 2001; Stephan et al., 2003; Glass & Cook, 2016). Conversely, academics studying the manner in which corporations are governed concentrate on incentives and agency (e.g., Mallette & Fowler, 1992; Hill & Phan, 1991; Allen &

Panian, 1982). Even while every study produces and makes accessible priceless insights, the dispersion of research impedes the integration and knowledge accumulation.

In addition, there are many variations in the operationalization, conceptualization, and measurement methods employed to quantify CEO tenure across the two study domains, and academics have frequently—and maybe understandably—bemoaned the absence of construct validity. Finkelstein et al., (2009) pointed out, for instance, that the tenure of the CEO has been used as a stand-in for the power of CEOs, (Barkema & Pennings, 1998), conservatism and rigidity (Finkelstein & Hambrick, 1990; Miller, 1991), and human capital (Bergh, 2001). As a result, a wide range of characteristics about the CEO have been linked to their tenure. Due to the "possibly different meanings, it puts the burden of proving construct validity on researchers, or at the very least, trying to control for alternative meanings" (Finkelstein et al., 2009).

2.4 Theoretical Perspectives

In the body of existing literature, academics have employed a variety of theoretical frameworks to analyze the issue of corporate governance. The most well-known theories of corporate governance were found to be agency, resource dependency, human, and social capital theories in a meta-analysis of 74 theoretical and empirical research that were published in peer-reviewed journals between 1990 and 2011 (Johnson et al., 2013). It is thought that this meta-analysis is helpful since it compiles a substantial amount of material into a condensed, theoretically sound method of comprehending the phenomenon of corporate governance. We examine these four well-known theoretical models in an effort to better comprehend board capital as it actually occurs in the real

world. Thus, the theoretical foundation for this inquiry comes from the agency, resource dependence, human, and social capital theories as well as the upper echelons theory. This study explores the moderating influence of CEO tenure in the relationship between board human and social capital and company financial innovation, integrating agency theory, resource dependence theory, board human and board social capital theories, and upper echelons theory. To buttress the place of the CEO as a key actor in the innovations process, this study looked into the stakeholder theory. Finally, to provide a theoretical perspective on the predictor variable, this study also looked into the innovation ecosystems theory. In total, therefore, this study used seven theoretical frameworks. The use of multiple frameworks in this study was necessary due to the need to understand the multifaceted and complex concepts under the study. Use of the multiple theoretical frameworks allowed the study to deepen, enrich and provide a more comprehensive analysis of the research topic. Furthermore, as there is a diversity of theories that inform the research topic, this study investigated multiple theories to ensure that all the concepts under study were sufficiently explained from a theoretical point of view.

2.4.1 Agency Theory

Although the theoretical frameworks used to study the association between firm financial innovation and board capital are varied, agency theory has been used in most studies. A conflict of interest resulting from a mismatch of interests between management and other firm stakeholders is known as an agency problem, (Khandelwal et al., 2023). The gist of the theory as postulated by Jensen & Meckling (1976) assumes that there is likely to be opportunistic behaviour by managers acting for their own benefit rather than for the

benefit of the firm. Although firm managers, as agents of the principals or rather owners, should work towards the ultimate maximisation of shareholder value, incentives for managers to act in pursuit of their selfish own benefit are known to always be present. (Berger & Di Patti, 2006). The separation and segregation of ownership and control of a firm in a professionally managed environment within the firm may ultimately result in managers exerting themselves sub optimally, that is, not exerting their full efforts, indulging in perquisites or rather maximising on their personal comforts, choosing inputs or outputs that match their personal preferences or otherwise behaving in a manner to suggest that they are not keen to maximize the value of the firm. The principal–agent problem happens when one of the parties (the "agent"), is capable of making decisions and/or take actions on behalf of another person or entity (the "principal", García, Orozco, Pineda & Villalba, (2023). Further, the theory avers that as a consequence, shareholders should put in place and embed measures or internal controls to curtail, prevent or diminish the effect of such managerial behaviour (Hill & Snell, 1988).

Agency theory viewpoints contend that supervising the top executives of a company is a crucial duty of the board of directors in order to guarantee that management conduct is consistent with the goals of shareholders, the company's owners, (Edacherian, Richter, Karna & Gopalakrishnan, 2023). This theory underscores the vitality of ensuring full alignment of interests, goals and aspirations between shareholders as principals and managerial cadre as agents through bonus or other incentive mechanisms or through effective placement of an adequate monitoring and control environment by the board of directors to direct and promote the pursuit of innovation (Zahra, 1996).

According to the agency hypothesis, company managers take actions that are advantageous to them even when they are counterproductive to the long-term success of the company (Dong, Liang, & Wanyin, 2023). As such, this theory helps this study in proposing that a diverse and independent board is required to closely monitor the activities of managers and also to give them enough space as well to identify and pursue opportunities of growth that are beneficial to firms. Agency theory underscores the requirement of directors who are not only independent but also seen to be independent from the management cadre so as to effectively monitor the firm's managers and be able to counteract their pursuit of self – centred interests at the peril of shareholders. The presence of outside directors on the board promotes independence from the standpoint of agency theory. These independent directors are probably not subject to managerial influence.

Agency theorists make the assumption that management is risk averse and might refrain from investing in risky projects, which by and of itself could end up being disadvantageous to shareholders when it comes to generation of company financial innovations, (Ahuja et al., 2008). Consequently, independent outside directors are required to monitor the investment strategy and perhaps stop this underinvestment. According to Shaikh and Peters (2018), there is another viewpoint that contends that excessive monitoring by independent directors exacerbates management risk aversion and leads to increased underinvestment in R&D.

According to Charreaux (2000), the characteristics of directors are not any more viewed or conceived in terms of being independent or non – independent, but rather in terms of

the ability of the directors to make cognitively superior inputs or rather contributions that can be assimilated or integrated into a collective firm project. Thus, in this case, board diversity thus supersedes the hitherto popular criterion of director independence. Carter et al., (2003), Hermalin (2005), and Adams and Ferreira (2007) underscore the significance of the twin criteria, namely the perceived board independence as well as its diversity.

The capacity to guarantee resource acquisition and upkeep is essential for organizational existence (Jaskyte, 2012). In order to handle environmental dependencies, a company needs to create interorganizational ties that enable it to control certain essential resources. Boards act as a conduit between the company and other outside entities (Pfeffer and Salancik, 1978). Corporate boards have responsibilities beyond just exercising board control. Information is one of the essential resources that boards are intended to collect from their environment and make available to the focal firm in the course of their performance of monitoring and advisory roles. The pooling of such resources forms an essential knowledge base or resource portfolio (Hillman et al., 2002).

According to the agency hypothesis, the relationship between the CEO and the board is one of agent - principal. Since the board and the CEO may have different goals, agency issues could occur. The board should increase monitoring, according to agency theorists, in order to address agency problems and improve firm performance (Fama & Jenson, 1983; Jenson, 1993). Additionally, according to the view, boards serve as a useful tool for overseeing managers (Baysinger & Butler, 1985). The deductive reasoning is that directors and managers work together toward organizational success (Rindova, 1999).

However, there is a complex power relationship between the CEO and the board. This study sought to rely and add to the perspective of agency theory in the academic literature, of which companies can create new products and services by relying on the input of directors of companies (with the CEO often being the managing director) who possess higher stocks of human capital as well as social capital.

2.4.2 Resource Dependence Theory

There is a strong incentive for businesses to look outside the company for external resources when they are uncertain about how to handle new demands from stakeholders (Javeed et al., 2023). A board connecting a company to its external environment can foster access to crucial information and valuable resources that may reduce uncertainty for strategic actions, according to Pfeffer and Salancik's (1978) Resource Dependence theory, which suggests that a board of directors can aid in the formulation and implementation of a firm's strategy, (Haynes and Hillman, 2010).

Boards of directors expect individual directors to support management with resolving challenges (Pfeffer and Salancik, 1978) thereby enabling the firm to survive and succeed. In addition, boards of directors act as a vital connection that links the firm to the outside environment, (Carter *et al.,* 2010). As such, directors play important roles in the success of the firm, (Pfeffer and Salancik, 1978). These responsibilities mostly involve gathering the knowledge and experience that the firm needs to achieve its business goals, such as innovation. Secondly, by creating avenues for connection with the outside world, the directors facilitate the collection and sharing of knowledge relevant to the company's commercial success, including innovative ideas. Third, directors assist in creating

connections with the organizations in the surrounding area and those that the company needs to achieve its commercial goals. Resource dependence theory suggests that directors' relational capital can and does act as a vital link between the linked enterprises and vital resources and information that are critical to corporate success. Fourth, the company's directors give it legitimacy in the outside world.

Building on the Resource Dependence theory, Hillman and Dalziel, (2003) explain board capital as the total sum of social and human capital of each and every director. Board capital is used as a stand-in for a board's capacity to oversee, manage, and supply resources for the execution of company strategy (Hambrick et al., 2015). Resource dependence has obvious limitations: the theory lists a variety of resources that directors might provide to companies, but it doesn't go into detail about what those resources entail or how much they could be worth, (Hillman and Dalziel, 2003).

Furthermore, uncertainties are revealed by a critical assessment of resource dependence theory. The necessity of appointing directors is not made explicit in the theory. Initially, a company should be able to avoid the need for director appointments by obtaining the necessary counsel or support from consultants or other comparable service providers. By definition, consultants are experts in their fields, thus they ought to be better equipped to support the companies than directors. It is reasonable to anticipate receiving better advice and support from consultants with appropriate terms of reference than from directors, primarily because the former are experts in a particular phenomenon and the latter are generalists who are occasionally chosen using non-objective standards. Secondly, there is room for criticism about the premise that information enters and leaves

the company via directors, primarily since managers might fulfil this function when interacting with the outside world.

The argument is not without merit, though, as independent directors can offer fresh viewpoints that differ from those of managers who might have conflicting interests. The study benefits from the use of resource dependence theory, which lays the foundation for comprehending the role directors play in managing businesses. In order to gain a deeper knowledge of the association between the governance of corporations and innovation, it is necessary that this study turn to ideas related to board human and social capital.

2.4.3 Human Capital Theory

In recent times, there is nascent interest regarding how human capital can be conceptualised to generate and offer sustainable results for individual persons as well as for companies, (Donald, Baruch, & Ashleigh, 2024). In general terms, it is acknowledged that individuals forming an integral part of an organisation play a crucial role in generating innovative goods and services. Evidently, therefore, what individual persons know comes to play in the innovation process. One can draw parallels between the construct of human capital and capital, as known in economic theory. In economic theory, capital is associated with a stock of goods and assets which are utilised with a view to creation or generation of wealth through recurring or one time income streams.

On the other hand, human capital has a distinctively unique aspect whereby the human capital is intrinsic or inseparable from the individual and its owner. That being said, it is also widely accepted that the vast majority of groundbreaking innovations result from

collaboration and interactions of various individuals from multiple departments of an organisation. Jagódka & Snarska, (2021) observe that enhancing the quality of human capital can correspondingly increase the quantum of innovative companies, goods and services and go on to also aver that that this view notwithstanding, the long-term effect of human capital on innovation has not been empirically concluded and thus is still an open field of research. These interactions are enabled through leveraging human capital.

According to Costa, Pádua, and Moreira (2023) human capital is characterised by implicit knowledge and communication abilities that have the potential to become valuable assets for businesses. According to Samad (2020), managerial staff members should possess knowledge, skills, and competences, which are the components of human capital. The origins of human capital theory can be found in the academic writings of Becker (1964), who incisively discusses the importance of a person's portfolio of training credentials, work experience, and managerial and functional abilities that can be leveraged for the benefit of the organization.

It is in doubt if all companies can utilize the knowledge that is brought by a board that is rich in human and social capital. For example, some businesses are not capable or rather do not have the requisite internal resources to take advantage of the experiences of other businesses with which they have ties, even if a board of directors uses its human and social capital to transfer complicated knowledge among businesses (Javeed, et al., 2023). Human capital includes functional and managerial skills and on the job or rather practical experience which directors can be expected to bring to inform key decisions and the

accompanying processes, and which can potentially enhance competitive advantage, (Johnson *et al.,* 2013).

Human capital theory would appear to be more determinative when compared to resource dependence theory in light of the fact that it unequivocally lays down the characteristics and traits board members should bring into consideration while hiring a director. With regard to educational qualifications and perhaps in keeping with logic, relatively higher educational qualifications and standards attained by company directors are associated with higher levels of innovation driven by the directors' capability to process and synthesize information.

Human capital largely encompasses a set of functional skills, knowledge stocks, social connections, and functional and managerial expertise developed and or acquired through educational training, professional training, and practical experience (Becker, 1993; Kor and Sundaramurthy, 2009). The utilisation of human and social capital by successively and repeatedly performing tasks usually enhances or magnifies one's expertise in that task (Tian et al., 2011). As a result, the accumulation of experience in a specific area of domain meaningfully impacts the decisions that are related to that experience and potentially increases the chances of success, (Johnson et al., 2013).

While extant research on board human and social capital has largely concentrated on employees of firms, an emerging body of literature has sprouted pointedly showing that the board of directors is also a source of human capital that can enhance competitive advantage (Khanna et al., 2014). As such, this board human and social capital lends itself as a resource that may be harnessed for the benefit of organisations.

Outside directors of a company operate as powerful sources of functional and managerial experience, functional expertise, wise counsel, and diverse points of views, (Hermalin and Weisbach, 1988). Board human capital is the sum of the capacity of the individual directors to provide to the focal firm distinct functional and managerial skills and functional expertise in the governance of corporations.

To be more precise, board human capital is the collection of viewpoints, managerial and functional abilities, and creative expertise that outside directors of a company bring to the board of the main company. When paired with additional experience gained and/or developed through multiple or successive board appointments and industry experience, functional and managerial experience gained back at their home firms can represent significantly invaluable board human capital, leading to favorable firm outcomes (Nguyen et al., 2017).

Contrary to our expectation, some studies have concluded that advanced educational qualifications were negatively associated to expenditure on research and development, a construct that serves to operationalise innovation in extant literature, (Dalziel *et al*., 2011). A possible explanation advanced to account for this unnerving outcome is that members of the board with higher educational qualifications may potentially have been allured to join boards of firms that already immerse themselves in research and development expeditions. These apparently inconsistent finding on the impact on innovation of higher educational qualifications and standards that are achieved by the directors of a company present a fertile tension or gap that deserves academic investigation. Educational qualifications attained by directors of a company as well as

functional and managerial experience attained from an industry were incorporated as explanatory variables to investigate and ascertain the association between board human capital and innovation as an indicator of performance of firms, (Chen, 2014). The human capital theory serves this academic investigation by proffering the main board human capital explanatory variables for firm financial innovation, namely educational qualifications and experience.

2.4.4 Social Capital Theory

Social capital is taken to refer to the resources an individual gains access to through connecting and developing personal and business relationships with other people (individuals or groups) through a network, Donald, *et. al*., (2024). Innovations and technological innovations for that matter usually affect multiple departments of a business firm. Needless to say, therefore, for innovations to succeed, there will be interactions of individuals drawn from different departments of a firm. These interactions are enabled by social capital, as individuals seek information, guidance and expertise from their colleagues and external parties for them to develop ideas, design and redesign goods and services and take them to the marketplace.

Social capital is the information and reputation that an individual derives from a social network, (Xing, Zhang & Xiong, 2023) and may help firms by establishing associations with external parties, Sun *et al.,* (2023). Social capital concept has been used in different knowledge streams including sociology, economics and political science. Organizations can benefit from social capital, which is defined as the assets available in a wide network

of entrepreneurial partners and groups, by connecting them with outside parties, (Sun, *et al*., 2023).

Social capital is attributed to goodwill or benevolence that other parties or individuals have toward the focal person, (Adler & Kwon, 2002) and is defined as an individual's demonstrated capability to gain access to and exploit resources through a network of personal and business relationships, (Chen, 2014). The social relations and personal or business connections of the directors of a company's board can therefore be utilised as a source of competitive advantage. In sum, therefore, social capital can meaningfully be seen from three distinct levels: ties established by directors to other firms, interpersonal relationships between directors and firm managers, or the social standing of a director in the society, (Johnson *et al*., (2013).

Although it has not received enough focus and attention as a valuable resource in non-profit organizations, social capital theory describes how relationships can contribute value to organizations (Cohen & Prusak, 2001; King, 2004). The study employed social capital theory as a framework to investigate whether and / or how the connections between board chairs and executive directors contributed to the value of non-profit organizations. The theoretical framework of social capital theory (Gulati & Gargiulo, 1999) is frequently employed to comprehend interlocking directorates.

In line with social capital theory, the embedded social network affects corporate behavior and the relationships and connectivity patterns within it have an effect on how network members behave (Granovetter, 1985). Interlock studies demonstrate the significance of interlocks in the embeddedness process, and research backs up the idea that social

embeddedness affects organizational innovation performance (Echols & Tsai, 2005; Mizruchi, 1996). The interlocking directorate network is an information network rich in resources because interfirm links foster capacities for learning adaptive responses (Kraatz, 1998) and developing board-level schema for decision-making (Westphal et al., 2001).

Extant research utilises ties to other firms as an indicator of the existence or presence of social capital. Conversely, where the ties to other firms do not exist, extant literature suggests this to be as proxy for the lack of, or deficiency social capital. Directors can sit on boards of one or multiple companies at a given point in time. When a director sits in two or more boards of directors at a given point in time, this is known in academic circles as a director interlock. Using the director interlock ties, individuals can facilitate flow of meaningful information and beneficial resources into and out of firms and this can potentially positively or negatively affect the firm.

The interlocking directorate ties have in extant literature been positively associated with a firms' propensity for research and development, a widely used indicator for innovation, (Chen, 2014). The social capital theory propels this study by insightfully making available the crucial social capital explanatory variables for firm financial innovation, namely interlocking directorships, prestige and personal or business connections between the directors and the CEO.

2.4.5 Upper Echelons Theory

The Upper Echelon Theory states that the decision - makers' characteristics and backgrounds, such as educational qualifications, professional expertise, gender, longevity and tenure, can alter or rather influence the outcome of business decisions taken, which can consequently make a difference in determining a firm's value, (Makaryanawati, Azzardina & Haslinda, 2024). This Upper Echelon Theory which was originally proposed by Hambrick and Mason in 1984, states that the heterogeneity of the characteristics of those in the executive team leads to varied cognitive schemas and behavioural patterns and that this then affects the behaviours and decisions taken by the corporation, (Abatecola & Cristofaro, 2020).

Furthermore, the most widely adopted framework in extant literature for investigating executive personality is Upper Echelons Theory, (White, Harms, Borgholthaus & Tuggle, 2023) and has grown to be the most widely accepted theory for describing and forecasting how personality traits and other attributes of senior leaders affect strategic decision-making and firm-level results (White & Borgholthaus, 2022). According to the Upper Echelon Theory, top management teams with a variety of backgrounds—education, employment, culture, etc.—may exhibit different traits, sense of value, and cognitive abilities, all of which have an immediate bearing on their choice of strategy and the success of the company (Liu, 2023).

Upper Echelons theory also argues that the performance of a firm is a reflection of its CEO, (Carpenter et al., 2004) and states that the CEO of a firm is a supreme authority, Khan, Gang, Fareed & Yasmeen, (2020). This theory as proffered by Hambrick and

Mason (1984) states that executives depend on their characteristics, such as experience, values, attitude and personality in the making or taking business-related decisions, Lee, Sinha, Bae & Lee, (2022). This theory, in the context of this study suggests that CEOs' personal characteristics impact strategy, company priorities, preferences and organizational innovations. This theory therefore serves this research by suggesting the place of the CEO in leveraging on board and human capital to drive firm financial innovations.

In summary, the five theories helped situate this study within a cohesive framework. In addition, these theoretical perspectives helped the study to frame research questions, design and conduct research, and analyse their results as well as connect the independent variables to the dependant variable. Under the study, each theory had its place in helping the study contextualise the various constructs. The study found the Upper Echelons theory useful in tying up the other four and concluded, on this basis, that it is the theory that underpinned this study.

2.4.6 Stakeholder Theory

Based on Stakeholders theory, CEOs are "the chief planners and architects of a firm's financial innovation strategy (Sheikh, 2018). Stakeholder theory is grounded on the premise on the interference that potentially occurs between critical actors inside or outside of an organisation (Remiśko & Zielonka, 2018). A stakeholder is defined as "any group or individual who can impact or can be impacted by the performance of the organisation. Extant literature on the various definitions of a "stakeholder" has identified several factors; for instance, the nature and level of one's participation in the project,

relationship with the project, nature of the claim in the project, a party's role in the project, and the anticipated behaviour of an actor towards the project (Nwangwu, 2019).

CEO is a key stakeholder in a business firm and as such, CEO characteristics (such as CEO tenure) influence corporate strategic decisions and outcomes (Hambrick 2007; Arena et al. 2018). Prior research has identified the CEO of an organization as the most significant determinant of a firm's innovation performance, (Bereskin &Hsu, 2013). CEO attributes can therefore constitute a pertinent externality that may affect the link between board capital and innovation. For instance, some scholars have argued that experimentation, a proxy for innovation declines over the course of a CEO's tenure, (Miller & Shamsie, 2001). CEO's with a longer tenure have a lower propensity to invest in financial innovation (He, et al., 2021). Hsu et al., (2020) discover that as their careers progress, CEOs—both agent and founder—invest less in research and development. Agent CEOs get disconnected from the outside world and fall back on strategies that worked for them in the past. Founder CEOs are no longer able to manage financial innovation beyond a certain point. Thus, this study conceptualizes CEO tenure as a construct that may impact the association between board capital and firm innovation.

2.4.7 Innovation Ecosystem Theory

The body of study on the innovation ecosystem demonstrates a notion that has grown in importance over time among scholars from various fields. The innovation ecosystem as a paradigm has, in particular, been more appropriate for developing industries since the mid-2000s, where the relevant components include supply drivers and demand expectations, Arenal et al., (2020). This ecosystem approach as suggested by Arenal et

al., (2020) permits scholars to address the complexity of emerging environments of innovation to draw meaningful conclusions which are not possible with mere observation. There are significant differences between the conceptual histories of innovation systems and innovation ecosystems. Following the release of an article by Adner (2006) in the Harvard Business Review, which also offers the definition of innovation ecosystems that is most likely to be adopted, the concept's application took off. In the article, Adner (2006) observed that most breakthrough innovations don't succeed in isolation and that they need complementary innovations to attract customers. The cooperative arrangements through which firms combine their individual offerings into a coherent, customer-facing solution form an innovation ecosystem, Adner, (2006). In his article published in the Harvard Business Review, Moore's (1993) usage of the related notion of business ecosystems serves as the concept's primary foundation. Moore (1993) observed that in a business ecosystem, companies co-evolve capabilities around a new innovation: they work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations. The innovation ecosystem theory serves this study by providing a theoretical framework for the predictor variable, firm financial innovation.

2.5 Board Capital and Firm financial innovation

In its most basic form, strategic leadership is leadership that appears at the top of an organization, which comprises the top management team and the board of directors (BOD), Singh, Lim, Jha, Kumar & Ciasullo (2023). This study narrowed down on the

board of directors as it is often the pinnacle of a firm's decision-making process. A board of directors' social and human capital is known as board capital, (Javeed, *et al*., 2023).

Social capital is widely acknowledged and regarded as the bedrock of innovation. This acknowledgement is perhaps due to the fact that innovation often results from significant collaborative effort (Subramaniam &Youndt, 2005). Innovation is greatly impacted by a social network's size, the strength of the ties that are common in the network, their distinctiveness, and each player's relative position, (Zheng, 2010).

On the basis that innovations often require the input of a variety of players from multiple departments and functions of an organization, it would undoubtedly take social capital to ensure meaningful innovation is brought to fruition, (Subramaniam &Youndt, 2005). It would therefore appear that teams that do not connect with others in collaborative ways may deliberately frustrate or curtail idea creation and regeneration processes, and this would imminently dim or suffocate innovation efforts and ultimately, kill innovation. The presence of relatively higher amounts of social capital can provide access to useful knowledge as well as a medium of exchange of that knowledge which facilitates and spurs innovation, (Rass *et al*., 2013).

From a resource-based point of view, firms can tap into or otherwise utilize the human and social capitals of the board of directors for the purposes of keeping an eye on management as well as access to advisory services. On the basis that board human capital held by an individual actor will meaningfully impact their social capital, it is likely board social and human capital affect each other. Were this to be true, the benefits that emanate from human capital may not be easily separable or rather discernible from

those that come from social capital. Consequently, this study finds that there is benefit in contemporaneously investigating the effect of both human and social capital on innovation.

2.6 Board Human Capital and Firm Financial Innovation

The possession at a personal rather than at group level, of an expanded range in human capital implies wide or broader capabilities, knowledge stocks, and skill sets over and above greater consciousness of differences across domains (Tasheva & Hillman,2019). Friedrich List, a post World War II political scientist and journalist observed that human capital, meaning mental power or accumulation of knowledge and experience is the primary cause of productive power and industrialisation.

Human capital theory in extant literature is often traced back to the scholarly work of Becker (1964) that deals with the role of an individual's stock of educational qualifications, functional and managerial experiences and functional and management skillsets that can be utilised to commercially advantage of the firm. The human capital theory is largely premised on the general assumption that educational qualifications are necessary, essential and useful to enhance the productivity of labour, (Alekseeva, Antoshkova & Vasilenok, 2019). Functional diversity, which essentially looks at the variety of professions on a board of directors is a related construct. In the ensuing paragraphs, we discuss the manner in which board human capital constructs potentially affect innovation efforts and ultimately, innovation. In the subsequent paragraphs also, we lay out the related empirical studies as well as provide a critique of the same in ensuring we deepen understanding of the said constructs.

While employees have in extant literature been the primary subject of most human capital research, extant research shows that a board of directors of a firm can provide both human capital, that potentially forms an integral part of a firm's competitive advantage (Khanna et al., 2014). External directors are valuable providers of experience, knowledge, advice, and different perspectives (Hermalin and Weisbach, 1988). The ability of directors and the boards as a collective unit to offer the focus firm specialized knowledge and experience in the governance of corporations is known as board human capital.

To be more precise, the collection of abilities, expertise, and viewpoints that external directors bring to the board as a whole is known as board human capital. Nguyen et al., (2017) suggest that a combination of expertise gained from their home firms, industry experience, and replicated board nominations could constitute important board human capital and lead to positive firm results.

In conclusion, board human capital offers focus firms some advantages, despite the fact that its measurement and impact are problematic to determine and that the direction of its impact is probably non-monotonic or context-dependent (Johnson et al., 2013). Furthermore, research indicates that certain human capital on boards, similar to other types of human capital (Kroll et al., 2008), might be unique to your company and not always portable to the boards of different companies (Hatch and Dyer, 2004). Directors' experiences as managerial cadre in their own company and as directors on the boards of other companies serve as a major source of human capital for the board.

Among studies in extant literature investigating the effects of board human capital on firm financial innovation is Valenti and Horner (2020) which found support for the theory that board human capital is associated with firm financial innovation. They came to the specific conclusion that in the pharmaceutical business, innovation, as gauged by R&D spending and patent volume is positively impacted by scientific expertise, industry experience, financial expertise, and the presence of women directors. These findings suggest that while forming corporate boards, directors' qualifications, experience, and knowledge should be taken into account.

2.6.1 Board of Directors Education and Firm Financial Innovation

Directors in possession of advanced educational qualifications and degrees significantly enhance the effectiveness of a firm, (Javeed, *et al*., 2023), with Hillman and Dalziel (2003) further indicating that a member of a board of directors in possession of diverse educational qualifications are bound to enhance the effectiveness of the board in the course of evaluation of strategic policies and their eventual implementation. A contrasting view from Chang *et al*., (2017) says that directors with relatively lower educational qualifications coupled with more hands-on practical work experience as well as a variety of viewpoints and rich or rather diverse points of view turn around more efficaciously than directors who merely possess relatively higher educational qualifications. This empirical study will seek to reconcile these diametrically opposing viewpoints.

Educational background refers to any discipline of education, examples being, finance, Islamic finance, business, management, social or physical sciences, arts, law and

engineering, (Khan *et al.*, 2024). For the purposes of this study, educational qualification refers to ownership of at least one academic degree by directors of the company. Many people consider education to be a quality linked to overall human capital, (Kim and Lin, 2010). Directors will benefit from the knowledge and learning structures produced by more advanced formal education, (Wincent et al., 2010).

Extant literature provides a suggestion that directors of a company who possess higher educational qualifications and other functional skills are in a better position to generate, shape and contribute to finding novel and beneficial solutions to solve problems facing their organizations (Wincent *et al.*, 2010). Educational qualifications, practical experience, and talents are traits that can impact the prospects of business innovation, (Javeed, *et al*., 2023). This is consistent with our expectations and more so, logic, as individuals in possession of higher educational qualifications can potentially better and in a much faster way appraise and comprehend any given situation or scenario and imagine, reimagine and evaluate feasible options and ideally settle on the most viable of all the available options. Surprisingly though, empirical work, has provided a mixed bag of conflicting academic results regarding role of higher educational qualifications in innovation.

For instance, one study found that higher educational qualifications had no significant association with certain lines of innovation (Bantel & Jackson, 1989) while in another, earned educational degrees possessed by directors from outside of the firm negatively impact expenditure on research and development, a stand-in for innovation, (Dalziel *et al*., 2011). These inexplicable findings are puzzling, especially when put side by side

against other conclusions in extant literature that link advanced educational qualifications held by the directors to a higher capability for fine grained information-processing that ultimately yields innovation, (Subramaniam & Youndt, 2005; Chen, 2014; Wincent *et al*., 2010).

Drawing from resource-based theory; higher educational qualifications can reasonably be expected to avail members of the board with superior and faster information synthesis skills to deal with a wide array of data in the financial services sector, (Bantel & Jackson, 1989). Education can also provide skills in research regarding evaluation of projects, knowledge that is relevant to management of innovation or even acquaintance with specific research related to the R&D pursuits, (Dalziel *et.al*., 2011). Directors with higher educational qualifications are thus likely to facilitate innovative capabilities even as they keep an eye on management and advise members of management. This investigation embarked and set out to ascertain empirically how, if at all, higher educational qualifications of board members affect innovation in the financial services sector.

The degrees, diplomas, certificates, professional titles, and other credentials that one earns through full-time, part-time, or private study, whether obtained domestically or internationally, and whether conferred by educational authorities, special examining bodies, or professional bodies, are referred to as educational qualifications (OECD, 2003). Therefore, earning an educational qualification requires finishing a course of study or training program successfully. A person's level of educational qualification determines

the quality of their education. This study investigated the impact of directors' educational backgrounds on business financial innovation within Kenya's banking sector.

2.6.2 Board of Directors Experience and Firm Financial Innovation

Experience is generally understood to be a learning process that proceeds from both formal and non-formal education that potentially enhances the development of behaviour and can be taken as a process that leads a person to a higher pattern of behaviour, (Humairo & Abidin, 2024). Experience that is gained from practical work does make a significant contribution to an individual's ability to undertake a job, especially work that is known to be sophisticated and therefore requires special skills.

Review of extant literature grounded on resource dependence theory reveals scholarly works that suggest that functional and management experience gained from a particular industry often affects the influence of an individual director participating in the board decision making process. As past experiences shape the way the particular directors view the world, it is logical that functional and management experience of a director will affect one's decision-making process.

Furthermore, in recent days, a higher number of top management executives in conventional or rather traditional businesses who are in possession of experience in the Internet industry are known to be willing to embrace new modern technologies and novel viewpoints and demonstrate incremental vital innovation awareness and willingness, (Liu, Huo & Li, 2023). The foregoing will no doubt have a profound effect on the innovation capability of traditional businesses.

Review of extant literature shows that experience is broadly classified into four distinct phenomena: experience as CEO of a company, venture capital related experience, financial expertise and functional or management experience with specific activities (Johnson *et al*., 2013). Possession of these different aspects of functional or management experience is expected to affect an individual directors' orientation and therefore affect various firm outcomes differently and scholars have been encouraged to engage in further academic research to attempt to clarify the condition, functional form as well as the mechanisms of the effect (Johnson *et al*., 2013).

Directors of a company who possess industry-specific experiences will invariably be apt and conversant with the industry's technology, varied customer needs as well as the competitive moves that are likely to be undertaken in the market place and will be in a better position to evaluate the most viable opportunities of innovation (Chen, 2014). In addition to the aforementioned industry experience, business leaders must also possess sound technical, relevant and professional expertise for them to be able to lead the businesses they are responsible for in cementing novel, creative and beneficial efforts (Mumford *et al*., 2002).

Extant literature also reveals that experience may be classified as local or foreign, in terms of where the experience has been gained. Directors' exposure to overseas markets or countries, whether gained through education, training or practical hands-on work experience, can potentially provide invaluable insights into how firms in foreign countries or overseas markets navigate uncertain and risky environments, (Kazim, Wang, & Zhang, 2024). This experience gained from foreign markets can be applied back home

or in other markets in helping business firms achieve desired business outcomes, including innovation.

From their prior and current professional experiences to their own directorial experience within the organization, board members bring a variety of knowledge and talents to the table. In terms of professional experience, board members who have worked in the industry the company operates in will have a good understanding of the competitive landscape of the industry and how it functions. As a result, they will be well-positioned to advise the management of the company (Kor and Sundaramurthy, 2009).

Thus, the industry experience of the directors influences board tasks and responsibilities, which benefits innovation (Balsmeier et al., 2014; Dass et al., 2014). The directors' prior knowledge in the industry enhances the board's oversight role and facilitates the prompt identification of the sector's potential and hazards (Wang et al., 2015). Directors can more effectively challenge strategy plans and counsel managers when they have prior experience in the company's industry (Chen, 2014).

The technical and professional expertise invariably yields from the sum of educational qualifications and past cumulative hands on experience (Chen, 2014). Intuitively, it is plausible that the more the past hands on experience a director possesses in the financial services sector, the more the likelihood the director will be innovative. There is deserved merit therefore, in thinking that business firms that are operating in highly competitive markets that require market players to seek to leverage on innovation will be likely to seek directors who have amassed prior experience with innovation.

Based on the foregoing discussion, this study gives forth one hypothesis that seeks to take into account the past hands-on experiences of directors acquired in the financial services sector, either as past employees or directors. This study sought to empirically test the effect of experience of directors on firm financial innovation in the banking industry in Kenya.

2.6.3 Functional Diversity in the Board and Firm Financial Innovation

Diversity among board members can take many forms, including differences in gender, age, nationality, professional experience, abilities, political inclination, religion, culture, and sexual orientation (Rao and Tilt, 2016). Drawing on the agency and resource base perspective, Kusumastati, Siregar, Martani & Adhariani, (2022) concluded that businesses that have a diverse board of directors—both demographically and structurally—perform noticeably better. Boards of directors need to have in their possession a wide array of skillsets, information, knowledge, experience and capabilities to be able to fulfil their monitoring and advising functions effectively (Adams *et al.*, 2010). Functionally diversified boards are better at challenging the executive's presumptions as well as at managing external dependencies (Goyal et al., 2019).

Review of extant literature reveals that scholars have analysed the impact of board heterogeneity and the results of those studies have yielded conflicting conclusions. For instance, board heterogeneity, by virtue of the variety of the viewpoints that can yield therefrom can have levels of diversity of opinions that can create or seed board conflict or on the contrary, enhance a firm’s access to beneficial resources (Johnson *et al.*, 2013). Accordingly, the phenomenon of board heterogeneity can logically be viewed as a

double-edged sword as it can yield mixed blessings: either lead to firm prosperity or firm stagnation. This study builds on extant literature on group heterogeneity which concludes that more heterogeneous groups tend to generate more creative, novel as well as innovative ideas. Based on the foregoing, this study anticipates that more diverse boards will potentially have pronounced levels of knowledge base, that are much needed for business innovations.

As the economic framework gets more complex, the variation within boards with relation to functional variety becomes more significant (Mahadeo et al., 2011). Cannella et al., (2008) make a distinction between dominant functional diversity (heterogeneity in the functional domains in which each member of the top management team (TMT) has served the longest) and intrapersonal functional diversity (breadth of functional experience within members). When a functionally diverse team shares and combines its diverse knowledge, skills, and information, it may be able to produce new ideas through collaboration (Somech and Drach-Zahavy, 2013).

With regard to cultural diversity of boards, Li, Wang & Xue (2024) in their study on clan, culture and corporate innovation contend that the firm's innovation operations, which are perhaps among its most important ones, are carried out by people with a variety of cultural backgrounds. Accordingly, there is reason to support heterogeneous boards. Company boards of directors that are less heterogeneous possibly end up with o myopic thinking which can impede, stifle or dim the generation and recognition of creative business opportunities (Yang, 2014). Review of extant literature with respect to board heterogeneity points towards an on-going tension between beneficial and non-beneficial

heterogeneity, whereby there are no conclusive viewpoints on whether or not board heterogeneity is beneficial. Scholars, with a view to resolve the aforementioned tension, have recommended further research to help and determine when board diversity can be beneficial or when it can be non-beneficial (Haynes & Hillman, 2010).

Regarding functional diversity in the company boards of directors, Wincent et al., (2010) found in their research that functional diversity was beneficial to innovation and therefore recommended board of directors to embrace board diversity so as to facilitate innovation efforts. The effect of board functional diversity, a phenomenon that scholars posit is a construct to measure the presence or absence of board human capital on innovation is unclear, with Haynes and Hillman (2010) calling for further academic research to help determine the conditions under which diversity can be beneficial to businesses and when it is not. Johnson et al., (2013) recommend further academic research to help clarify the effect of functional and management experience, another construct to measure presence or absence of board human capital on firm outcomes.

One is persuaded to think, and perhaps rightly so, that functional diversity is potentially beneficial to business innovations due to the advantages that can yield or accrue from the multiplicity of opinions, viewpoints and ideas. This would in turn enable fast, apt and fine-grained synthesis of complex emerging trends (Wincent *et al*., 2010), as characterised by financial services sector that in today's market serves an increasingly sophisticated and technologically savvy clientele. This study sought to empirically test the effect, if any, of the presence or absence of directors' functional diversity on firm financial innovation in the banking industry in Kenya.

2.7 Board Social Capital and Firm Financial Innovation

Social capital principally refers to trust, norms and values and networks, (Parthymos & Daskalopoulou, 2024). Social capital has often been looked at in terms of the goodwill or benevolence accessible to persons or groups of individuals (Adler & Kwon, 2002). Social capital encapsulates a wide range of attributes that can assist a firm to function amicably, harmoniously, and smoothly, embedding norms, making cooperation possible, generating and sharing common approaches for communication and cooperation, and consequently offering solutions to common challenges, (Dung, *et. al.*, 2024).

It is a challenge building social capital in organisations because it may not pay off in the short run, (Likitapiwat & Treepongkaruna, 2023). In essence, social capital yields from the social relations of the individual directors, those both within and external to the focal organisation. According to Nahapiet and Ghoshal, (2000), social capital is looked at as resources (both tangible and intangible) that result from interactions between people, groups, or organizations. While researchers concur that social capital is becoming more well-known for providing a significant number of benefits (such as greater career success, higher income, and so forth) to people, communities, and organizations, they are unable to reach a consensus regarding definitions and meanings (Adler, 2002; Florin, Lubatkin, & Schulze, 2003).

Extant literature has often regarded social capital as the foundation of business innovations primarily because innovation is almost always a collaborative rather than an individual effort, (Subramaniam &Youndt, 2005). The size of the social network, the distinctiveness of the connections that are prevalent in the network, the ties' strength that

exist in that network and the relative position of a player have been known to have a significant effect on innovation, (Zheng, 2010). On the basis that that business innovations often involve multiplicity of players drawn from numerous functions of an organization, it then goes without saying that it would take enhanced levels of social capital to ensure that innovation efforts can be expected to bear fruit, (Subramaniam &Youndt, 2005). Teams of individuals that do not connect well with others may potentially frustrate, dim or suffocate the much needed idea creation process and this would invariably kill innovation. Relatively high amounts of social capital can provide access to much needed knowledge stocks and also provide a channel for information flow that makes possible, propels and augments innovation, (Rass *et al*., 2013).

Review of extant literature regarding recent theories on the social capital phenomenon show that there are two main forms of social capital: connections to outside organizations and high status or prestige, (Johnson et al., 2011). Each of these social constructs are expounded in a here below to the extent that they affect the independent variable in this study, namely firm financial innovation. The capacity of an individual to obtain resources through a network of contacts is referred to as social capital, sometimes also called relational capital, (Burt, 1992).

Interlocking directorates created by several board appointments may be considered significant board social capital from the standpoint of resource reliance since they offer rapid access to vital resources for research and development (Dalziel et al., 2011). Directors establish connections with other directors and executives through their service on other corporate boards (Nahapiet & Ghoshal, 1998). This promotes communication,

the exchange of pertinent, high-quality information, and the acquisition of tactical knowledge (Carpenter & Westphal, 2001).

2.7.1 Director Interlocks and Firm Financial Innovation

Globally, shared directors are often present on the boards of large corporations due to social systems that encourage various forms of connections, such as investments and vertical relationships. One of the most important social networks within businesses, director interlock, has shown to be an inexpensive and reliable means of disseminating information (Haunschild, 1993). Board interlocks are a ubiquitous and confusing occurrence that are widely acknowledged to be one of the most active research topics in the field of corporate governance (Dhingra & Dwivedi, 2024). Director interlocks arise when a member of a board of a firm is retained to sit in the corporate board of another business firm, either as a member or chairperson. These board interlocks create a web of networks in the business world, a network that cannot be deemed as trivial, (Dhingra & Dwivedi, 2024).

Board networks that are often created by interlocks increase the wealth of a firm, enhances competitive advantage in data and other information resources and reduces the data asymmetry (Berkman *et al*., 2020). That being said, it is possible that excessively interlocked board members could sit on too many boards and not be able to contribute effectively to any or some of them, (Lu *et al.*, 2024). Although, caution on interlocks is necessary due to the many instances reported in the popular press alleging abuse of insider information that has been obtained through personal relationships among

corporate board members, which relationships may yield from interlocking director networks.

Directors of companies, in their monitoring and advisory capacities provide resources from elements that are outside the focal firm primarily through social interaction, enabled by social capital, (Pfeffer and Salancik, 1978). This interaction is known to yield beneficial resource exchanges that may promote, propel and catalyse business innovation, (Chen, 2014).

Board director interlocks (i.e., shared board memberships by one or more board members) can create the opportunity for the focal firm to get exposed to new ideas and suggestions in its own organizational context, (Yildiz, *et al.*, 2023). These director interlocks can and do enable the focal firms to access better or superior information, data and insights which enable directors and management of the focal firm to quickly appreciate and deepen their understanding of emerging industry events and trends, (Haynes & Hillman, 2010).

These director interlocks can and do also cause flow of information, data and other insights, hence making resources available, (Rass *et al*., 2013), but can also entangle the directors in many and varied engagements, thus elevating the responsibilities of directors occasionally to the expense of the firms they represent, (Masulis and Xie, 2012). Edacherian *et al*., (2023) discovered that it may not board interlocks per se that are counter productive to firm performance; but that appointing well-connected directors with experience in serving on other boards might be beneficial for firms. Yildiz, *et al.*, 2023 attempted to investigate the effect of the directionality of the director ties to assess

whether the firms' benefit is greater when its directors sit on the boards of other firms (so-called outgoing ties) compared to when other firms' directors sit on its own board (so-called incoming ties) and concluded that incoming ties can bring more useful first-hand experience once these ties get stronger.

A director with interlocking directorates is one who holds board positions on the boards of two or more businesses concurrently. These individuals can foster relationships between various businesses and serve as a symbol of the enterprise's social capital (Mizruchi & Stearns, 1988). Businesses can obtain a variety of resources from the interlocking directorates that create a relational network, particularly knowledge resources, which are essential for innovation (Wincent et al., 2010). Because directors typically serve on many boards, they often form networks and connections with other businesses, shareholders, and individuals. This phenomenon is known as interlocking directorates, or shared directors (Barroso et al., 2016). Scholars have been drawn to the generalization of this occurrence and its possible ramifications, but there isn't much agreement on its significance.

According to certain views (Barroso et al., 2016), directors can benefit greatly from the significant access to strategic information, important resources, earning potential, and credibility that this overlap (interlocking directorship) offers. However, the limitation of time that is available to directors who serve on numerous boards has also been linked to certain detrimental effects, which have been linked to a decrease in commitment, responsibility, and effectiveness in the performance of their duties (Guerra and Santos, 2011).

Furthermore, director interlocks are often examined as a homogeneous phenomenon, with the presence and quantity of shared directors taken into account to determine their possible effects on firms' strategies and performance (Barroso et al., 2016). Interlocking directorates have the potential to improve performance by imitating effective strategies (Connelly et al., 2011) and by providing essential resources for network opportunities, including information that is deemed strategic, learning and legitimacy (Barroso et al., 2016). However, additional costs could also result from the loss of independence of directors (Guerra and Santos, 2011); a drop in the board's commitment and involvement in its duties and the limitation of time, focus and attention that directors give to their board role in this situation (Harris and Shimizu, 2004). As a result, they might not be able to regularly attend all scheduled board meetings and events or sufficiently prepare for them (Finkelstein & Mooney, 2003).

Extant literature on social capital has singled out multiple pros and cons of director interlocks. The directors with a valuable ties and connections can potentially provide vicarious learning experience (Johnson *et al*., 2013) as they will tend to observe how their fellow directors and other players in the firms where they serve as directors will approach and deal with a variety of business issues or decisions. Directors with external directorships tend to gather more information, data and business insights but are also too busy due to the multiplicity of their engagements to adequately observe, monitor and provide advice to their focal firms. Looked at in totality, director interlocks can be another double-edged sword that can deliver a mixed bag of blessings. With the interlocks, there are benefits and costs that can accrue contemporaneously.

Every cloud tends to have a silver lining, and one would then be persuaded, and perhaps rightly so, to think that having multiple network ties provide access to data, information and insights that are resourceful and that are relevant and beneficial for innovation purposes (Rass *et al*., 2013). This study tested the effect of board interconnectedness on bank firm financial innovation. Furthermore, in order to close the gap created by the absence of a recent review, this study attempted to identify and incorporate the empirical research on board interlocks.

2.7.2 Prestige and Status of Directors and Firm Financial Innovation

In a hierarchical social system, socio-economic status refers to an individual's or group's relative position based on wealth, prestige, and power. It is defined in terms of income, wealth, education, occupation, and living conditions., (Guadamuz, *et al.,* 2023). Extant literature acknowledges that career prestige is a social fact founded in the collective conscience and prestige perceptions morally grounded, with some occupations perceived to be more important and therefore appearing to be more prestigious. Review of extant literature reveals existence of multiple definitions of prestige. For instance, Zavertiaeva & Ershova, (2022) define prestige as social status and reputation. Prestige is known to express the status of an individual person in their society and further, to show how those individuals are perceived by others, (Kuru, 2023). With regard to the need for directors to preserve their reputation Masulis & Mobbs (2014) argue that the motive to be seen as an invaluable director is likely to be strongest where the director believes their directorship is most visible and prestigious.

Fama and Jensen (1983) argue that maintaining and increasing reputation in the competitive market for directorships is a key preoccupation of directors. They contend that directors would wish to build a reputation as a committed, sharp and diligent monitor and adviser to management principally because this directly influences the perceived value of the human capital they possess and therefore the likelihood of securing future directorships, (Fama, 1980).

Furthermore, Kuru, (2023) opines that prestige, which in other words means the respectability and dignity of an individual tends to point to being respected by society, making oneself accepted in society and making a place for oneself among other people. This prestige can yield from one's occupation, for instance, legal practitioner, lecturer, military etc. Occupations that are perceived to be necessary for the continued survival and development of society tend to receive relatively greater recognition through the relatively higher prestige attributed to them, (Eriksson & Nordlander, 2023).

Directors of companies that are prestigious or directors with high levels of status are more likely than not to seek to maintain, preserve or enhance their social standing (Johnson *et al.*, 2011). With the foregoing, it is apparent that directors' reputation in the industry is of utmost importance to the individual directors and the business firms that they represent. Directors who view themselves or are viewed by other players with prestige will be more likely than not to invite other people with relatively high prestige to join their boards and those being invited will also evaluate the prestige of both the directors and the firm they are being invited to join (Johnson *et al.*, 2011).

It is perhaps possible that for instance, industry leadership for example in terms of business profitability and cashflow generation or innovation are some of the attributes

that yield status and prestige for both the firm and the directors of that firm. Past research has also measured levels of relative status and prestige in terms of whether the individuals attended or learnt at an elite school, possession of experience at a prominent and large business firm and experience at firms that are generally recognized as prestigious (Johnson *et al.*, 2011). Possession of functional and management experience at firms that are known to be prominent in the focal industry is perhaps the only measure that can be associated to innovation on the basis that those prominent firms have at their disposal the resources that are required to invest in meaningful research and development that is a necessary ingredient for business innovation.

Furthermore, with a vast resource base at their disposal, such firms would be best placed to try to bring new and modern products and services in their respective markets without significantly affecting their bottom lines and cash reserves. This study sought to empirically test the effect of levels of prestige and status of company directors on firm financial innovation in the banking industry in Kenya.

2.7.3 Directors Relation with Chief Executive and Firm Financial Innovation

Business stakeholders often use interpersonal relationships with a view to begin to overcome boundaries to gain access to and disseminate information and other resources, (Gu & Yuan, 2024). Directors and the CEO may have professional or personal ties, such as having served on the same board or being members of the same country club. The professional ties may also have positive effects because they indicate a previous working relationship in a professional setting, suggesting that the professional ties could lead to greater trust and confidence, (Cohen, Gaynor, Krishnamoorthy & Wright, 2022).

Social capital can and does accrue from established personal and loyalty relationships as these can in a significant way affect the incentive and motives of the directors (Adler & Kwon, 2002). In the same way, the social capital can compromise their independence through director interlocks whereby one director is serving at two or more firms although the same may enhance open communications. A director of a company can have various relations with the chief executive of the focal firm: business, for example by being a customer of the firm where one is a director. It is also possible for a director to be a supplier of goods and services resulting in an affiliation, a perception of 'owing' where the director has been appointed by the chief executive, or personal, where the director has personal or family or clan connections with the chief executive (Johnson *et al*., 2012).

It is not enough to simply define positions or formal job specifications in order to comprehend the nature of the board-CEO interaction; doing so would miss the subtleties of complementarity. Rather, a single theoretical framework may not be adequate to explain the complexity and multidimensionality of the board-CEO interaction and its implications on strategic decision making (Finkelstein and Hambrick, 1996).

Personal ties between CEOs and directors are likely to enhance trust and yield collaboration that makes directors feel comfortable with offering counsel and resources and that encourages CEOs to engage and obtain directors' advice (Westphal, 1999). Review of a number of peer reviewed journals on the effect of director relationships with CEO suggest that these personal, business or on deed other relations can influence the level of advice and counsel. Further, the same relations can indeed strengthen the acceptability of the information (Johnson *et al*., 2012). This study takes the view, and

perhaps rightly so, that the presence of higher levels of these relations should be able to enhance the level of advisory and counsel role that is played by the directors that further, this situation is likely to result in higher levels of business innovation. This study therefore empirically tested the effect of director's relations with the chief executive on bank innovation.

2.7.4 Control Variables

Three control variables namely firm age, firm performance and firm type were included to purposely ensure that the findings of this study were not likely to be confounded by the effect of the longevity of the time the firm had been in operation, the firm performance as measured by profitability and firm type given the structural differences in banks, micro finance institutions and deposit-taking SACCOs. With regard to firm age, Leyva-De la Hiz & Bolívar-Ramos, (2022) aver that firm age is a factor that could impair firm performance, as it brings about inertia and rigidities that lower flexibility and discourage change. Firms that have existed for fewer years are likely to engage in innovation activities as compared to those that have existed for many years. Regarding firm performance measured in terms of profitability, Adewumi, (2024) study suggests an interesting dynamic: financial gains can act as a catalyst for further innovation. This would perhaps be the case because profitable firms are likely to generate cash resources that are necessary ingredients in the innovation processes. Also, firms that are profitable are likely to attract and afford to remunerate high-caliber board members thereby attract top-notch human and social capital.

2.8 Moderating Role of CEO Tenure

CEOs with long tenure in business firms are deemed to have wielded incremental power to take the most appropriate business decisions and deploy the most effective market tactics that could propel the performance of the firm, (Almulhim & Aljughaiman, 2023). In addition, the long -tenured CEOs can accumulate incremental quantities of firm - specific expertise and skill sets in addition to deepening their awareness of firms' capabilities, management practices, ethos and management culture.

Extant literature has shown that the discipline studied by the CEO is relevant to innovation, with CEOs who graduate in business-oriented studies being less prone to introduce new products, while on the other hand science-educated CEOs are known to be more likely to introduce a higher number of patents in high-technology firms, (Loukil & Yousfi, 2022).

Another insight regarding the impact of CEO on innovation touches on CEO tenure, with Loukil & Yousfi, (2022) asserting that the longer the CEO tenure, the lower are the innovation outcomes, and especially so in high-tech industry. Furthermore, a third perspective espoused by Loukil & Yousfi (2022) and one that introduces the aspect of CEO-ownership in the focal firm posits that CEO owners would more often than not invest in long-term activities with a positive return on investment such as innovative projects. This predisposition is likely to result in a focal firm generating more innovation outcomes.

Penultimately, and with regard to CEO founders, Loukil & Yousfi, (2022) aver that CEO founders are more concerned about the implementation of novel processes. Ultimately, Loukil & Yousfi, (2022) also show that the number of patents is lower, over extended periods of time when the gender of CEO is female. The foregoing suggests that there are multiple aspects of CEO attributes that may be of interest to researchers with regard to their impact on firm innovation.

Extant literature indicates that the overarching theme for future research on CEO tenure should be to develop a richer and deeper understanding of how CEOs behave over time, why they behave as they do, and the implications of their behaviour, (Darouichi, Kunisch, Menz, & Cannella Jr, 2021). Prior research acknowledges that the CEO of an organization would significantly direct a firm's strategy and that much of the leadership for developing and championing innovation is driven by CEOs, (Bereskin & Hsu, 2013). This makes the disposition of the CEO paramount in setting and driving the firms' innovation agenda and can thus not be ignored.

CEO's interests, motivations and power evolve depending on his or her tenure cycle, (Hambrick & Fukutomi, 1991). The aphorism that 'people change' is ingrained within us and resonates across history, (White *et al.,* 2023). In tandem, the CEO is likely to adjust their stance on various strategic leadership agenda e.g., innovations as they go through their leadership tenure. CEO tenure refers to the number of years a CEO held that position in the focal company, (Jie Wu, 2014; Al-Shaer, Albitar, & Liu, 2023). Research on firm financial innovation that does not consider CEO tenure is thus likely to be

inconclusive. The foregoing informed the choice of CEO tenure as the moderating variable in this study.

In a five-season model of a CEOs tenure, there are distinct patterns of executive attention, behavior and organizational performance that can be discerned from each of the seasons, (Hambrick & Fukutomi, 1991). These five seasons are response to mandate, experimentation, selection of an enduring theme, convergence and dysfunction. Under the response to mandate stage of tenure, the CEO would ordinarily concentrate on the mandate they have been given by the Board or predecessor. This could include innovation, cost cutting, expansion etc. Experimentation, on the other hand, would entail relaxation of CEO's commitment to their paradigms as well as trial of new ways of running the enterprise. The last three phases would respectively entail i) selecting what works for the organization and CEO, ii) reinforcement of what works and eventually, iii) disengagement process.

The import of the foregoing is that the degree of an organizations' innovation stance will vary depending on what the stage of the CEO tenure is, i.e. whether the CEO tenure is at an earlier or a later phase. As such, managers, and by extension CEOs change quite a few things early in their tenures and then move towards greater stability, (Miller & Shamsie, 2001). This view is reinforced by later assertions that long-serving CEOs are frequently steeped in existing technologies, (Wu, 2014) and their propensity to engage in innovations is likely to be low. CEO tenure has significantly negative association with risk-taking, (Sukhahuta, 2022). Innovations are inherently risky, thus long tenured CEOs are likely to give innovations a wide berth, given their risky nature.

The foregoing literature suggests that firms will be innovative early in the CEO tenures. As a result, we posit that a study on the impact of board capital on innovation without due consideration of how CEO tenure may affect this relationship may lead to inconclusive results. Consistent with the five-season model of a CEOs tenure, this study anticipates that the CEO's propensity to initiate or encourage innovation will largely be determined by the stage they are in during their CEO tenure. Consequently, under this study, it is hypothesized that the interactive effect of CEO tenure and board capital will impact innovation, with higher innovation being experienced in earlier phases of CEO tenure.

Available research suggests that there is a positive interactive effect between CEO tenure and board social capital on research and development, (Chen *et al*., 2013). Extant literature indicates that research and development is used as a proxy for innovation. This study extends knowledge by tracing the interactive effects of CEO tenure and board capital on innovation. This study sought to empirically test the effect of CEO tenure on the relationship between board capital and firm financial innovation in the banking industry in Kenya.

2.9 Summary of Knowledge Gaps

From the review of extant literature in the foregoing paragraphs, this study has provided a summary of knowledge gaps in table 2.1 overleaf:

Table 2.1

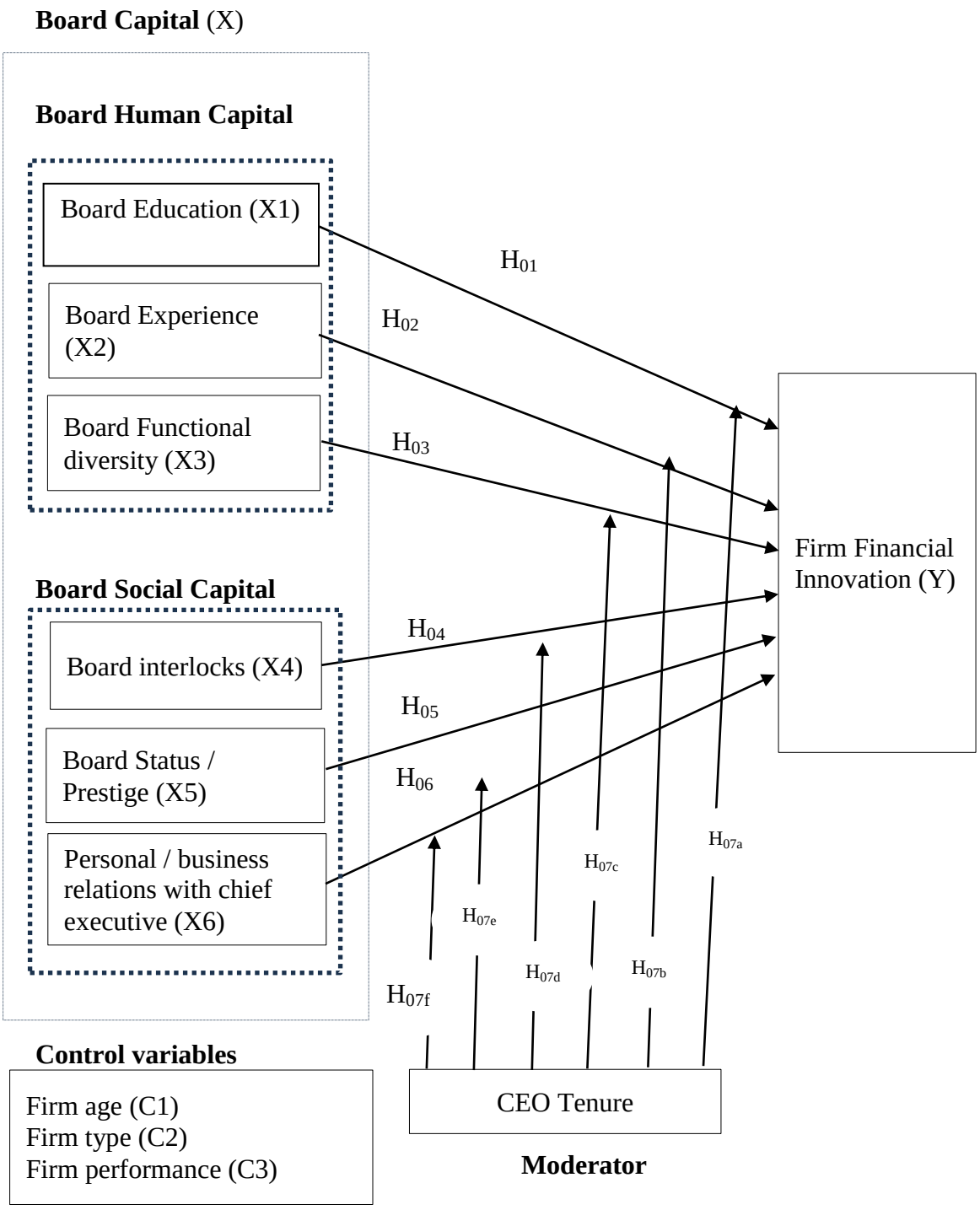
Summary of Knowledge Gaps

No	Area	Findings	Knowledge Gap
1	Board Education	Directors with formal education and other skills can contribute to finding creative solutions Educational degrees negatively affect Research & Development	Do educational qualifications held by directors positively affect firm innovation?
2	Board Experience	Directors with professional experience in the industry the focal firm operates in will better advise the firm on all key areas, including innovation. There is no evidence to support the argument that the more the directors' experience, the more innovative the directors will be.	Does the board experience positively or negatively affect firm innovation, if at all?
3	Board Functional Diversity	Board heterogeneity can have the potential for diversity of opinions that can create board conflict or enhance firms' access to resources, hence a double-edged sword	Does board functional diversity affect firm innovation?
4	Director Interlocks	Director interlocks provide access to key resources but can also decrease director commitment, lead to loss of director independence and limit director involvement in board tasks.	Do board interlocks positively or negatively affect firm innovation?
5	Prestige of directors	Prestigious board members invite persons with prestige to join their boards and in turn, those invited evaluate the firms they are invited to join.	Does board prestige positively or negatively affect firm innovation?
6	Directors' relationships with the CEO	Personal ties between the director and CEO can enhance reception of ideas by CEO, but the ties can also lead to director independence, hence a double-edged sword.	Do directors; connections with CEO positively or negatively affect firm innovation?
7	CEO Tenure	CEOs as key actors of a firm will impact the firms' innovation stance, and this will in all likelihood moderate the relationship between board capital and firm innovation.	Does CEO tenure affect the relationship between board capital and firm innovation?

Source: (Author, 2025)

2.10 Conceptual Framework

From the review of extant literature regarding the dependent and independent variables, this study theorised numerous h plausible relationships. The aforementioned relationships between the independent and dependent variables hypothesized are shown in the conceptual framework in figure 2.1, overleaf.



Source: (Author, 2025)

Figure 2.1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter summarises the research paradigm, research design, target population, sample size and sampling method, data collection and data analysis. Data collection has been expanded to include measurement of variables as well as address reliability and validity of data.

3.1 Research Paradigm

An examination that is grounded in experimentation or observation is known as empirical research (Bruns, 2007). Research can be broadly classified into two categories: quantitative research and qualitative research. Both need the use of scientific procedures in their conduct. Walliman (2005) asserts that research entails more than merely compiling data or facts without meaning or purpose, or only presenting it. Instead, research is an activity carried out with a specific goal in mind, whereby data is gathered and analyzed methodically, and an explicit objective directs the investigation (Saunders, Lewis & Thornhill, 2009). To solve research difficulties, it entails a number of meticulously thought-out and carried out steps (Sekaran & Bougie, 2010). A well-designed research project has a clearly defined goal, a well-organized research design, sufficient analysis to support the findings, a clear presentation of the findings, well-justified conclusions, open disclosure of any limitations, and adherence to high ethical standards (Cooper & Schindler, 2006). A research project must generate knowledge by

carefully analyzing primary, secondary, or both types of data (Sekaran & Bougie, 2010). Quantitative, qualitative, or a combination of the two types of data may be gathered. While empiricism is typically linked to quantitative research, numerous writers on qualitative research also stress the significance of empiricism as the cornerstone of any inquiry.

Thornhill, Saunders, and Lewis (2012) state that there are two primary schools of philosophy that deal with knowledge: ontology and epistemology. While ontology is a branch of philosophy concerned with identifying and categorizing the underlying principles and theoretical foundations of a concept, idea, or field of inquiry or study, epistemology is a subset of psychology that studies the nature, the source, and the limitations of human knowledge (Bryman & Bell, 2007). By distinguishing clearly between what is true and what is untrue, as well as between reality and illusion, epistemology aids in improving human understanding of the universe. Conversely, ontology is the study of what exists, its nature, its extent, and its relationships with other factions of the world (Gay, Mills, & Airasian, 2011).

The primary framework for illustrating assumptions and how they support and guide study planning is known as research philosophy. As there are numerous fields of study, there are generally distinct kinds of research philosophies. There are four main philosophical schools in the corporate world: positivism, interpretative, realism, and pragmatism (Saunders et al., 2012). The positivist social science approach served as the foundation for this study's research technique, which involved gathering and analyzing data from annual reports quantitatively. The research employed positivism. According

to positivist researchers, the natural scientist's philosophical stance stresses using observed social reality to draw generalizations (Saunders and Bezzina, 2015).

Research philosophy, according to Saunders et al. (2007), is the development of the research background, research knowledge, and its character. Detailed analysis, such as quantitative data, experiments, surveys, or statistical analysis, is a hallmark of positivist social science research (Neuman, 2006; Padgett, 2016). According to Baker and Lee (2011), this kind of approach is used in research that depends on the inspection and evaluation of quantitative data.

Nonetheless, it follows that the transitional areas that make up multiparadigm methods (Gioia and Pitre, 1990; Arghode, 2012) would be appropriate for the current study when it comes to selecting the research paradigm. Because multiparadigm approaches begin from different ontological and epistemological premises, they can tap into different aspects of organizational phenomena and generate distinctly different and uniquely informative theoretical views of the events that are being studied, according to the authors. This offers the possibility of producing new insights.

In a similar vein, Walliman (2017) maintained that reality exists independently of people and emphasized the significance of developing and coming to conclusions about theories based on empirical investigation. This is summed up in the argument that, as opposed to emphasizing subjectivity and interpretation, logical reasoning and mathematical proof are rationally justified. Because it is statistically tested, the reasoning covered above has relevance to this investigation.

Particularly when the data is predetermined and highly structured, which is related to the comprehension of this research, positivism is frequently associated with quantitative, scientific, traditionalist, and objective research. The research philosophy adopted in this study was positivism. This is a result of the research's rigorous structure, use of sizable samples—in this case, a census—and quantitative approach. But positivism's fundamental flaw is that it ignores the significance that the outside world places on various phenomena.

This study was influenced by Creswell's (2014) work and leaned toward positivism because it used quantitative data to build knowledge by verifying the underlying hypotheses. Therefore, an attempt was made in developing theory through deduction method and was value-driven research initiated and sustained by researcher's doubts and beliefs as outlined in the hypotheses provided in the earlier section (axiology).

The choice of positivism was based on its capacity and expertise in making real-time observations of occurrences. Additionally, it makes use of mathematical formulas and models that aid in generalization and extrapolation, allowing the empirical hypothesis to be tested objectively. According to Bryman and Bell (2007), positivism guarantees exact measurements, objectivity in problem-solving, and the validity and trustworthiness of findings.

3.2 Research Design

This empirical study employed a quantitative approach. Specifically, the research methodology employed in this investigation took a quantitative approach that involved

undertaking director surveys to gather, review, analyse and interpret data as well as carrying out a moderation analysis. Hierarchical regression study was conducted to identify relationships between board capital and firm financial innovation and further, to assess the moderating effect of CEO tenure on the relationship between board capital and firm financial innovation. Research can to a large extent be broadly categorised into three distinct streams namely descriptive, explanatory, or exploratory, (Zikmund *et al.,* 2012). Whereas the explanatory research is mainly aimed at hypothesis testing to try and establish the cause-and-effect of relationships between variables, exploratory research on the other hand seeks to provide insights on a given subject, thereby attempting to set the ground for further or deep investigation. For the purposes of this study, causal research design was preferred over the other designs, namely exploratory or descriptive research designs as this study primarily focused on specific research hypothesis that was aimed at generating or proffering managerially actionable results (Zikmund *et al.,* 2012).

Explanatory research is ordinarily conducted for a problem or situation which was not adequately or well researched in the past, demands priorities, generates operational definitions and provides a better-researched model. In causal or explanatory research, for example, it is about the ability of the research design to allow the researcher to make links or associations between variables, to rule out alternative explanations or rival hypotheses and to make inferences about causality. This research set out to establish the moderating effect of CEO tenure on the impact of board human and social capital on firm financial innovation.

According to Engel and Schutt (2010), explanatory research aims to ascertain causality between variables, identify causes, ascertain effects on the behavior of a social phenomenon, and forecast how one variable will change or vary in relation to another. For instance, it may seek to comprehend and explain the causes of a social condition like innovativeness. This ought to result in developing, expanding, testing, or changing a theory as well as providing an explanation for why certain things happen (Babbie & Mouton, 2010).

Glicken (2003) explains explanatory research as: “The type of research that attempts to provide meaningful and accurate conclusions from the considerable amount of information already available”. The "why" question may come up when a researcher has a thorough understanding of a problem and has described it. In these situations, the researcher may want to explain why things are the way they are and provide evidence of the elements required to either produce or eradicate a behavior pattern (Jackson, 2003). In other words, the research design adopted in this research is a causality research design. Causality research design is a research design to test the possibility of existence of a a cause-and-effect relationship between variables (Sugiyono, 2012).

Thus, explanatory research can establish a causal relationship between the independent and dependent variables (Grinnell, 2001). According to Grinnell (2001), explanation is the most legitimate and dependable type of knowledge since it can provide outcomes that are most likely to be generalized to other persons and situations, lie at the highest level of the knowledge continuum, and have the strictest constraints. Explanatory studies are often quantitative and deductive in nature. Its goal is to provide data on a sizable number

of cases while interpreting the data using statistical analysis (Adler & Clark, 2008). However, an explanatory objective may also be inductive, in which case qualitative data collection is required.

According to Babbie (2007), explanatory research provides an explanation for "why things are the way they are" and seeks "out causes and reasons" (Adler and Clark 2008). Explanatory research is closely associated with hypothesis testing. Theories are tested using deductive reasoning, which moves from the general to the specific (Hyde, 2000, p. 83). Hypotheses provide a framework for explanatory research that connects the study's objective to other phases of the process (variable formulation, data selection, and statistical testing). Scholars and students do explanatory research to determine the underlying source of a problem or to take an alternative approach to it.

3.3 Target population

The goal of this research was to study the moderating role of CEO tenure on the association between board human and board social capital and firm financial innovation in the financial services sector in Kenya. The basic financial services available in the market are payments, savings, credit, and insurance, Yap et al., (2024). In the promotion of financial inclusion, which means the process of including the unserved and underserved in the formal financial system, Yap et al., (2024) observe that policymakers have primarily focused on banks, digital finance, and micro-finance. This study included in the target population banks, digital finance, deposit-taking SACCOs and micro-finance institutions. Accordingly, the target population consisted of all the forty-three commercial banks in Kenya, (Aduda and Kingoo, 2012). All the nine MFIs (as at the

time of data collection) were included as well as top tier deposit taking SACCOs (thirty-eight) to enhance generalisability of the study findings. Out of the 215 deposit taking SACCOs as reported in SASSRA's annual SACCO supervision report at the time of data selection, thirty-eight were selected after setting a cut off threshold of Ksh 3 billion in loans and advances. The choice of the Ksh 3 billion threshold was to have the effect of including deposit taking SACCOs that are comparable in size to the commercial and micro finance banks. In total, therefore, the target population of this study was 90 units, as can be seen in table 3.1 below. The 90 units form the study unit of analysis in this study.

Table 3.1

Summary of Population and Sample

No	Area	Population	Sample
1	Banks	43 Commercial banks	All the 43 commercial banks
2	Micro Finance Institutions	9 microfinance institutions	All the 9 microfinance institutions
3	Deposit-taking SACCOs	215 deposit-taking SACCOs	38 deposit-taking SACCOs selected after setting a cut-off threshold of Ksh 3 billion in loans and advances

Source: (Author, 2025)

Under this study, board human and social capital of company directors as well as the innovation capabilities of the business firms were ascertained from questionnaires completed by at least one director of the focal organisation. CEO tenure was ascertained from the websites or published financial statements of the focal organisations.

3.4 Sampling Procedure

In seeking to answer the study's research question, the researchers from the outset considered, in the course of designing a project the type and number of the respondents who will be included in the study. Early on in the research project, consideration was given to questions like whether the entire population will be studied, whether sampling is preferred, which sampling procedure is most appropriate, how large should the sample be, whether a sampling frame is needed and if so, is one available, how representative should the sample be, and how potential problems, errors, and distortions will be prevented. What kind of administrative arrangements are needed for the seamless completion of these sampling procedures, are the necessary time, funds, and staffing available and, if so, how can they be rationally employed, and how will non-response be handled in the study were considered.

The outcomes of any research are significantly influenced by every stage of the analytical process. Though sampling is typically a part of the analytical process because it is typically not feasible to analyze the entire object, this study researched all the units qualifying to be studied. Therefore, this study constituted a survey of all the firms that qualified to be studied, as discussed in section 3.3 above, regarding target population. To better capture the significant players in the financial services sector in Kenya, this study covered all the forty-three commercial banks in Kenya, nine micro finance banks and thirty-eight deposit-taking SACCOs. For each firm, the researcher collected data from three board level officers: the board chairman, chief executive officer as well as the company secretary.

Consistent with Parent *et al*., (2023), we assumed that these three board – level members being among the senior most persons in a firm would be most knowledgeable about the organization's structure / processes, thereby having the most complete information. In the end, this study targeted a total of 270 respondents, three each from the 90 firms that qualified to be studied, a number deemed adequate for multiple regression analysis. Sampling adequacy tests were undertaken using Kaiser-Meyer-Olkin (KMO) and results summarised in chapter four of this thesis.

3.5 Data Collection Instruments and Procedures

This multi-method quantitative study employed both primary and secondary data with a view to provide answers to the research question. Saunders, Lewis & Thornhill (2009) define a multi-method quantitative study as one where a researcher chooses to collect quantitative data using, for example, both questionnaires and structured observation analysing these data using statistical (quantitative) procedures. Table 3.1 lays out the definitions of the various data that was gathered as well as the source of the same. Data was gathered using questionnaires specifically designed to measure variables regarding board human and board capital as well as firm financial innovation. Specifically, primary data was gathered mainly from chairmen, managing directors and corporate secretaries of commercial banks, micro finance banks and deposit taking SACCOs via use of questionnaires. The choice of the three key officers of the financial sector players was informed by the researchers' belief that they would be the most knowledgeable in terms of the entity's board capital as well as innovations.

In a letter accompanying the questionnaires, the directors of the companies selected as respondents were reassured that the data would be used solely for academic purposes and that confidentiality would be upheld. Using the mailing addresses of their respective companies, the board chairman, managing directors and corporate secretary received personalized letters (see Appendix 1) that went along with the questionnaires (see Appendix 5). The research objectives and the intended application of the findings were explained in these letters that were sent to the targeted respondents. In the instances where completed questionnaires were not received back by the researcher, telephonic follow up was done to chase up the targeted respondents to forward their completed questionnaires to the researcher. A research assistant was hired to help with data collection, coding and analysis. The data was collected between the months of April through to October 2016, after mailing the questionnaires earlier, in April 2016.

Secondary data included CEO tenure that was extracted from various sources, including company websites, personal profile accounts of CEO's and published annual statements. Firm age was obtained from company websites.

3.6 Measurement of Variables

There were numerous variables that researchers needed to measure and needless to say, the approach taken to measure those variables was central. In any research, which research questions can be asked and how they are answered depends on measurement, (Margulieux, Ketenci & Decker, 2019). There were six independent variables that were intended to measure board human and board social capital. Three control variables namely firm age, firm performance and firm type were included to purposely ensure that

the findings of this study were not likely to be confounded by the effect of the longevity of the time the firm had been in operation, the firm performance as measured by profitability and firm type given the structural differences in banks, micro finance institutions and deposit taking SACCOs. For the purposes of this study, board human capital was measured using three variables.

Measurement of educational qualifications has been operationalized in multiple ways in extant research. Elnahass et al., (2024), for instance, operationalized the construct by checking whether or not directors possessed a postgraduate degree and also, whether the degrees were attained from international educational institutions. Under this study, the educational qualifications of directors was one of the study variables representing board human capital, (Bantel & Jackson, 1989; Wincent et al., 2010 and Dalziel et al., 2011). Directors' experience (Chen, 2014) and board functional diversity (Haynes & Hillman, 2010; Wincent et al., 2010) were also included as variables to represent board human capital. Also, for the purposes of this study, board social capital was measured using three variables: director interlocks (Rass et al., 2013), directors' status (Johnson et al., (2011) and personal connections to the chief executive as envisaged by Adler & Kwon (2002) and Johnson et al., (2012). Firm financial innovation was the dependent variable. With regard to the control variables, firm age was included (Chen et al., 2014) as well as firm type and firm performance.

3.6.1 Dependent variable: Firm Financial Innovation

Extant literature regarding business innovation shows various methods of operationalization of innovation as a research construct. Review of extant literature

undertaken to enrich knowledge on the association of board social capital to business innovation yielded four distinct measures of innovation, namely quantity of inventive outcomes, like the number of patents; subjective ratings, like the appraisals made by directors or senior management; efforts made in innovative activities, like the distribution of resources; and, lastly, emphasis on innovation, like the incorporation of innovation into the company's vision, (Zheng, 2010). Chávez-Rivera, Ruíz-Jiménez & Fuentes-Fuentes (2024) operationalised measurement of innovation through the frequency with which a firm shows innovative performance in areas such as marketing, research and development, distribution, and new product development. In so doing, they used the responses that were recorded on a Likert-type scale from 1 to 7, on which participants indicated how often they innovated in the areas specified (1 = not frequently and 7 = very frequently).

In the literature on non-financial innovations in manufacturing, researchers mainly consider R&D numbers, patents, R&D expenditures, or the percentage of research personnel as indices of inventive activity (Cohen and Klepper, 1996). Significantly, according to Frame and White (2004), the organizations that support financial innovation do not offer comprehensive documentation of R&D operations in the financial sector. In a recent study, Beck, Chen, Lin & Song, (2016) created two financial innovation indicators and collected information on national R&D investment by the financial intermediation industry. The first of these financial indicators is the ratio of R&D expenditures to value added in the financial intermediation sector, which the authors refer to as R&D intensity (value added). The ratio of financial R&D to banks' overall operating costs is known as financial R&D intensity (cost), and it is the second metric.

On the other hand, Lerner (2006) employs a different methodology to assess financial innovation through the examination of recent Wall Street Journal articles.

The functional approach is another popular method of gauging technical innovation, in which the examiner looks at the intended outcome of the invention rather than the innovation itself. For instance, Farmer & Lafond (2016) analyze the decline in production costs of various energy sources and attribute the cost reduction to innovation in order to quantify innovation in the energy sector indirectly. The impact of financial innovations on various other factors, for instance economic growth (Levin, 1997) can be examined using a similar methodology. The problem with this approach when applied to financial innovation is complexity.

Understanding financial innovations and their effects can be difficult due to their complexity. Technology, opacity, interconnection, fragmentation, regulation, and reflexivity are the six drivers of complexity in financial innovation, according to Awrey (2012), who identified these drivers using an information-based methodology. The author successively examined in detail these six drivers by aggregating them in three categories: "those influencing our capacity to process information, those impacting the availability or intelligibility of the information itself and, finally, those accelerating the velocity of informational change." Arora & Gambardella (2010) demonstrated that financial innovation can favor information asymmetries even with perfect transparency when computational complexity is involved, highlighting the importance of the information element in quantifying financial innovations.

When it comes to patent counts, for example, it is not sufficient to use the quantity of patent applications filed as a proxy for business innovation because utility and invention patents differ in terms of their effects on the economy and the environment (Chen & Kim, 2023). We used the second operationalization for our study, taking into account contextual elements. Using a 5-point Likert scale, we attempted to rely on the directors' evaluation of the innovation of the financial services sector businesses where they serve as directors. Based on the assumption that the respondents have reliable firm-level information at their disposal, directors of the various financial services sector actors measuring innovation would offer superior insights on their firms' innovation.

Respondents were asked to answer questions 4a through d, 5a&b, and 6a through c in order to determine innovation. On a 5-point Likert scale, the respondents were asked to indicate how much they agreed with the following statements: their financial services sector firm has launched innovative products, policies, and structures to support innovation; it has actively pursued innovations; and it has integrated innovations into its strategic agenda. A score of 1 represented strong disagreement, whereas a score of 5 represented great agreement.

3.6.2 Independent variables

3.6.2.1 Educational qualifications of directors:

Corporate governance research suggests that managers' knowledge is not necessarily an isolated variable, as it was closely related to professional experiences (Kor & Sundaramurthy, 2009). It also supports the idea that diversity can be relevant at all

organizational levels, and when examined it at the higher levels, it is worth noting that the academic background is one of the most frequently analyzed aspects (Wiersema & Bantel, 1992).

Because of this connection, "human capital" is frequently represented by educational credentials. Numerous approaches have been used by existing research to operationalize educational qualities. Connelly, Gayle& Lambert (2016) offer a critical overview of the primary methods for measuring education in social survey research, including scaling approaches, categorical qualification-based measures, and years of education. They also review educational attainment measures for social survey research. In order to improve comparability and replication, Connelly et al., (2016) recommend using validated education measures in their study. Connelly et al., (2016) also urge that researchers give great consideration to the educational measure they choose to study and they should also regularly conduct suitable sensitivity analyses.

For the purposes of this study, board education is operationalized as the number of directors with at least a university degree (Wincent *et al*., 2010). Academic qualification of directors refers to the level of education attained by directors especially a higher degree, professional qualifications and specialty in business, accounting and finance field, (Akpanowo & Akpan, 2024) while Khan, *et. al* (2024) operationalise educational qualification of a board member characterized by any degree from a recognized institution.

Attendance at elite schools has also been used in extant literature to operationalize director's education (Johnson *et al*., 2010). In this study, we took the view that

attendance at elite schools would be rather a difficult construct to gather as there is no such categorization of schools in Kenya. For the purposes of this study, the level of a directors' educational qualifications was obtained from the respondents' answers to question 1d.

The respondents were asked to rate their agreement or disapproval with the following statement: "Directors of our banks' board possess at least one academic degree" on a 5-point Likert scale. Strong disagreement with the aforementioned statement would be indicated by a score of 1, while strong agreement would be indicated by a score of 5. This study predicted, logically, that banks' capacities for innovation would increase with the level of their academic credentials on the boards, and that innovation would consequently increase.

3.6.2.2 Industry – specific experience of the directors:

The impact of experience on judgment and decision-making has been a major area of focus in behavioral research in accounting. However, as is well known, experience has multiple dimensions, such as task-specific experience and broad domain experience (Wright, 1997). An essential component that hasn't gotten much attention is industry experience. In the context of an audit, for example, it is assumed that increased industry experience will result in increased effectiveness and efficiency as auditors build a knowledge base of the particular risks and audit procedures for a given industry. Researchers Kor & Misangyi (2008) discovered that in younger entrepreneurial firms, the liability of newness to the firm is mitigated by the presence of outside directors with substantial managerial industry experience, even in the absence of top management

industry experience. Experience is a vital determining factor that drives good firm performance principally because an individual with a relatively higher level of professional and technical experience and knowhow would be having a lot of relevant and pertinent information and situational context within a firm, (Humairo & Abidin, 2024).

Review of extant literature yields existence of varied methodologies that have been used in operationalising the construct appertaining to experience. In their study of the influence of gender diversity, age, education, and work experience of Top Management Team (TMT) on intellectual capital performance, Humairo & Abidin, (2024) operationalised work experience through measurement of the average experience of commissioners and directors measured using years one had worked in the banking sector. This study did not deem this a better operationalisation method as it ignores the law of diminishing returns. As such, individuals remaining in one company either as director or employee would not necessarily have accumulated experience that is incrementally beneficial to innovation, for instance.

Regarding the level of a director's industry-specific experience, this study utilised the measure that quantifies the number of posts held (Chen, 2014). Individuals who have occupied two or more posts were categorised as highly experienced while those individuals who have held one or no such post were categorised as poorly experienced, or indeed categorised inexperienced. Director's experience was measured with use of questions 1a and 1b.

Using a 5-point Likert scale, the respondents were asked to indicate their agreement to the statements that ‘Directors of our board have experience in other banks as employees’ and ‘Directors of our board have experience in other banks as board members’. A score of 1 indicated strong disagreement with the above statements, with a score of 5 indicating strong agreement. Consistent with logic, it was anticipated that the higher the experience, the higher the financial services sector firms’ innovation.

3.6.2.3 Functional diversity in the board:

Diversity on boards has primarily been examined from an ethical perspective, which has led to an emphasis on attributes like gender and ethnicity. Nonetheless, the cognitive method appears more appropriate when the objective is to explain organizational outcomes., (Belkacemi, Bouzinab & Papadopoulos, 2021). Thus, rooted in a resource dependency perspective, Belkacemi, Bouzinab & Papadopoulos, (2021) investigated the potential impact of directors’ deep-visible diversity (functional and educational diversity) on innovation performance and highlighted the negative effect of functional diversity (measured by diversity in the sectors of expertise), and on the opposite, the positive impact of educational diversity (measured by diversity in the fields of study) on innovation performance.

Scholars have focused on employees’ diversity and suggested that heterogeneous profiles make the organization more open to new ideas and better able to take advantage of external knowledge (Cohen and Levinthal, 1990). It has also been argued that diversity generates new combinations of internal knowledge, superior problem-solving skills, the emergence of new ideas, and leads to better exploitation of knowledge (Østergaard,

Timmermans & Kristinsson, 2011). In addition, it is seen as a source of creativity, would lead to more optimal sharing of information, reflexivity of tasks (Dahlin, Weingart & Hinds, 2005) and can influence innovation mainly through the presence of employees who have followed advanced and diverse studies, (Østergaard et al.,2011).

Furthermore, while some studies have reported a positive impact of board of directors' diversity on innovation, (Midavaine, Dolfsma & Aalbers, 2016), they remain plagued with many limitations, such as the consideration of a very small number of diversity types (Midavaine et al., 2016), or the focus on only "visible types of diversity" such as those related to gender and ethnicity (Cady and Valentine, 1999). Thus, consistent with the reflection of some scholars (e.g., Mahadeo et al., 2011), we consider that less-visible diversity such as functional and educational diversity could have a greater explanatory power regarding possible organizational outcomes such as innovation performance.

Functional diversity in extant literature has been operationalized in numerous ways other ways, chief among them a count of the number of different professions represented on a particular board of directors, (Wincent *et al*., 2010). Humairo & Abidin, (2024) measured gender diversity by taking the proportion of women as a percentage of the board. Given the wide array of functional disciplines that directors have studied, it would not undoubtedly complex to compute the proportions of the various disciplines of the members sitting on a board and hence the decision to rely on the subjective assessment of board chairmen and / or CEOs regarding the extent of functional diversity on the boards.

Question 1e was used to measure functional diversity for the purposes of this study. The respondents were asked to rate their agreement with the following statement on a 5-point

Likert scale: ‘There is functional diversity in our board due to the variety of professional backgrounds in our board of directors’. Strong disagreement with the above statement was indicated with a score of 1, and strong agreement was indicated by a score of 5. It makes sense that greater variety corresponds with a larger expectation of increased innovation.

3.6.2.4 Director interlocks:

Interlocking directorate research has grown in importance within the study of organizations, but it has also drawn more criticism. Remarkably, despite ongoing scholarly interest in interlocks, no thorough analysis of their effects on company financial innovation in the banking sector—particularly in Kenya—has been done.

When determining how much to invest in R&D for their own company, managers will probably follow the example of their linked firms. In the body of existing literature, R&D is used as a stand-in for innovation. The body of existing research also demonstrates that the effects of director interlock on company R&D spending vary depending on the types of interlocking directors and industry variables.

Director interlocks are often used in extant literature as a proxy for board social capital (Chen, 2014; Haynes & Hillman, 2010; Wincent *et al*., 2010) and are operationalized in numerous ways. Lu *et al.*, 2024, in their study of the influence of board interlocks and sustainability experience on transparent sustainability disclosure employed four different methods to measure board interlocks. First, using total interlocks, they quantified the total number firms connected to the focal firm via shared or common board memberships.

The researchers portended that higher value for this variable indicates greater access to external resources. Secondly, they used a measure for similar industry interlocks, to measure the industry intensity, that is, firms that are homogeneous or rather in a similar industry. With this measure, Lu *et al.*, 2024 postulated that interlocked firms in a similar industry can contribute experience and knowledge specific to the industry. Thirdly, they also had an operational definition of interlocks known as dissimilar industry interlocks, whereby the measure took account of the potential breadth of industry heterogeneity or rather dissimilarity. This measure of interlocking with firms in heterogeneous or rather dissimilar industries has the potential to expose the focal firm to diverse and unique knowledge, experience, and innovative concepts that may not be common within its own industry. Finally, interlocks were also operationalized as superior-transparent interlocks, where researchers identified the top 10 % of the sample with the highest variable under observation or investigation.

On their part, in their study on whether board friendliness and economic development affect firm's abnormal earnings, Talha, Rabbani, & Vu (2024) measured board networks in three ways, namely reference to educational, professional, and educational-professional relationships. Where two individuals have been directors or held relatively high-level executive roles in the same firm in the past, Talha, Rabbani, & Vu (2024) considered that to be a professional tie. Where two individuals attended university or tertiary college in the same institution and graduated within the same academic semester, the researchers deemed individuals to share an educational tie. The third and last tie, known by the researchers as a professional-educational connection arose where two did

not only finalise their education program from the same school within a year of one another, but they also worked concurrently in the same historical occupation.

For the purposes of ascertaining extent of director interlocks, this research sought to rely on the subjective assessment of the board chairmen and / or CEO knowledge of their respective firm's interconnectedness primarily due to the inaccessibility of information on the board connectivity especially considering that some of the directors sit on the boards of privately owned companies whose data is not freely available.

As a result, this study used question 1c to determine the interconnectivity of the boards in order to assess the degree of a board of directors' connectedness. The respondents were asked to rate their agreement with the statement, "The directors of our board sit on other boards of firms listed in Securities Exchange," on a 5-point Likert scale. Strong disagreement with the above statement was indicated with a score of 1, and strong agreement was indicated by a score of 5. In line with logic and the results of previous studies, the expectation of innovation potential increases with board interconnection (Chen, 2014; Haynes & Hillman, 2010; Wincent et al., 2010).

3.6.2.5 Prestige and Status of directors:

In order to operationalize socioeconomic status, a variety of variables are typically used, including an individual's income level, educational background, and employment position (Combs et al., 2023). The body of existing research demonstrates the frequency of intrinsic challenges in operationalizing status or prestige as a concept. One way to operationalize the status or prestige of board members is to review the biographical

statements of the directors in the annual financial statements to ascertain whether or not each director possesses prestige (Johnson et al., 2011). Five different categories of status were found in the previous study: academic, business, military, social, and political. All of these status types were handled similarly.

Three dimensions were used to operationalize status by Huang, Kabir, and Thijssen (2024). First, the study determined if a director's position and prestige came from ownership; CEOs who own more than 3% of the outstanding voting shares were classified as possessing status and prestige. Because they have a unique position as both manager and owner, individuals who own a major share in a business firm have the ability to exert influence over many aspects of the company, such as the board of directors. Additionally, CEOs and directors may gain prestige power from their heightened symbolic standing and influential friends who can give them helpful tools for making decisions. Secondly, they used founder status to operationalize prestige and status, with founders having a powerful status because of a unique position to influence other executives and board members. Lastly, they also operationalised prestige and status from the point of view of a CEO's standing or status because of affiliation with or schooling in prestigious educational institutions.

No prior research has claimed whether or not some types of status or prestige are more valuable than others. For the purposes of this research, the presence of status and prestige on the board was gauged by seeking to obtain the respondents' answers to questions 2a and 2b. Using a 5-point Likert scale, the respondents were asked to indicate their agreement to the statements that 'The directors of our board have high prestige

relative to directors of other banks' and 'The directors of our board have connections to persons who have high status and prestige'. Strong disagreement with the above statement was indicated with a score of 1, and strong agreement was indicated by a score of 5. It makes sense that the chances for innovation are stronger the more prestigious the board is.

3.6.2.6 Personal relationships or affiliations of directors with the chief Executive:

Research to date indicates that operationalizing directors' personal links or affiliations with the CEO is fraught with inherent challenges. Eight factors are operationalized as social capital by Ataei et al. (2024) in their study on the predictors of social capital in agricultural consultation, technical, and engineering service companies: involvement in the local community, proactivity in a social context, social trust, neighborhood connections, friends and family connections, ability to accept differences, appreciation of life, and work connections. It would seem that connections are an important component of social capital. To evaluate the CEO's network's depth and existence, Ataei et al., (2024) employed a questionnaire.

While friendships and other affiliations seem to strengthen or buttress the acceptability of that data, information, and insights, the literature that is currently available and reviewed in an effort to answer the research question of this study indicates that ties and other connections to other organizations act as a conduit for information, data, and other insights (Johnson et al., 2011). In this study, the answers to questions 3a and 3b were used to ascertain whether or not the respondents had friendships or other ties.

The respondents were asked to rate their agreement with the following statements regarding the requirements for joining the board of directors: personal relationships with the chief executive officer and business relations with the bank, on a 5-point Likert scale. Strong disagreement with the above statement was indicated with a score of 1, and strong agreement was indicated by a score of 5. Greater friendships and other relationships would be revealed by higher ratings on these two questions, which may increase the acceptability of the directors' information. It makes sense that the more ties a board member has both personally and professionally to the main enterprise, the more promising the innovation potential.

3.6.3 Moderating variable: CEO Tenure

In their study of corporate sustainability and financial performance: the moderating effect of CEO characteristics, Almulhim & Aljughaiman, (2023) operationalised CEO tenure by counting the number of years since the CEO was first appointed. In the same vein, CEO tenure construct was operationalised using the CEO's number of years in office as the CEO, (Simsek, 2006). For the purposes of this study, CEO tenure was ascertained by review of the corporate websites and published financial statements, to extract the number of years the CEO had served that financial services sector firm as CEO. Prior studies on the effect of CEO tenure on innovation included how long the CEO had been in the focal firm, not necessarily in the CEO position (Wu, 2013).

Under this study, CEO tenure only dealt with the length of time or duration in the CEO position. Time spent in other roles within the industry was captured in the responses to the question gauging the directors' industry experience. Another important area of

inquiry has focused on the tenure and CEOs' ability to deliver on their business objectives by influencing others, including the ability to maintain the CEO position that can be difficult to manage during times of poor firm performance. CEO tenure serves as a stand-in for CEO authority in this sense. For example, Shen (2003) defines CEO tenure as a measure of CEO power, whereas Miller (1991) defines it as a reflection of a CEO's propensity to reject external pressures for innovation and to have influence and autonomy. According to Evans et al. (2010), tenure is a sign of a CEO's stronger negotiating position with the board. The current body of information centers on three key areas: (a) CEO contestation and entrenchment; (b) CEO influence and discretion; and (c) the contextual setting.

3.6.4 Control Variables

Although one of the advantages of undertaking research with numerous dependent or predictor variables is that one will get a more complete picture of the cause-and-effect relationship among variables, one of the disadvantages is that it will most likely be more difficult to communicate those results, (Rink, French, & Graham, 1996).

This study was not and could not have been designed to examine a complete model for innovation but rather to investigate the moderating effect of CEO tenure and board human and social capital on firm financial innovation. In practical terms, it is neither possible nor necessary to develop a model that examines all the independent variables that can be expected to have an effect, however meagre, on the dependant variable. To account for the influence of other factors on firm financial innovations, a set of control variables, which are detailed below, are incorporated into model. We discuss the three

control variables of this research project here below, to provide context as well as indicate the justification for their inclusion.

Based on prior literature, there are many other variables that can be expected to have an impact on firm financial innovation. For the purposes of this study and in keeping the parsimony principle, this study included three control variables. To guarantee that our findings were not influenced by the impact of firm age, firm performance, and company type on firm financial innovation, it was judged necessary and adequate to control for these factors.

The study took firm age into account, as a control variable. Young businesses typically have some inherent flaws, like undeveloped relationships, a high failure rate, a lack of physical resources, a brief operational history, and difficulty producing trustworthy financial audits and business records, all of which can lead to significant financing challenges (Yang & Yang, 2023). This may in turn constrain a firms' innovation capabilities and hence the need to control for firm age. In line with Lew et al. (2023), the duration of the firm was used to determine its age because research and development spending, which is a good indicator of innovation, has been found to negatively correlate with a firm's age in certain studies (Chen et al., 2013). Corporate websites provided the firm age information (Appendix 5). Firm age (FA), in accordance with Yang & Yang, (2023), is the number of years that have elapsed between the company's founding and the observation year.

Profit before taxes, or firm performance, was taken from the financial accounts that were published or reported. According to Ali, Jia, Lou, and Xie (2023), larger businesses have

the resources and Information Technology teams to capitalize on new technological advancements, which will increase their market worth. Organizations may have difficulties when digital innovations are introduced, especially if they lack the infrastructure, expertise, or resources needed to manage and execute these innovations, (Jung & Shegai, 2023). On this basis, this research found it important to control for firm performance to ensure that this did not confound the results of the study. Finally, firm type was included as a control variable, to take account of structural differences between commercial banks, deposit taking SACCOs and micro finance banks.

3.6.4.1 Firm Performance

Firm performance is often measured and quantified in either financial performance and / or using metrics that deal market-based performance. A close scrutiny of the extant literature regarding corporate governance and firm level performance shows that varying metrics have been deployed in studies to calibrate and measure firm performance. These metrics are categorised into accounting - information based and market - information - based metrics. The old adage of what you cannot measure cannot be improved applies in business as well. Accordingly, performance measurement has its place in effective management of an organization as well as in the enhancement or improvement of the processes since only metrics that are capable of being measures lend themselves to improvement.

There are numerous approaches that have been studied and applied to financial performance measurement. Return on Equity (ROE), Profit Margin (PM), Earnings Per Share (EPS), Divided Yield (DY), Price-Earnings Ratio (PE), Return on Sales (ROS),

Expense to Assets (ETA), Cash to Assets (CTA), Sales to Assets (STS), Expenses to Sale (ETS), Operating Cash Flow (OCF), Return on Capital Employed (ROCE), Labor productivity (LP), Critical business Return on Asset (CROA), Cost of Capital (COC), Market Value Added (MVA), Operation Profit (OP), and Return on Investment (ROI) are a few of these metrics. Operating profit was employed in this study as a proxy for company success. There are two reasons why this measure was chosen: First, it was easily available as most players in the banking sector do disclose the metric and second, because it is an indicator of resource availability as most businesses tend to seek to convert profit into cash.

3.6.4.2 Firm Age

One of the fundamental characteristics of organizations is firm age, which is typically understood to refer to the duration of time the organization has existed since its establishment, (Bakker & Josefy, 2018). Recently, significant shifts have changed the business landscape with a consequent impact on how firms age as well as limiting the age the firms may attain. The construct on firm age is non trivial as it affects firm strategy, degree of entrepreneurship and organization theory (Agarwal, Sarkar and Echambadi, 2002).

The body of existing literature demonstrates that the use of firm age as a control variable includes the following: firm age as a proxy for firm experience (Lahiri, 2010); legitimacy, knowledge retrieval, innovation and learning, organizational failure and performance, executive compensation, firm objectives, availability of information , flexibility or alternatively inertia or stability, resources, imitation, board decision making

(Tuggle, Schnatterly and Johnson, 2010), and role structure. In summary, there is a very wide range of constructs that age is thought to capture or proxy for. This broad range can be attributed, in part, to the great diversity of research that use firm age as a pertinent issue. We discovered that age is used as a control in so many different research areas although the dependent variables on which age is regressed are not very consistent.

3.6.4.3 Firm Type

The patters of innovation, strategy, choice of specialisation in goods and services change significantly in market economies with various institutions because they have diverse systems in place for coordinating economic activity and because different types of businesses have varied approaches to innovation (Jones & Walter, 2017). Companies with various organizational capacities and governance setups employ these innovative tactics in various institutional contexts to differing degrees (Jones & Walter, 2017). It is thus important to control for firm type as it is likely mainstream banks, non-bank financial institutions and SACCOs will undoubtedly have differences emanating from the type of banking businesses they undertake. Table 3.2 below summarises how all the variables used in this study were measured.

Table 3.2

Measurement of Variables

Data type	Data Object	Definition	Source of data
Primary	Educational qualifications of directors	Possession of at least one academic degree by directors	Questionnaire, Question 1d
	Directors' experience	Experience of directors in other banks either as employees or directors	Questionnaire, Questions 1a&b
	Functional diversity	Variety of professional backgrounds in board of directors	Questionnaire, Question 1e
	Director interlocks	The directors' membership in other boards of firms listed in Securities Exchange	Questionnaire, Question 1c
	Director's prestige	High prestige relative to directors of other banks or board member's connections to persons who have high prestige	Questionnaire, Questions 2a-b
	Personal or business relations with Chief Executive	Criteria for joining our board includes either business relations with the bank or personal relations with Chief executive	Questionnaire, Questions 3a&b
	Innovation	Subjective evaluation by respondents of innovation of the commercial, micro finance banks or deposit taking SACCOs	Questionnaire, Questions 4a-d, 5a&b and 6a-c
Secondary	List of respondents	Names and addresses of managing directors of commercial banks, micro finance banks or deposit taking SACCOs	Kenya Bankers Association, SASSRA Report or corporate websites
	Firm age	Number of years since the establishment of the commercial or micro finance banks or deposit taking SACCOs, see Appendix 5	Corporate websites
	CEO tenure	Number of years a CEO has held that position	Corporate websites, and published financial statements

Source (author, 2025)

3.7 Validity and Reliability of Research Instruments

In order to guarantee validity and reliability, the study was planned to improve the caliber of the measuring tools used in the investigation. When creating, evaluating, and analyzing a research instrument, construct validity can be generally evaluated from three perspectives: face validity, content validity, and criterion validity. A layperson or someone who is not an expert in the field can concur that the suggested method is valid in researching the question. Face validity, on the other hand, refers to a subjective rather than an objective assessment about whether a test measures the concept it is specifically designed to measure (Greener, 2008). Conversely, content validity describes how well a measure encompasses the research or area of interest (Zikmund et al., 2012). Finally, the operationalization of the study constructs under investigation is the focus of criterion validity.

This study's construct validity was attained by means of preliminary conversations with two directors of particular commercial banks. The final list of directors for the companies in the study sample did not contain these two directors. Additionally, before the questionnaires were sent, early talks were had with two university faculty members to make sure the study instrument's face, criterion, and content validity were all in order. The clarity of the study instrument's inquiries and the extent to which the scales it used acquired the necessary data were both addressed by these reviews.

Faculty members at the university reviewed the research instrument to make sure the study included their years of expert research experience. The items were reexamined and the research instrument was adjusted as needed in accordance with the expert

recommendations. Items that were judged inappropriate were taken off the scale, and appropriate items from the proposed items were put in their stead. Items that need revision were also updated in accordance with the advice of experts. In order to assess reliability for the sake of this study, Cronbach's alpha coefficients were calculated for each and every board social capital and human capital construct (Subramaniam and Youndt, 2005). To determine whether or not the measures used in this study were sufficiently reliable, the coefficient alphas were calculated and compared to the recommended value of 0.60 (Zikmund et al., 2012). As such, the results of this investigation can be considered a solid basis for additional examination and reliable scientific findings.

3.8 Data Processing and Analysis

Multiple regression analysis was performed as part of statistical analyses to examine the connection between firm financial innovation, board social capital, and human capital. In addition, a moderation study was conducted to examine the moderating effect of CEO tenure on the association between firm financial innovation and board social and human capital. A multiple linear regression model was used to experimentally examine the major impact of board human and social capital on company financial innovation as a business outcome (Haynes & Hillman, 2010). For the purposes of this study, multiple regression was utilized to ascertain whether and how strongly there was a relationship between the independent and dependent variables. The degree of causal relationship between the board of directors' human and social capital and business financial innovation was assessed using modeling.

In chapter four, it was determined and reported how six predictor variables, which were derived from the human and social capital conceptions, affected the one dependent variable, which is company financial innovation. SPSS was used for data coding and analysis. For the purpose of statistical data analysis and academic reporting, descriptive statistics and cross tabulation were employed.

Beta coefficients were scientifically computed and analyzed using Pearson product-moment correlation to ascertain the direction and strength of the association between the various human and social capital characteristics and business financial innovation. The coefficient matrix was examined and examined for indications of multicollinearity or lack thereof. Additionally, this study determined that more multicollinearity tests, such as the Variance Inflation Factor (VIF) computation, were required. The estimated values were compared to the rule of thumb's 10 or more values, which is the cutoff point utilized in the body of existing research to determine whether multicollinearity is present in the data (Salkind, 2007).

This study assessed and determined that lagged hierarchical regression analysis would be appropriate and effective to be used in seeking answers to the research question. First, the dependent variable, innovation, was regressed against the main effects variables, which were directors' education, board experience, director interlocks, board prestige, personal and business connections to chief executive, and board functional diversity, one by one.

Lastly, a regression analysis was performed against the dependent variable to incorporate the moderating or interacting influence of CEO tenure. Shrunken or adjusted R^2 was

calculated for each model in this study to indicate the proportion of the dependent variable's variation that the independent or control variables in the model account for.

To determine the existence and strength of links between board human and social capital and business financial innovation, we made judicious use of inferential statistics. The major impact of board human and social capital on firm financial innovation as a business outcome was empirically examined using a multiple linear regression model in accordance with Haynes and Hillman, (2010).

3.8.1 Model Specification

A review of the literature that was available indicated that there is now disagreement among researchers over how many board capital variables should be included in model specifications for empirical research. In order to specify a model, methods for calculating the regression coefficients' measures must be applied. Including a wide range of variables may result in two types of issues: measurement mistakes that accumulate over time and the need to weight variables that are unlikely to have an equal impact on the dependent variable.

When measuring simple variables such as board independence, total measurement errors can be substantially smaller than when measuring a large number of variables combined (Bhagat & Bolton, 2008). In line with this perspective, we included the six independent, three control, and one dependent variable (firm financial innovation) in our model formulation..

Firm financial innovation is the principal area of focus given the role it plays in economic development and job creation. Under the study, nine models were built: one for the control variables (firm age, firm type and firm performance), a second one for the main effects, a third for the moderation and lastly, six models for the interaction effects of CEO tenure on firm financial innovation.

To test hypothesis H_{O1} to H_{O6} multiple regression models were generated based on the six dimensions of board capital as independent variables and firm financial innovation using the following hypothesis.

$$y = \beta_0 + \beta_1 c_1 + \beta_2 c_2 + \beta_3 c_3 + \varepsilon_1 \quad \text{.....1 (control effect)}$$

$$y = \beta_0 + C + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \varepsilon_2 \quad \text{.....2 (direct effect)}$$

Y = firm financial innovation

X_1 = board of directors' education qualification

X_2 = board of directors' experience

X_3 = board of directors' functionality diversity

X_4 = board of directors' interlocks

X_5 = board of directors' prestige

X_6 = board of directors' relation with CEOs

c_1 = firm age

c_2 = firm type

c_3 = firm performance

C = control variables

β0 = Constant term

3.8.2 Testing for Moderation

Moreover, the six sub-hypotheses of the seventh hypothesis sought to identify the moderating effects through the use of a hierarchical regression model. The hypotheses were investigated using moderated regression analysis to ascertain the extent to which the moderator variable impacts the relationship. Regression analysis was used to examine the moderator impact in accordance with Aiken & West's (1991) recommendations.

Following the advice of Hayes (2012) and Baron & Kenny (1986), the moderating influence of CEO tenure on board capital and firm financial innovation was examined using the Hayes model. This offered proof for accepting or rejecting H07. Analyzing the interaction effect between board capital and firm financial innovation and considering the importance or insignificance of the resultant effect served as the study's moderating test.

There were several steps in the procedure, and the resulting "R square," "F change," and "p values" were reported. All impacts had to be significant for moderation to exist. The moderation equations below illustrate and provide a summary of the moderation testing procedure mentioned above..

$$y = \beta_0 + C + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 m + \varepsilon_3 \quad \text{……..3}$$

$$y = \beta_0 + C + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 m + \beta_8 x_1 m + \varepsilon_4 \quad \text{…..4}$$

$$y = \beta_0 + C + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 m + \beta_8 x_1 m + \beta_9 x_2 m + \varepsilon_5 \quad \text{……5}$$

$$y = \beta_0 + C + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 m + \beta_8 x_1 m + \beta_9 x_2 m + \beta_{10} x_3 m + \varepsilon_6 \quad \text{……..6}$$

$$y = \beta_0 + C + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 m + \beta_8 x_1 m + \beta_9 x_2 m + \beta_{10} x_3 m + \beta_{11} x_4 m + \varepsilon_7 \quad \text{……...….7}$$

$$y = \beta_0 + C + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 m + \beta_8 x_1 m + \beta_9 x_2 m + \beta_{10} x_3 m + \beta_{11} x_4 m + \beta_{12} x_5 m + \varepsilon_8 \quad \text{…….….8}$$

$$y = \beta_0 + C + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 m + \beta_8 x_1 m + \beta_9 x_2 m + \beta_{10} x_3 m + \beta_{11} x_4 m + \beta_{12} x_5 m + \beta_{13} x_6 m + \varepsilon_9 \quad \text{……..…….9}$$

Where,

Y = firm financial innovation

X_1 = board of directors' education qualification

X_2 = board of directors' experience

X_3 = board of directors' functionality diversity

X_4 = board of directors' interlocks

X_5 = board of directors' prestige

X_6 = board of directors' relation with CEOs

m = moderating variable (CEO tenure)

C = control variables

β0 = Constant term

The models allowed us to estimate the moderating effect of CEO tenure and board capital on the firms' firm financial innovation.

3.9 Regression Assumptions

It was thought wise to do diagnostic tests first in order to explore the fundamental assumptions of regression before attempting to perform any multiple regression analysis (Cohen, 2003). Using the assumptions of linear regression, the statistical data was examined for its suitability in the regression results. Multiple regression equations were the models utilized in this investigation, hence the following assumptions were established and the necessary tests were conducted to validate them.

For the purposes of this study, it was assumed that if the fundamental assumptions of linear regression were broken, there would be no meaning to the interpretation of the regression results. This may lead to the reporting of erroneous probability values, biased r-squared, biased standard errors, and biased coefficients of estimation, (Chatterjee & Hadi, 2013). Four basic assumptions of multiple regressions were discovered by Osborne and Waters (2002): linearity, homoscedasticity, normality, and collinearity.

3.9.1 Test for Normality: For most statistics to be analyzed, including multiple linear regression, the data must have a normal distribution. A single peaked bell shape is produced by normality in data when the dependent variable is plotted against the explanatory variable. This is significant because, in order for parametric tests to be legitimate, the data must be normally distributed in order to produce accurate and trustworthy findings regarding reality (Ghasemi & Zahediasl, 2012). The dependent variable prediction errors ought to lie halfway between the goodness of fit line and the dependent variable. Results that defy normality will not allow for the drawing of reliable conclusions.

When assessing normality, common statistical procedures include normality tests, numerical tests, and visual tests (such Q-Q, quantile-quantile plots, P-P, probability-probability plots, and histograms). A visual evaluation of the distribution is usually unreliable and cannot ensure accuracy. The distribution curves' kurtosis and skewness coefficients are examined by the more structured numerical approach.

The assumption of normality is frequently considered crucial in multivariate analysis. The goal of normality testing is to verify if the data distribution is normal for each variable and under linear assumptions (Hair et al., 2010). There are two different ways to test for normality: the univariate level, which looks at the normality of a single variable, and the multivariate level, which looks at the normality of multiple variables. According to Hair et al., (2010), a variable or set of items must satisfy both univariate and multivariate normality if they satisfy multivariate normality. However, the contrary is not necessarily true, meaning that the presence of a univariate normality test does not imply the presence of multivariate normality. According to the null hypothesis (H0), the distribution of variables is normal.

Likewise, the Kolmogorov-Smirnov test was employed to verify the normality of the distribution. It is expected that the Kolmogorov-Smirnov statistic will be below the critical values Dn = 0.092 is the the maximum when using the significant level of 5%. For results to be broadly applicable and generalizable, normally distributed data is essential. The normality test was performed using statistical measures of shape estimation, such as skewness and kurtosis. A variable is considered normal if its skewness and kurtosis values fall between -2 and +2. (Williams et al., 2013).

3.9.2 Test for Linearity: This describes the relationship between the change in the dependent variable and the change in the predictor or independent variables. Pearson product moment correlation was used to assess whether a linear statistical relationship exists. According to Saunders (2012), a high correlation value falls between 0.5 and 0.7, whereas an ideal correlation has a value of 1. A strong positive correlation is defined as being between 0.9 and 1. A weak association was shown by values less than 0.5. A correlation of -1 and 0 indicates a negative connection, whereas a value of 0 indicates no association at all. Fitness of linear regression was not required when the variables X and Y are linearly connected because linearity between the predictor and dependent variable is already presumed.

Scatter plots are one tool for testing linearity (Appendix VI). The following hypothesis is evaluated in order to determine linearity, per Hair et al., (2010). The alternative hypothesis (H1) presupposes linearity among the variables in the model, while the null hypothesis (H0) asserts that there is no link between any of the variables. To ascertain linearity, the ANOVA test was utilized. Using SPSS, an ANOVA test of the linearity between each predictor variable and the dependent variable was performed to see whether the connection between the variables was linear. In order to be deemed present, the F statistic needed to be statistically significant ($p<0.05$), meaning that it had to be less than 0.05.

3.9.3 Test for Homoscedasticity: Heteroscedasticity is the random dispersion or variability of the dependent variable's point estimates across the values of the independent variable that makes the prediction. According to Hair et al., (2010),

homoscedasticity suggests that dependent variables have identical levels of variability over a spectrum of continuous or categorical independent factors. According to Nordstokke & Zumbo (2010), for the probability values to satisfy the homoscedasticity condition, they must be greater than 0.5. Accordingly, Levene test was used to test for homoscedasticity.

Furthermore, homoscedasticity—the variance of error terms being similar across the values of the independent variables—was considered to be present in the study. According to Hayes and Scharkow (2013), the reliability of the inference and the hypothesis's statistical power might be impacted if this condition—that is, the existence of heteroscedasticity—is not met. The Levine test in SPSS was used to test for heteroscedasticity. The significance value of the statistic received the most attention as heteroscedasticity would have suggested differently, and it was expected to be more than 0.05 (non-significant) in order to avoid violating the assumption.

3.9.4 Test for Multicollinearity: According to Midi et al., (2011), this is described as a high association between two or more independent variables, producing redundant data. Multicollinearity is present when there is a high Pearson correlation of greater than 0.8 between two or more independent variables. In order to claim that there is no multicollinearity between the independent variables, a researcher must have multicollinearity test results (VIF) for all variable constructions below 10.00, according to Ria (2023). According to Hair et al. (2010), multicollinearity does not exist when the Variance Inflation Factor (VIF) is less than 10, and tolerance should be more than 0.2 for all variables.. In order to determine whether the variables in the regression model had a

high degree of correlation with one another, VIF and tolerance were employed in this study. Utilizing VIF and tolerance statistics, a diagnosis was made. Multicollinearity is confirmed by large VIF values and small tolerance levels (Keith, 2006).

3.9.5 Autocorrelation: Auto correlation occurs when the residuals are not independent of one other (Tabachnick & Fidell, 2001). The presence of autocorrelation in the linear regression model was assessed using the Durbin-Watson test. Although Durbin Watson can accept values in the range of 0 to 4, numbers close to 2 suggest no autocorrelation. According to a conservative criterion, values larger than 3 and less than 1 must cause concern. Generally speaking, values more than 1.5 and less than 2.5 indicate that the data are not autocorrelated (Field, 2009). This is summarized in table 3.3.

Table 3.3

Summary of Diagnostic Test

Assumption	**Test**	**Threshold**	**Comment**
Normality	Kolmogorov-Smirnov	P>0.05	Normal Distribution
Linearity	ANOVA test	P<0.05	Linear relationship
Autocorrelation	Durbin-Watson test	1.5< d<2.5	No Autocorrelation
Multi-Collinearity	Variance Inflation Factor (VIF)	VIF<10	No Multi-collinearity
Homoscedasticity	Levene's Test	P>0.05	Homoscedastic

Source (author, 2025)

3.10 Ethical Consideration

Extant literature shows that there is a strong association between research ethics and research integrity, with research ethics being defined as the principles and regulations to be followed by researchers when conducting scientific research and research integrity

constituting the practice of these codes, (Muthanna, Chaaban & Qadhi, 2024). Research ethics knowledge and education is fundamental to the development and adoption of a culture of ensuring that research is conducted with the right levels of responsibility, (Kiwanuka, *et al.*, 2024).

Extant research offers and points to numerous ethical issues that researchers are expected to consider in the course of developing, running and undertaking as well as reporting on their research projects. Broom (2006) observes that upholding high ethical standards is necessary and crucial in all social research projects and it insulates or rather protects those individuals participating in a research, whether as participants or researchers, enhances the overall quality information and data gathered for the research and enhances the likelihood that future researchers will have ensures that future researchers will continue to have access to and audience with research participants within the community.

Broom (2006) also observbes that research ethics have come to be commonly defined as the moral problems that can be faced with regard to scientific or other academic research by individuals engaged in a research, the subjects of the research or their social environment and goes on to postulate that for a research undertaking to be considered and appear to be ethical, the honour or dignity, rights and entitlements, safety and well-being of participants should be a cardinal consideration.

As reported in Broom (2006), the Economic Social Research Council (ESRC), the main funder of economic, social, behavioral, and human data science in the United Kingdom, provides a number of important guidelines to be followed when doing social research. Research should be conducted with integrity and quality in mind; (2) research staff and

subjects must be fully informed about the goals, procedures, and potential applications of the study as well as the risks associated with participating in it; (3) respondents' anonymity and the confidentiality of the information they provide must be respected; (4) research participants must participate voluntarily and free from coercion; and (5) harm to research participants must be avoided; (6) the independence of research must be clear, and any conflicts of interest or partiality must be explicit. This research was designed in manner as to heed the foregoing recommendations from the ESRC, to the extent possible and this is discussed here below.

Care was made to guarantee that this study was carried out ethically. A cover letter and questionnaire were distributed to the intended respondents during the data collection phase. The cover letter included information indicating that replies to the questionnaire will be handled with the highest confidentiality and that it was created for academic purposes. Additionally, the researchers' phone number and email address were given to the respondents so they could voice any concerns.

The study adhered to research ethics by making sure that no respondent would be harmed, harassed, or had their rights infringed. Additionally, the respondents' privacy was protected both during the data collection procedure and during the questionnaire's development and administration. The purpose of the study was to guarantee respondents' anonymity and confidentiality by safeguarding their identity, encouraging them not to give their names on the questionnaire, and providing reassurance that no third party would see their information. Because of this, it was not necessary to include names on

the questionnaire when gathering data. Furthermore, the data that the respondents voluntarily submitted will only be utilized for academic research.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of the data and discussion of the findings. Data were collected by the use of questionnaires. The key objectives of this study inform the structure of this chapter. The results presented here are organized under seven key sections: descriptive statistics, reliability analysis, factor analysis, correlation analysis, diagnostic tests, test for direct effect and moderation results.

4.2 Response Rate

Response rates are a key indicator of survey research success and a methodological concern, (Frohlich, 2002). Furthermore, response rates in a survey that involves management cadre is often taken as an indicator or rather vital barometer of success in survey research. According to Frohlich (2002), response rates are frequently regarded as an indicator of the meticulousness with which a study was conducted as well as a tacit indication of the research's management significance. The response rate plays a major role in the trustworthiness of survey research findings, as low return rates are assumed to indicate biases in the data. Leslie (1972). Additionally, since low response rates might skew survey results, it's critical to investigate the consequences of non-response. (Templeton and others, 1997). Response rates have been reported in the popular press to be declining in the past decade for all manner of surveys. Researchers are actually concerned about this occurrence of low response rates since survey respondents'

responses can differ significantly from nonrespondents', leading to a skewed assessment of the attributes, (Sheehan, 2001). With this situation obtaining and faced with the difficulty of collecting reliable and representative data at an acceptable cost, researchers have to monitor the response rates for their studies to ensure it is sufficient for statistical analysis.

While the body of research indicates that a lower response rate in a survey does not always indicate a higher level of nonresponse bias, low response rates are frequently seen by journal reviewers as a methodological flaw in such surveys (Beehr, Kim & Armstrong, 2024). The study's response rate was displayed to highlight the quantity of completed surveys as well as those that were discarded because of anomalies and missing data. The response rate and returned questionnaires are displayed in Table 4.1.

Table 4.1

Response Rate

Sample size	Number	Percent
Distributed Questionnaire	270	100.00
Returned questionnaire	211	78.15
Not returned questionnaire	59	21.85
Non usable questionnaire	47	17.40
Usable questionnaire	**164**	**60.74**

Source;(Field data, 2025)

Thirty-eight deposit-taking SACCOs, nine microfinance banks, and forty-three commercial banks in Kenya received 270 questionnaires from the researcher. Two hundred and eleven (211) of the 270 total questionnaires that were distributed were completed and returned to the researcher. However, to increase the response rates, the researcher had to contact the intended respondents by phone calls and emails where there were delays in returning the completed questionnaires. The purpose of this research

intervention was to prevent poor response rates. Above all, studies with low response rates are instantly susceptible to justifiable worries of non-response bias (Frohlich, 2002). Insufficient response rates may result in the loss of valuable research funds and time spent searching for eventual non-participants. Targeted respondent follow-ups are in line with other research showing that response rates differ depending on the topic and methods explored (Asch, Jedrziewski, & Christakis, 1997). The follow-ups aligned with multivariable models that indicate telephone reminders and written reminders accompanied by a copy of the instrument are each linked to response rates that are almost 13% higher than those of surveys that do not employ these strategies (Asch, Jedrziewski, & Christakis, 1997). The study ultimately had a response rate of 78.14% of all the questionnaires that were sent out.

However, out of the 211 surveys that were returned, 47—or 17.4% of the total—were either incomplete or contained outliers, making them unusable for additional data analysis. In terms of missing data, Zhou & Bouadjenek, (2024) outline three missing mechanisms that are defined in the literature: Missing Completely At Random (MCAR), Missing At Random (MAR), and Missing Not At Random (MNAR) and further notes that each presents unique challenges in imputation. Zhou & Bouadjenek, (2024) observe that most existing work are focused on MCAR that is relatively easy to handle and also note that the special missing mechanisms of MNAR and MAR are less explored and understood. In the end, 164 surveys were suitably and genuinely filled. The study's response rate was therefore assessed at 60.74%, significantly higher than the 30% acceptable rate in the field (Sekaran & Bougie, 2013) and based on this, no further work

was deemed necessary to be undertaken on questionnaires not returned (21.85%) or questionnaires not usable: due to either missing data or outliers (17.4%).

4.3 Data Cleaning and Screening

Hair et al., (2010) state that in order to prepare the data for multivariate analysis, it is typically imperative to filter, modify, and transform the collected data, check the data for missing elements, and handle any outliers or errors before beginning any first data analysis. In order to remove outliers and missing data, the data was inspected, altered, and converted prior to the first data display.

Data preparation is the process of collecting, arranging, and merging data into a single file or data table, usually for use in statistical analysis (Karen, 2019). Both qualitative and quantitative analysis's minimal requirements were satisfied in order to get the data ready for analysis. As a result, the surveys were examined visually for anomalies, missing numbers, and blank spaces, as well as for a normal distribution.

4.3.1 Analysis of Missing Data

We verified that the surveys had been correctly completed and contained no missing values or data when they were returned. It is widely advised that if a case has more than 50% of its values missing, the researchers may choose to exclude it (Hair, 2010). The remaining observations may be significantly impacted by these occurrences (Tabachnick & Fidell, 2018). Upon receipt of the filled questionnaires, the study immediately reviewed the responses to confirm that items in the questionnaire were well completed for suitability of the responses for further analysis.

4.3.2 Analysis of Outliers

Statisticians and data analysts are known to view outliers with a lot of scepticism since the outliers are likely to have potential adverse effects, examples being violation of assumptions, hindering visualizations, and leading to biased estimates, among other effects, (Filho, Silva, Pires & Malaquias, 2023). An outlier is defined as a datum that is found further away from the rest of the statistical data points in which it occurs and ordinarily can have a considerable negative impact on the output ensuing from the statistical analysis, (Dash, Behera, Dehuri & Ghosh, 2023).

Churchill Jr. and Iacobucci (2004) define outliers as extreme values from other data that result from differences in measurement, omission, or commission error. According to Hair Jr et al. (2010), data with errors and outliers lead to biased results that are not applicable to the entire population (Tabachnick & Fidell, 2013). Outliers are data that appear unusual or to be outside the range of expected values. Outliers can be defined as data that is not consistent with the remainder of the data collection or as errors (Zhang, Meratnia & Havinga, 2010).

To identify and handle multivariate outliers, this work employed the Mahalanobis D2 measure, after the advice of Tabachnick and Fidell (2018). Univariate outliers would also be handled by managing multivariate outliers. Nevertheless, multivariate outliers would not always be resolved by addressing univariate outliers (Hair et al., 2010). Both univariate and multivariate analysis are discussed below.

4.3.2.1 Univariate Outliers

A univariate outlier is defined by Tabachnick and Fidell (2013) as an extreme value that deviates from the population values expected for a single variable and is, therefore, significantly different from the majority of cases found in the variable's center of the normal distribution. (Field & Miles, 2010). Outlier cases might skew the parameter estimate and, as a result, a study's external validity if they are not adequately recognized and handled (Carter, Schwertman, & Kiser, 2009). Parametric statistics relies on the assumption of a normal distribution, which can be compromised by outliers.

An outlier case is considered influential when it deviates from the distribution's shape or central trend. Erroneous data input, questionnaire-related problems, or sampling error can all be blamed for the appearance of outliers. Additionally, they might be real-life extreme examples of the intended audience (Tabachnick & Fidell, 2013). Regardless of the reason, outliers need to be appropriately managed before data analysis in order to increase generalizability. It is possible to identify, categorize, and handle outlier cases using a variety of statistical methods. As advised by Tabachnick & Fidell (2013), SPSS 25 was utilized to assist in examining the data for mistakes using Kurtosis and Skewness during descriptive analysis (see descriptive tables).

4.3.2.2 Multivariate outliers

Mahalanobis Distance data was used in this work to identify and convert both univariate and multivariate data. But each kind of outlier was handled differently since, as stated by Hair Jr. et al. (2010), handling one outlier does not imply handling the others. In order to

handle all outliers in all variables, the study ran Mahalanobi in multiple regression. According to Tabachnick and Fidell (2013), the findings indicated that multivariate was sensed in four items since theory degrees of freedom produced a p value smaller than 0.001. As a result, instances where the value was less than 0.001 were not included in the analysis.

4.3 Firm Characteristics

Firm characteristics are key to understanding the moderating impact of CEO tenure on the association between board human and social capital and firm financial innovation in the financial services sector in Kenya. Thus, the research found it necessary to ascertain firm performance and firm age. Basing on the results in Table 4.2, firm performance posted a mean of 4,974.09, with a maximum (minimum) value of 18233 (72). The targeted firms have operated for an average of 30 years (mean = 30.69) with the oldest (youngest) being 120 (5).

Table 4.2

Firm Characteristics

	FP	**FA**
N	164	164
Minimum	72	5
Maximum	18233	120
Mean	4794.09	30.695
Std. Deviation	5312.94	27.46
Skewness	1.26	1.705
Kurtosis	0.641	2.764

Source (author, 2025)

4.4 Factor Analysis

The important principle components that explained 54.7% of the variance in the business financial innovation data were found using principal components analysis. As per Field's (2013) account, Principal Components Analysis (PCA) is a technique for reducing a bigger collection of variables into a smaller set of variables known as principal components. These principal components are responsible for most of the variance in the original variables. In other words. factor analysis techniques can group diverse attributes into several more concise factors. Finding the linear components in the data and how a given variable might contribute to one of those components are the goals of principal component analysis.

The components that loaded highly were analyzed using the Principal Component Method, which examined the following: board prestige, board education, board experience, board functional diversity, board director interlocks, board relationship with CEO, and firm financial innovation. This was done to improve data reliability and eliminate factors with weak or negative loading.

Moreover, the validity of the instrument was evaluated using Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (Muhammad, 2009). Component factor analysis with varimax rotation was used in all variables to extract factors from each construct. According to Hair et al. (2015), items that had loading factors less than 0.50 were all removed, while those that had loading values more than 0.50 were retained. The components fit neatly into the many variable-dimensional

structures that supported them. The relevant findings are summarized and discussed in the section below.

4.4.1 Factor Analysis for Firm Financial Innovation

Principal component matrix for all the 12 constructs in firm financial innovation was presented on table 4.5 to show how the factors loaded. Firm financial innovation items namely our bank has introduced innovative services / products, our bank has pioneered technological financial services sector solutions, our bank has changed the organization structure in order to promote innovation, our bank has developed Human Resource policies aimed at promoting innovation, our banks' key strategic goal is to lead with financial services sector innovations, development of existing products /services, our bank is innovative, our bank has an innovation strategy and our bank is pursuing an innovation strategy were retained for further analysis.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy and the Bartlett's Test of Sphericity are included in Table 4.3 which shows that the data was appropriate for factor analysis on the company financial innovation variable. The Kaiser-Meyer-Olkin measure of sample adequacy was 0.813 above the acceptable limit of 0.5, and the Bartlett's Test of Sphericity produced a significant Chi-Square (χ^2) of 835.778 with p-value =.000<.05 (Field, 2005). Once KMO proved that the data was adequate for factor analysis, two components were retrieved after Varimax rotation and their eigen values.

Table 4.3

KMO and Bartlett's Test for Firm Financial Innovation

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.813
Bartlett's Test of Sphericity	Approx. Chi-Square	835.778
	Df	36
	Sig.	0.00

Source (author, 2025)

The factor analysis results in table 4.4 revealed that components explained 54.705 % of variance in firm financial innovation. In addition, results in table 4.4 showed that the components of firm financial innovation had Eigen value of 4.923 which is above the accepted value of 1 (Yong & Pearce, 2013). Thus, the items were appropriate to explain the variable and for rotations.

T**able 4.4**

Total Variance Explained for Firm Financial Innovation

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.923	54.705	54.705	4.923	54.705	54.705

Source (author, 2025)

The principal component analysis with Varimax rotation was performed to identify the underlying factors of firm financial innovation as shown in table 4.5. The results depicted that the high factor loading scores showed that all the items were above the minimum recommended value of 0.5, except for one item “Our bank / SACCO is pursuing an innovation strategy” which was dropped. (Hair *et al.*, 2014).

Table 4.5

Rotated Component Matrix

	Component
	1
Our bank / SACCO has introduced innovative services/products	0.842
Our bank / SACCO has pioneered technological banking solutions	0.722
Our bank / SACCO has changed the organisation structure in order to promote innovation	0.795
Our bank / SACCO has developed Human Resource policies aimed at promoting innovation	0.725
Our bank / SACCO's key strategic goal is: To lead with banking innovations	0.836
Our bank / SACCO's key strategic goal is: Development of existing products /services	0.715
Our bank / SACCO is innovative	0.78
Our bank / SACCO has an innovation strategy	0.843
Our bank / SACCO is pursuing an innovation strategy	dropped
Extraction Method: Principal Component Analysis.	

Source (author, 2025)

4.4.2 Factor Analysis for Board Human Capital

Factor analysis was carried out on board capital (board education, board experience, board functional diversity, board director interlocks, board prestige, board relation with CEO). Principal component analysis was used for the extraction process, and the rotation method used was varimax with Kaiser normalization. The results are shown in table 4.6. The purpose of factor analysis was to minimize the number of components or indicators associated with each research variable. Excellent factors with factor loadings greater than 0.5 have to be kept for more data analysis.

Further, prestige of the board of directors' items namely, the board members at our bank have relatively high prestige versus the directors of other banks and the board members at

our bank have connections to persons who have high prestige were later used for further analysis. Additionally, board education and the items on board experience, board functional diversity and director interlocks were retained for further analysis. To sum up, sampling adequacy was tested using the Kaiser- Meyer- Olkin (KMO) Measure of sampling adequacy. As evidenced in table 4.6, KMO was greater than .5 (.566) as recommended by Hair *et al.,* (2010).

This implies that the study sample size in relation to the measurement items were adequate and could be subjected to factor analysis. Further, Bartlett's Test was significant, $\chi 2$ (36) = 489.33, p-value =.000< .05. This shows that correlation matrix was not an identity matrix, hence items were related and therefore suitable for structure detection.

Table 4.6

KMO and Bartlett's Test for Board Capital

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.566
Bartlett's Test of Sphericity	Approx. Chi-Square	489.333
	Df	36
	Sig.	0.000

Source (author, 2025)

Table 4.7 displays Initial Eigen values, % of variance and cumulative % variance of board capital (board education, board experience, board functional diversity, board director interlocks, board prestige, board relation with CEO). Results showed that based on Eigen value of more than one (Leech *et al.,* 2013), 6 components from board capital were derived which had Eigen value of 1.839 and 1.016 respectively indicating amount of variance in the original variables accounted for by each component.

In addition, components 1 (board education) accounted for 20.439 % of variance of board capital, component 2 (board of directors prestige) accounted for 17.07% of variance of board capital, component 3 (board of directors experience) accounted for 14.808% of variance of board capital, component 4 (board relation with CEO) accounted for 13.047 % of variance of board capital, component 5 (board of directors functional diversity) accounted for 12.455 % of variance of board capital, while component 6 (board of directors interlocks) accounted for 11.285 % of variance of board capital. The Cumulative of 89.104 % indicates percentage of variance accounted for by 6 components. This means that items in the two components were adequality measuring board capital.

T**able 4.7**

Total Variance Explained for Board Capital

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.892	32.137	32.137	1.839	20.439	20.439
2	1.64	18.221	50.359	1.536	17.07	37.509
3	1.128	12.536	62.895	1.333	14.808	52.317
4	1.008	11.202	74.097	1.174	13.047	65.364
5	0.768	8.536	82.634	1.121	12.455	77.819
6	0.582	6.47	89.104	1.016	11.285	89.104

Source (author, 2025)

Principal component matrix for all the 9 constructs in board capital were presented in table 4.8 to establish the factor loadings for each of the constructs. The principal component analysis with Varimax rotation was performed to identify the underlying factors of board capital. The results depicted that factor loadings of all items were all above the minimum recommended value of 0.50 (Hair *et al*., 2014). This implies 11

items which had high factor loading explained board capital, hence retained for further analyses.

Table 4.8

Rotated Component Matrix

	Component					
	BoDEX	BoDP	BoDE	BoDRC	BoDFD	BoDI
Directors of our bank / SACCO's board possess at least one academic degree			0.838			
The directors of our board have experience in other bank / SACCOs as board members	0.861					
The directors of our board have experience in other banks / SACCOs as employees	0.648					
The directors of our board sit on other boards of firms listed in Securities Exchange(s)						0.992
The board members at our bank / SACCO Have high prestige relative to directors of other banks		0.778				
The board members at our bank / SACCO Have connections to persons who have high prestige		0.842				
Criteria for joining our board includes Business relations with the bank / SACCO				0.893		
Criteria for joining our board includes Personal relations with Chief Executive Officer				0.958		
There is functional diversity in our board due to the variety of professional backgrounds in our board of directors					0.626	
Extraction Method: Principal Component Analysis.						
Rotation Method: Varimax with Kaiser Normalization.						

Source (author, 2025)

Key: BoDE= Board of Directors Education, BoDP = board of director's prestige, BoDEX= board of directors' experience, BoDRC= board of directors' relationship with CEO, BoDFD = board of director's functional diversity, BoDI = board of director's interlocks

4.5 Reliability Analysis

The concepts of reliability and validity of a research tool are ways used to seek to demonstrate the rigour and trustworthiness of quantitative and qualitative research, (Fitzner, 2007). Researchers who are selecting methods and/or creating instruments that will be used and assessed in a research setting should be aware of these ideas. A research-friendly check sheet is provided, along with definitions of several validity and reliability testing methods. A tool might be suitable for use in practical settings after being tested for the fundamental components of validity and reliability, such as face and construct validity. But those doing in-depth outcome assessments might want more confirmation, such as doing an external validity test.

The reliability coefficient, or Cronbach's alpha (Cronbach, 1951), was utilized in this study to assess the internal consistency and reliability of the Likert-type scales that were included in the research instrument. The results are shown in Table 4.9. From the findings in the Table, firm financial innovation had the highest reliability (α= 0.869) followed by board education (α= 0.811), board functional diversity (α= 0.802), board experience (α= 0.732), directors' relations with the CEO (α= .72), then board prestige (α= 0.708) and finally, director interlocks (α= .62). Falk-Brynhildsen *et al*., (2023) posit that reliability test results are to be interpreted using the criteria for Cronbach's alpha defined by ($0.70 < \text{Cronbach's } \alpha < 0.90$).

However, it is generally agreed upon that a reliability level of 0.6–0.7 is considered adequate, while 0.8 or higher is considered extremely good, Horodnic, Zait, and Ursachi (2015). Furthermore, Singh *et al*., (2023) aver that if the value of Cronbach alpha is

greater than 0.6, then the questionnaire is said to be reliable. Based on the foregoing, the researcher took the view that this research instrument was reliable and consequently required no amendments.

Table 4.9

Reliability analysis

	Cronbach's Alpha	N of Items
Board education	0.811	1
Board Experience	0.732	2
Board functional diversity	0.802	1
Board director interlocks	0.62	1
Board Prestige	0.708	2
Board Relation with CEO	0.72	2
Firm financial innovation	0.869	9

Source (author, 2025)

4.6 Descriptive Statistics

Quantitative descriptive analysis was used to describe the key attributes of board human and board social capital as well as firm financial innovation. The descriptive statistics on the study variables are as presented in Tables 4.10 to 4.12 below. The emphasis is on board education, board experience, board functional diversity, director interlocks, board prestige, board director relations with CEO, firm financial innovation and CEO tenure. In Table 4.10, the findings on board education indicated that the directors of the banks' board possess at least one academic degree (mean = 3.957, SD = 0.800). However, the directors have limited experience in other banks as employees (mean = 2.778, SD = 1.430) as well as board members (mean = 2.646, SD = 1.558).

Further, there is functional diversity in the board due to the variety of professional backgrounds in their board of directors (mean = 4.323, SD = 1.213). Besides, director

interlocks had a mean of 3.478. Additionally, the findings on board prestige indicated that a mean = 3.593, SD = 0.985. Also, personal relations with the CEO is not a criteria for joining the board (mean = 2.631, SD = 1.089).

Moreover, the firms' key strategic goal is to lead with financial services sector innovations (mean = 4.24, SD = 0.73). Also, banks' key strategic goal is to develop existing products and services (mean = 4.05, SD = 0.75). Further the financial service sector players are innovative (mean = 4.09, SD = 0.61), have an innovation strategy (mean = 4.15, SD = 0.7) and they pursue the innovation strategy (mean = 3.84, SD = 1.09).

These results suggest that most financial sector players in Kenya have above-average board capital, considering that means of 2.64 to 4.32 on the various board capital constructs in table 4.10, below.

Table 4.10

Descriptive Statistics for Human Capital

n=164	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
board education	**1**	**5**	**3.957**	**0.800**	**-0.898**	**2.066**
The directors of our board have experience in other banks as employees	1	5	2.778	1.430	0.095	-1.347
The directors of our board have experience in other banks as board members	1	5	2.646	1.558	0.271	-1.458
board experience	**1**	**5**	**2.965**	**1.155**	**-0.135**	**-0.769**
board functional diversity	**1**	**5**	**4.323**	**1.213**	**-1.834**	**2.182**
Director Interlocks	**1**	**5**	**3.478**	**1.133**	**-0.553**	**-0.319**
The board members at our bank / SACCO Have high prestige relative to directors of other banks	1	5	3.681	1.140	-0.745	0.074
The board members at our bank / SACCO Have connections to persons who have high prestige	1	5	3.506	1.132	-0.246	-0.734
BP	**1**	**5**	**3.593**	**0.985**	**-0.408**	**-0.380**
Criteria for joining our board includes Business relations with the bank	1	5	2.732	1.628	0.122	-1.666
Criteria for joining our board includes Personal relations with Chief	1	3	1.216	0.553	2.614	1.473
PBRelation_CEO	**1**	**4.7**	**2.631**	**1.089**	**-0.399**	**-1.000**

Source (author, 2025)

Concerning firm financial innovation, in Table 4.11, below, the financial service sector players have introduced innovative services/products (mean = 4.43, SD = 0.7). Also, they have pioneered technological financial services sector solutions (mean = 4.25, SD = 0.75). Other than that, the financial service sector firms have changed the organization structure in order to promote innovation (mean = 4.02, SD = 0.79). The firms have also

developed human resource policies aimed at promoting innovation (mean = 3.99, SD = 0.9).

These results suggest that most financial sector players in Kenya have above-average financial innovations, considering that means of 3.84 to 4.43 on the various firm financial innovation measurement results in table 4.11, below.

Table 4.11

Descriptive Statistics for Financial Innovation

164	Min	Max	Mean	Std. Dev	Skewness	Kurtosis
Our bank / SACCO has introduced innovative services/products	1	5	4.43	0.70	-1.27	2.44
Our bank / SACCO has pioneered technological banking solutions	1	5	4.25	0.75	-0.98	1.63
Our bank / SACCO has changed the organisation structure in order to promote innovation	2	5	4.02	0.79	-0.42	-0.35
Our bank / SACCO has developed Human Resource policies aimed at promoting innovation	1	5	3.99	0.90	-0.59	0.29
Our bank / SACCO's key strategic goal is: To lead with banking innovations	2	5	4.24	0.73	-0.59	-0.20
Our bank / SACCO's key strategic goal is: Development of existing products /services	2	5	4.05	0.75	-0.78	0.87
Our bank / SACCO is innovative	2	5	4.09	0.61	-0.37	0.97
Our bank / SACCO has an innovation strategy	2	5	4.15	0.70	-0.44	-0.08
Our bank / SACCOis pursuing an innovation strategy	1	5	3.84	1.09	-1.18	0.98
FI	2.22	5	4.12	0.53	-0.62	0.24

Source (author, 2025)

With regard to CEO tenure, as can be seen in Table 4.12, below, CEO tenure was at an average of seven years (mean = 7.2256) and a minimum and maximum tenure of 1 and 15 years, respectively. The average years of CEO tenure at 7 years with a standard deviation of 4 may imply that the majority of the CEOs engage in innovation as they will

have been through their initial phase of response to mandate according to Hamrick & Fukutomi, (1991) and well before the dysfunctional phase when little or no innovation occurs by virtue of the CEO having minimum propensity to drive innovations.

Table 4.12

Descriptive Statistics for CEO Tenure

N	164
Minimum	1
Maximum	15
Mean	7.2256
Std. Deviation	4.06892
Skewness	0.386
Kurtosis	-0.87

Source (author, 2025)

4.7 Test of Assumptions of Regression

The data were first screened to seek to identify problems that might have affected subsequent analyses. Regression models were also assessed based on four econometricians' recommended tests (Gujarati, 1992; Greene, 1993) to determine whether an equation is suitable. The linearity, normality, homoscedasticity, and multicollinearity diagnostic tests were performed to verify that the regression analyses satisfied the validity criteria.

4.7.1 Linearity

A regression model's linearity is determined by the relationship between its dependent and independent variables, which expresses how much variation in the dependent variable is driven by the independent variables, (Hair, 1992). Residual plots make it simple to investigate linearity, however this is not regarded as a scientific method. A more direct method is used for the research's objectives. The F-statistic and its corresponding significance level are used to analyze the presence of linearity.

Table 4.13 offers the statistics for the main variables in this paper. The outcomes of these tests of linearity in table 4.13 below show that there exists a linear relationship between board education and firm financial innovation (F = 51.232, p = .000). There also exists a linear relationship between board functional diversity and firm financial innovation (F = 39.037, ρ = .000). Also, director interlocks and firm financial innovation are linearly related (F = 22.699, ρ = .000). As well, there is a linear relationship between board prestige and firm financial innovation (F = 64.281, p = .000). Also, there is a linear relationship between personal and business relations between CEO and directors and firm financial innovation (F = 9.752, p = .002).

Besides, CEO tenure is linearly related with firm financial innovation (F = 22.201, p = .000). In addition, there exists a linear relationship between firm performance and firm financial innovation (F = 9.612, p = .002). Lastly, there exists a linear relationship between firm age and firm financial innovation (F = 11.09, p = .001). However, board experience and firm type have no linear related with firm financial innovation.

Table 4.13

Linearity

		F	Sig.	R Squared	Eta Squared
FI * board education	Linearity	51.232	0.000	0.217	0.330
FI * board experience	Linearity	1.727	0.191	0.010	0.142
FI * board fuctional diversity	Linearity	39.037	0.000	0.169	0.312
FI * DirectorInterlocks	Linearity	22.699	0.000	0.118	0.188
FI * BP	Linearity	64.281	0.000	0.249	0.399
FI * PBRelation_CEO	Linearity	9.752	0.002	0.054	0.149
FI * CT	Linearity	22.201	0.000	0.088	0.398
FI * FT	Linearity	0.052	0.820	0.000	0.007
FI * FP1	Linearity	9.612	0.002	0.055	0.077
FI * FA	Linearity	11.090	0.001	0.043	0.479

Source (author, 2025)

4.7.2 Normality

There should be a normal distribution for the regression's residuals. To determine whether the research data was normally distributed, as it should be, this study performed normality tests. There's a chance that the model's residuals could produce false positives for T-, F-, and Chi-square test results if the assumption is broken. The Kolmogorov-Smirnov and Shapiro-Wilk tests, which are widely used, were utilized to conduct normality tests for in this study. When the results of the normality tests are significant, it indicates that the distribution of the data is not normal.

Accordingly, neither the K-S nor the S-W tests should be significant for the data to be deemed normal (Tabachnick & Fidel, 2013). Based on the results shown in Table 4.14 below, it appears that the normality of the data was not an issue because the tests for K-S

and S-W for all the variables was not significant. Because of this, the study's data distribution was deemed suitable for multivariate analysis.

Table 4.14

Normality Tests

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
board education	0.259	164	0.312	0.832	164	0.133
board experience	0.096	164	0.188	0.947	164	0.065
board functional diversity	0.388	164	0.399	0.607	164	0.055
Director Interlocks	0.208	164	0.149	0.898	164	0.102
Personal or Business Relations with CEO	0.279	164	0.193	0.852	164	0.108
BP	0.127	164	0.165	0.933	164	0.105
FI	0.109	164	0.137	0.962	164	0.098
CT	0.15	164	0.109	0.927	164	0.099
FT	0.379	164	0.081	0.684	164	0.100
FP1	0.314	164	0.054	0.757	164	0.101
FA	0.214	164	0.057	0.79	164	0.102
a Lilliefors Significance Correction						

Source (author, 2025)

4.7.3 Heteroscedasticity

The purpose of the heteroscedasticity test is to determine whether there is residual variance inequality between observations in the regression model (Saharso & Fadilah, 2024). Prior to accepting the findings of a regression analysis, the heteroscedasticity assumption must be verified. Levene's test, which aims to determine whether or not the variance of independent and dependent variables is equal, was used in this work to quantify heteroscedasticity. One important premise of linear regression models is that group variances are heteroscedastic, or unequal, rather than homoscedastic, if the

Levene's Test for Equality of Variances is statistically significant at α=.05, or less than 0.05.

Table 4.15

Heteroscedasticity

	Levene Statistic	df1	df2	Sig.
board education	0.09	2	161	0.913
board experience	0.38	2	161	0.688
board functional diversity	1.33	2	161	0.268
Director Interlocks	3.76	2	161	0.135
BP	0.84	2	161	0.433
Personal & Business Relations with CEO	4.30	2	161	0.075
FI	1.58	2	161	0.209
CT	3.93	2	161	0.072
FP1	0.51	2	161	0.601
FA	0.57	2	161	0.564

Source (author, 2025)

4.7.4 Multicollinearity

When many variables in a multiple linear regression analysis have a substantial correlation with both the dependent variable and one another, this phenomenon is known as multicollinearity. Some of the key variables under investigation become statistically insignificant due to multicollinearity (Shrestha, 2020). Stated differently, multicollinearity is the property of strongly connected independent variables with respect to other independent variables. It is crucial to look for this because it has the potential to distort results from being meaningful. Although multicollinearity can influence the outcome of individual independent variables, it has no effect on the regression's ability to predict the dependent variable..

VIFs of 10 or above (conservatively over 5) are often regarded as indicators of significant multi-collinearity that have an impact on the study (Newbert, 2008). Table 4.16 displays the VIF test results, which varied from 1.057 to 1.585. Since the VIFs are lower than ten multicollinearity issues are not present.

Table 4.16

Multicollinearity

	Collinearity Statistics	
Independent Variable	**Tolerance**	**VIF**
Board education	0.705	1.418
Board experience	0.823	1.215
Board functional diversity	0.631	1.585
Director Interlocks	0.92	1.087
Board Prestige	0.897	1.115
Personal / Business relations with CEO	0.946	1.057

Source (author, 2025)

4.8 Correlation Results

Correlation analysis was used in the study to determine how strongly the research variables related to one another. The correlation coefficient, which quantifies the linear relationship between two variables, is obtained from correlation analysis results (Crossman, 2013). The correlation coefficient has a value in the range of -1 to +1. When two variables have a correlation value of +1, they are positively correlated in a positive linear relationship. When two variables have a correlation of -1, it means that their relationship is negatively linear, and when it is 0 it means that there is no linear relationship at all.

The findings of the correlation analysis presented in table 4.17 indicated that board education had a positive correlation ($r = 0.466$) with firm financial innovation and that

the relationship was significant, $p < 0.01$. Furthermore, the correlation between board functional diversity and firm financial innovation is positive ($r = 0.411$) and significant at $p < 0.01$. Besides, there was correlation between director interlocks and firm financial innovation ($r = 0.344$, $p < 0.01$).

Furthermore, the correlation between board prestige and firm financial innovation is positive ($r = 0.499$) and significant at $p < 0.01$. Similarly, the correlation between personal and business relations with CEO and firm financial innovation is negative ($r = -0.232$) and significant at $p < 0.01$. The output also shows that CEO tenure is positively related with firm financial innovation, with a coefficient of $r = 0.297$ which is significant at $p < 0.01$. The output also shows that firm performance is positively related with firm financial innovation, with a coefficient of $r = 0.235$ which is also significant at $p < 0.01$. The output also shows that firm age is positively related with firm financial innovation, with a coefficient of $r = 0.206$ which is also significant at $p < 0.01$. However, board experience and firm type were not correlated with firm financial innovation.

Table 4.17

Correlation Results

	FI	BoDE	BoDEX	BoDFD	BoDI	BoDP	BoDRC	CT	FT	FP1	FA
FI	1										
BoDE	.466**	1									
BoDEX	0.098	.192*	1								
BoDFD	.411**	.397**	.330**	1							
BoDI	.344**	.228**	-0.066	0.022	1						
BoDP	.499**	.414**	.184*	.610**	-0.003	1					
BoDRC	-.232**	0.09	-0.127	-.265**	0.082	-.205**	1				
CT	.297**	0.011	-.295**	0.046	.244**	-0.091	-0.147	1			
FT	-0.018	0.04	-0.019	0.027	0.017	0.071	0.064	-0.069	1		
FP1	.235**	-0.017	0.086	-.261**	-0.018	-0.092	-0.012	0.005	-0.036	1	
FA	.206**	0.118	.241**	.305**	0.11	.303**	-0.078	.176*	-0.102	-0.037	1

Source (author, 2025)

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Key: FI=Firm financial innovation, BoDE= Board of Directors Education, BoDP = board of director's prestige, BoDEX= board of directors' experience, BoDRC= board of directors' relationship with CEO, BoDFD = board of director's functional diversity, BoDI = board of director's interlocks CT=CEO Tenure, FP=Firm Performance, FA=Firm Age

4.9 Regression Model for Control Effect

Before testing the main hypotheses, the study ran the regression model for control variables, namely firm performance, firm type and firm age against firm financial innovation. Findings shown in table 4.18 revealed that control effect of firm performance, firm type and firm age had R^2 of .101 indicating that 10.1% variation of firm financial innovation is explained by firm performance, firm type, and firm age. The model had ANOVA values of F = 3.157 and p value of .041, indicating that the model was fit. From the results firm performance had significant and positive effect on

financial innovation (β = 0.240, p=.00<0.05). Also, firm age had significant and positive effect on financial innovation (β = 0.22, p=.01<0.05). However, firm type had insignificant effect on firm financial innovation at (β = -0.01, p=.95>0.05).

Table 4.18

Regression Model for Control Effect

	Unstandardized Coefficients		**Standardized Coefficients**		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	3.41	0.21		16.39	0.00
Firm type	0.00	0.05	-0.01	-0.07	0.95
Firm Performance	0.18	0.05	0.24	3.24	0.00
Firm Age	0.00	0.00	0.22	2.85	0.01
Model Summary					
R	0.318				
R Square	0.101				
Adjusted R Square	0.085				
Std. Error of the Estimate	0.511				
ANOVAa					
F	3.157				
Sig.	.041b				

Source (author, 2025)

a Dependent Variable: FI

4.10 Regression Model for Effect of Board Human and Social Capital on Firm Financial Innovation

A set of statistical methods known as regression analysis is used to infer correlations between related variables that have a causal-effect relationship, (Sarstedt & Mooi, 2014). Given that these methods can be used in practically any field of study, the study found regression model the most important in testing the hypotheses.

Findings from table 4.19, showed that model had ANOVA values of F = 11.28 and p value of .00, indicating that the model was fit. Results from table 4.19 also show that the effect of board capital on firm financial innovation had R Squared = .554 indicating that directors' education, board functional diversity, director interlocks, board of director's prestige and personal and business relations of directors and CEO account for 55.4% of firm financial innovation.

Consistent with Abtahi *et al*., (2023), this study finds board education has a positive effect on firm financial innovation. These findings are also aligned to Wincent *et al.*, (2010) who found that directors with relatively higher formal educational qualifications and other skills are in a better position to contribute to coming up with more creative solutions in their firms. The findings in this research pertaining to director interlocks are consistent with Helmers *et al*., (2017) who found that interlocking directorships have a significant positive impact on both Research & Development expenditure and patenting, a proxy for innovation. With regard to control variables and consistent with expectations, this study found firm performance to have a positive and significant effect on firm financial innovation.

Table 4.19

Regression Results for Effect of Board Capital on Financial Innovation

	Unstandardized Coefficients		**Standardized Coefficients**			**Collinearity Statistics**	
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**Tolerance**	**VIF**
(Constant)	1.64	0.25		6.55	0.00		
Board education	0.16	0.04	0.24	3.64	0.00	0.69	1.46
Board experience	-0.05	0.03	-0.10	-1.75	0.08	0.82	1.22
Board functional diversity	0.09	0.03	0.21	2.66	0.01	0.48	2.11
Director Interlocks	0.14	0.03	0.30	5.28	0.00	0.91	1.11
Board prestige	0.16	0.04	0.29	4.04	0.00	0.55	1.81
Personal relations with CEO	-0.08	0.03	-0.17	-2.87	0.01	0.85	1.17
Firm type	-0.04	0.04	-0.06	-1.11	0.27	0.97	1.03
Firm Performance	0.24	0.04	0.34	5.82	0.00	0.88	1.14
Firm Age	0.00	0.00	0.01	0.21	0.84	0.83	1.21
Model Summary							
R	0.745						
R Square	0.554						
Adjusted R Square	0.528						
Std. Error of the Estimate	0.367						
ANOVAa							
F	11.280						
Sig.	0.000						
Durbin-Watson	2.320						
a Dependent Variable: FI							

Source (author, 2025)

4.11 Hierarchical Regression Model for Moderating Effect CEO Tenure on the relationship between Board Human and Social Capital and Firm financial innovation

The study examined the moderating influence of CEO tenure on the connection between board capital and firm financial innovation after calculating the regression findings. A

qualitative or quantitative variable that modifies the strength and/or direction of the link between a dependent or criterion variable and an independent or predictor variable is known as a moderating variable (Baron & Kenny, 1986).

Three different kinds of moderations are identified by Frazier, Tix, and Barron (2004): the first is called an enhancing interaction, in which the moderator and predictor both influence the outcome variable in the same direction and collectively have a stronger effect than an additive one; the second is called a buffering interaction, in which the moderator variable lessens the influence of the predictor variable on the outcome; and the third is called an antagonistic interaction, in which the moderator and predictor both influence the outcome variable but in the opposite direction. According to Hayes (2009), moderation occurs when the impact of independent variables on the dependent variable fluctuates depending on a third variable known as the moderator variable.

By adding the interactions gradually and analyzing the output, the study tested the moderation hypotheses using a hierarchical regression model. According to Hayes (2009), a moderated impact is usually statistically modeled as an interaction between predictors and the moderator variable, which are progressively incorporated into the models. According to Hayes (2009), three requirements must be met in order to determine whether there is a moderation effect: first, the R square for the interactions with and without the interaction should differ; second, the interaction's coefficient should differ from zero; and third, the model as a whole (F-value) should be significant. Table 4.20 displays the findings from the hierarchical regression analyses.

In Model 4, findings showed that CEO tenure negatively and significantly moderated the association between board of directors' education and firm financial innovation ($R^2\Delta$=0.174, β= -1.93, ρ<0.05). This infers that introduction of CEO tenure enhances the association between board of directors' education and firm financial innovation by 17.4%. The ANOVA results in Model 4 revealed that FΔ = 104.418 which was significant (p=.000<0.05) indicating that model 4 had goodness of fit in explaining that CEO tenure negatively and significantly moderated the association between board of directors' education and firm financial innovation.

In Model 5, results revealed that CEO tenure positively and significantly moderate the relationship between board of directors' experience ($R^2\Delta$=0.039, β= .6, ρ<0.05). This implies that after introducing CEO tenure in the relationship between board of directors' experience and firm financial innovation, R squared increased from .746 to .785, thus CEO tenure improves the relationship between board of directors' experience and firm financial innovation by 3.9%. The ANOVA results in Model 5 revealed that FΔ =27.349 which was significant (p=.000<0.05) indicating that model 5 had goodness of fit in explaining that CEO tenure positively and significantly moderated the relationship between board of directors' experience and firm financial innovation.

In Model 6, Results on table 4.20, revealed that after introducing CEO tenure on the relationship between board of directors' functional diversity and firm financial innovation R squared improved from .785 to .822. Thus, board of directors' functional diversity and firm financial innovation is moderated by CEO tenure by 3.7% ($R^2\Delta$ =.037). From the Model 6 results therefore, CEO tenure has a significant and negative effect on the

relationship between board of directors' functional diversity and firm financial innovation (β= -.38, ρ<0.05).

The study tested goodness of fit of regression model for the moderating effect of CEO tenure on the relationship between board of directors' functional diversity and firm financial innovation using F test in ANOVA. From the results presented in table 4.20 model 6, the ANOVA results revealed that FΔ =31.298 were significant (p=.000<0.05) indicating that regression model for moderating effect of CEO tenure on the relationship between board of directors' functional diversity and firm financial innovation had goodness of fit.

In Model 7, results showed an R square change was 0.004, indicating that the relationship between board of directors' prestige and firm financial innovation increased after moderating with CEO tenure. Despite the increase, CEO tenure had no significant effect on the relationship between board of directors' prestige and firm financial innovation (β= .24, ρ>0.05). The ANOVA results in same model revealed that FΔ =3.075 was insignificant (p=.082>0.05) indicating that regression model for moderating effect of CEO tenure on the relationship between board of directors' prestige and firm financial innovation had no goodness of fit.

In Model 8, after introduction of CEO tenure on relationship between board of directors' interlocks and firm financial innovation, R^2 increased from .826 to .844 thus, CEO tenure significantly and positively moderated the relationship between board of directors' interlocks and firm financial innovation by 0.019 (β= .58, ρ<0.05). The study tested goodness of fit of regression model for moderating effect of CEO tenure on the

relationship between board of directors' interlocks and firm financial innovation using F test in ANOVA. The results are presented in table 4.20 model 8. The ANOVA results revealed that FΔ =17.666 were significant (p=.000<0.05) indicating that the regression model for moderating effect of CEO tenure on the relationship between board of directors' interlocks and firm financial innovation had goodness of fit.

In Model 9, results showed an R square change was 0.003, indicating that the relationship between board of directors' relationship with CEO and firm financial innovation did increase after moderating with CEO tenure. Despite the R Square change, CEO tenure had no significant effect on the relationship between board of directors' relationship with CEO and firm financial innovation (β=.02, ρ>0.05). The ANOVA results in same model revealed that FΔ =2.996 was insignificant (p=.086>0.05) indicating that regression model for moderating effect of CEO tenure on the relationship between board of directors' relationship with CEO and firm financial innovation had no goodness of fit.

Table 4.201:

Hierarchical Regression Model for Moderating Effect of CEO Tenure on the Relationship between Board Capital and Firm Financial Innovation

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	B(se)	B(se)	B(se)	B(se)	B(se)	B(se)	B(se)	B(se)	B(se)
(Constant)	0.07(.07)	0.03(.10)	0.00(.05)	-0.02(.04)	0.00(.04)	0.05(.04)	0.05(.04)	0.05(.03)	-0.21(.15)
ZFP	0.24(.07) **	0.35(.06)**	0.33(.06)**	0.22(.04)**	0.19(.04)**	0.22(.04)**	0.21(.04)**	0.20(.04)**	0.22(.04)**
ZFA	0.19(.07)**	-0.00(.05)	-0.05(.05)	0.13(.05)**	0.13(.04)**	0.11(.04)**	0.08(.04)*	0.11(.04)**	0.08(.04)
ZFT	-0.01(.09)	-0.07(.05)	-0.06(.05)	-0.05(.04)	-0.05(.04)	(-0.06(.03)	(-0.05(.03)	(-0.04(.03)	(-0.05(.03)
ZBoDE		0.09(.06)	0.09(.06)	0.88(.09)**	0.97(.08)**	0.92(.08)**	0.92(.08)**	0.92(.07)**	0.91(.07)**
ZBoDEX		-0.11(.06)*	-0.03(.06)	-0.09(.05)	-0.39(.07)**	-0.46(.07)**	-0.51(.07)**	-0.53(.07)**	-0.55(.07)**
ZBoDFD		0.22(.07)**	0.17(.07)*	0.19(.05)**	0.09(.05)	0.13(.05)*	0.14(.05)**	0.11(.05)*	0.12(.05)*
ZBoDP		0.35(.06)**	0.30(.06)**	0.17(.05)**	0.14(.04)**	0.08(.04)*	0.10(.04)*	-0.19(.08)*	-0.19(.08)*
ZBoDI		0.31(.07)**	0.36(.07)**	0.31(.05)**	0.44(.05)*	0.47(.05)**	0.40(.06)**	0.45(.06)**	0.43(.06)*
ZBoDRC		-0.14(.06)*	-0.10(.06)	-0.09(.05)	-0.09(.04)*	-0.08(.04)*	-0.08(.04)*	-0.09(.04)*	-0.22(.08)*
ZCT			0.22(.06)**	2.02(.18)**	1.84(.17)**	1.85(.16)**	1.63(.20)**	1.16(.22)**	0.88(.27)*
ZBoDE*CT				-1.93(0.19)**	-2.30(.19)**	-2.06(.18)**	-2.13(.18)**	-2.07(.17)**	-2.09(.17)**
ZBoDEX*CT					0.60(.11)**	0.69(.11)**	0.79(.12)**	0.83(.11)**	0.88(.12)**
ZBoDFD*CT						-0.38(.07)**	-0.42(.07)**	-0.46(.07)**	-0.44(.07)**
ZBoDP*CT							0.24(.14)	0.20(.13)	0.29(.14)
ZBoDI*CT								0.58(.14)**	0.59(.14)**
ZBoDRC*CT									0.02(.01)
Model Summary									
R	0.318	0.727	0.756	0.864	0.886	0.907	0.909	0.919	0.921
R Square	0.101	0.528	0.572	0.746	0.785	0.822	0.826	0.844	0.848
Adjusted R Square	0.085	0.501	0.544	0.728	0.768	0.807	0.809	0.829	0.831
Change Statistics									
R Square Change	-	0.427	0.044	0.174	0.039	0.037	0.004	0.019	0.003
F Change	6.021	23.240	15.566	104.418	27.349	31.298	3.075	17.666	2.996
df1	3	6	1	1	1	1	1	1	1
df2	160	154	153	152	151	150	149	148	147
Sig. F Change	0.001	0.000	0.000	0.000	0.000	0.000	0.082	0.000	0.086

Source (author, 2025)
** p<0.05, * p<.01
FI=Firm financial innovation, BoDE = Board of Directors Education, BoDP = board of director's prestige, BoDEX = board of directors' experience, BoDRC = board of directors' relationship with CEO, BoDFD = board of director's functional diversity, BoDI = board of director's interlocks

4.12 Discussion of Hypothesis

4.12.1 Direct Effect

Hypothesis 1(H_{o1}) stated that educational qualifications of directors have no statistically significant effect on firm financial innovation in the financial services sector. The findings of this study showed that board education had coefficients of estimate which was significant basing on $\beta_1 = 0.24$ (p-value = 0.00 which is less than $\alpha = 0.05$). The null hypothesis was thus rejected, and it was concluded that educational qualifications of directors significantly influence firm financial innovation in the financial services sector. This finding suggests that there was up to 0.24 unit increase in firm financial innovation for each unit increase in the education qualification of directors.

Consistent with the findings, Wincent *et al.*, (2010) argued that directors with higher formal educational qualifications and other skills are likely to be in a better position to contribute to finding creative solutions in their organizations. In such a case, board of directors with formal education in the financial services sector are in a better position to advance new ways of doing business thereby positively contributing to firm financial innovation. Also, the findings are in tally with that of Dalziel *et.al*., (2011) which indicated that education provides the skills in research that facilitate assessment of research projects, knowledge related to innovation management or even familiarity with specific research related to the research and development pursuits. The findings are also supported by Torchia *et al*., (2015) argument that directors' educational background influence their innovation decisions.

Similarly, Dalziel *et al*., (2011) argued that board of directors' academic backgrounds that reflect a passage through Ivy League universities or other reputable universities in scientific research tends to increase investments in R&D. Also, Chen (2014) found that directors with advanced education would acquire distinctive abilities such as a greater ability to process information, which could positively affect R&D spending. Directors' educational qualifications would also be a particularly important attribute in the context of intense competition for innovation (Chen, 2014). Education can also provide skills in research that facilitate assessment of research projects, knowledge related to innovation management or even familiarity with specific research related to the R&D pursuits (Dalziel *et.al*., 2011).

However, it is not in all cases that the education level contributes to firm financial innovation. Precisely, according to Bantel and Jackson, (1989) education level had no significant effect on certain types of innovation. In certain instances, the relationship is negative when it comes to the educational qualifications of external directors (Dalziel *et al*., 2011). Despite the mixed perspectives in the extant literature, the present study supports the notion that relatively higher educational qualifications of directors of companies are key and necessary to enhancing firm financial innovation in the financial services sector in Kenya. This finding is consistent with logic as one would expect that directors who are more educated, in possession of advanced academic degrees namely masters and doctorate are practically in a better position to appraise and appreciate a matter. Furthermore, these directors with advanced degrees have the capability to critique proposals and generate ideas that are not easily fathomable to the those in possession of average academic certifications.

Hypothesis 2 (H_{o2}) stated that there is no significant effect between board of director's experience and firm financial innovation in the financial services sector in Kenya. Research findings showed that board experience had coefficients of estimate which was insignificant basing on β_2= -0.10 (p-value = 0.08 which was more than α = 0.05) hence we failed to reject the null hypothesis. This finding indicated that there would be no change in the firm financial innovation in the financial services sector with either increase or decrease in the board experience.

This finding is in contrast with that of Chen (2014) which established that directors possessing industry specific experience will be apt in the industry's technology, customer needs and competition moves thereby positively impacting on prospects of innovation. Similarly, the finding contradicts that of Mumford *et al*., (2002) which suggested that it is a requirement for business leaders to possess technical and professional experience so as to lead in creative efforts. Therefore, the current study does not support the argument that the more the directors' experience, the more innovative the directors will be.

The findings could be attributed to the generalization of directors' experience rather than emphasizing on particular forms of experience such as experience as CEO, venture capital experience and financial experience with specific activities as espoused by Johnson *et al*., (2013). It is also possible that factors associated with the capabilities of a firms' management did not make it possible to tap into the experience of the directors in fostering financial innovations in the subject firms.

The findings are also contrary to Oehmichen et al., (2017) findings that board of director's industry expertise affect firm financial innovation. Balsmeier *et al*., (2014) found that directors' industry expertise affects board tasks with positive implications

for innovation. Faleye et al., (2018) revealed that board industry expertise encourages top managers to invest in innovation by increasing their willingness to do so. According to Guldiken and Darendeli (2016), having board members with experience in the business helps identify the benefits of innovation input and reduces managerial risk aversion and myopia in R&D investments. Guldiken and Darendeli, (2016) findings show that director's industry expertise can affect firms' innovation.

Valenti and Horner, (2020b) and Faleye et al., (2018) studies provided empirical evidence that directors with industry expertise positively affect company innovation in terms of R&D investments. Moreover, there is a dearth of knowledge on how directors' experience impacts innovation in the financial services sector. Therefore, the study contributes valuable insights on the probable insignificant relationship between board of director's experience and firm financial innovation.

This study, consistent with logic anticipated that board experience would have a positive and significant effect on firm innovation. The findings of this study are to the contrary, perhaps because even though board capital provides a means of social and human capital for the transmission of sophisticated knowledge between businesses, some may lack the internal resources necessary to capitalize on the experiences of other businesses they have relationships with, (Javeed, *et al*., 2023).

On reflection, this study concludes that this finding could have some merit. It is possible that those individuals without certain experiences can approach an issue with an open mind, therefore avoiding reference to preconceived ideas, perceptions and a sense of entitlement to one's point of view. Often, we hear entrenched individuals make reference to the way 'we do things here', meaning that they are not open new ways of doing things in their business environments.

With these kinds of notions, it is possible businesses would stick to their old and conventional ways of doing business thereby not adopting the modern, or even postmodern ways of doing business. These positions often taken by senior management members of an organisation, in most cases who are elder and authoritative can stifle, dim or suffocate innovative ideas that may be generated and proposed by junior, young and often less experienced members of the organisation.

Hypothesis 3 (H_{o3}) postulated that there is no significant effect between board functional diversity and firm financial innovation in the financial services sector in Kenya. The finding shows that board functional diversity had coefficients of estimate which was insignificant basing on $\beta_3 = 0.21$ (p-value = 0.01) which is less than $\alpha = 0.05$) implying that the null hypothesis was rejected, and it was concluded that board functional diversity does influence firm financial innovation in the financial services sector in Kenya. The findings contrast with findings by Brinette, Khemiri, & Belkacemi, (2020) findings that board of directors' knowledge (educational and functional diversity) do not impact innovation performance.

However, the findings agree with Tarus & Aime, (2014) and Bantel, (1993) findings that board of directors' functional diversity would promote strategic change and lead to better decision making, both deemed necessary to foster innovation. Similarly, Heyden *et al.,* (2015) and Bear *et al*., (2010) found that board of directors' functional diversity could also allow it to better understand its environment and improve its ability to solve problems, especially through the practical knowledge that its members usually have and which represent valuable assets for innovation purposes. Studies have indicated that functional diversity has positive, negative, or no direct effects on creativity (Mitchell & Boyle, 2015; Cheung *et al*., 2016).

Also, the findings of this research conform to those of Somech and Drach-Zahavy (2013), Lee *et al*., (2015), and Chae *et al*., (2015) who found a positive association between functional diversity and creative efforts of teams. Belkacemi, Bouzinab & Papadopoulos (2021) highlighted the detrimental effects of functional diversity (as determined by diversity within the domains of competence) and, conversely, the beneficial effects of educational diversity (as determined by diversity within the academic disciplines) on innovation performance.

This result is in line with that of Johnson et al. (2013), who discovered that more diverse groups exhibit higher levels of creativity because these groups possess larger knowledge stocks, which are necessary for innovation. Furthermore, Yang (2014) demonstrates that boards that are less diverse result in narrower thinking that makes it more difficult to see potential for creativity. Furthermore, the findings support the claims made by Wincent et al. (2010) that functional diversity fosters creativity since it might result in a variety of perspectives and ideas that facilitate the quick and precise synthesis of intricate emergent patterns.

Overall, the findings are consistent with prior studies pointing to a positive link between directors' functional diversity and firm financial innovation. The difference is that the present study adds perspectives on this relationship with particular emphasis on the financial services sector in Kenya.

With regard to diversity, caution is indeed needed. Consistent with logic, diversity is likely to bring in variety of thoughts and views in appraising any given situation. These varying viewpoints would allow companies to most likely have a 360 – degree view of any emerging major business situation that requires a strategic response. As would be expected, the viewpoints and scenarios being projected need to be within a

reasonable number and more so, they should be practical and feasible in the circumstances, considering timelines and resources. When the diversity of thoughts is excessive this can yield conflict to the extent that the board may become dysfunctional. With a dysfunctional board of directors, it will be most unlikely that the board will undertake its monitoring and advisory roles effectively and this may result in the unfortunate collapse of the business.

Hypothesis 4 (H_{04}) stated that there is no significant effect between board of director interlocks and firm financial innovation in the financial services sector in Kenya. The regression results showed that board of director interlocks had significant coefficients of estimate based on $\beta 4 = 0.3$ (p-value = 0.00, which is less than 0.05). As a result, the study rejected the hypothesis that board of director interlocks has no significant effect on firm financial innovation in the financial services sector in Kenya.

The implication is that there is a 0.3 - unit increase in firm financial innovation for each unit increase in board of director interlocks. These results can be explained by the fact that interlocking directorates guarantee vital resources such as cash, expertise, complementary skills, additional legitimacy, and timely information about environmental events and trends. They also reduce uncertainty in R&D activities by providing innovative solutions that other companies have adopted or developed. (Chen, 2014).

Consistent with findings by Chen, (2014), this study finds that directors' social interactions with elements outside the firm yield resource swaps that could encourage creative thinking. Haynes and Hillman (2010) contended that director interlocks facilitate improved information access, allowing the focal firm to promptly comprehend industry happenings and trends. On the other hand, Johnson *et al*.,

(2013) argues that while external directors are greater information-gatherers, they are also too busy to properly oversee and counsel firms. It appears that board of directors' interlocks can be both beneficial and counterproductive to the firms depending on how the directors utilize the information and resources gathered.

The study findings also conform with Barroso et al., (2016) that found that interlocking directorates may foster creativity by offering vital resources and networking possibilities, including strategic knowledge, credibility, and learning. Board interlocks, according to Yoshikawa et al. (2020), offer a channel of information that impacts a firm's innovation through the acceptance of new policies and the implementation of strategic direction. Like other forms of inter-organizational linkages, board interlocks, according to West and Bogers (2014) and Ahuja et al. (2008), offer an informational advantage that aids the focus firm in gaining access to outside knowledge that is essential for technological exploration.

The results also support the findings of Helmers et al., (2017), who found that board interlocks significantly improve R&D and patenting. Similarly, board interlocks diminish interfirm financial innovation performance differentials and cause the innovation performance of the connected companies to converge, as Teng, Gimmon, and Lu (2021) showed. Li (2019) discovered comparable findings, namely that technological exploration benefits more from collaborations with R&D-intensive enterprises than from those with lower R&D expenditures. According to Hernández-Lara and Gonzales-Bustos (2018), the type of interlocks influenced innovation differently depending on whether they were intra-industry or extra-industry. Innovation was positively impacted when independent and extra-industry directors

held multiple directorships, but negatively impacted when women and intra-industry directors interlocked.

The findings, however, conflict with those of Drago et al., (2015), who discovered that interlocking directorates are motivated to increase their authority in order to pursue strategies—like innovation, for example—that are not in the best interests of shareholders. On the other hand, Kaczmarek et al. (2014) discovered that director interlocks might be a managerial control mechanism used to further managers' goals while stifling innovation and change. The results further refute the claims made by Li (2019) that there is no proof of a meaningful connection between business financial innovation and directors' interlocks.

Furthermore, the data in this study suggests a favorable relationship between financial innovation in firms and the interlocks of the board of directors. As a result, the current study provides important new information about the favorable and noteworthy impact of board of directors interlocks on business financial innovation in Kenya's financial services industry.

The above results notwithstanding, caution is indeed required when considering the use of board interlocks. The board interlocks, besides creating possibility of conflicts of interest may occasion the interlocked directors incremental work to the extent they may not be effective in performance of their board roles. This additional work may exceed the ordinary threshold of work that can be undertaken by a director. This is especially so where the interlocked director has other day to day engagements for instance personal business, involvement with academia, employment etc over and above their on-going family commitments.

Hypothesis 5 (H_{o5}) claimed that, in Kenya's financial services industry, there is no discernible relationship between the firm's financial innovation and the prestige of the board of directors. The study's results, however, indicated that the board of directors' prestige had significant coefficients of estimate, based on $\beta 3 = 0.29$ (p-value = 0.00, which is less than $\alpha = 0.05$). This suggests that the null hypothesis, which states that there is no significant relationship between the board of directors' prestige and firm financial innovation, is rejected. It is implied that for every unit increase in the board of directors' prestige, there is a corresponding increase in firm financial innovation of up to 0.29 units. The findings corroborate the idea that the stature of the board of directors generates funding for R&D, which is essential to firm innovation.

In the context of the financial services sector, the study adds new insights on the association between board of directors' prestige and firm financial innovation since there is a dearth of knowledge on this aspect in the literature. The results are consistent with those of Eulaiwi et al. (2016), who discovered that prestige is the primary and crucial factor in the hiring of directors in the majority of creative organizations. This is because it signals to potential new hires that the board has the standing and expertise to carry out its duties or to obtain resources from other businesses. Hillman & Dalziel, (2003) argued that firm's credibility and innovation can be improved by the prestige of its board member.

These results notwithstanding, caution is also needed in the area of prestige and status of directors of a company. There may indeed be a thin line between being prestigious and being narcissistic. The import of this view is that excessively prestigious directors may, in the course of their narcissistic behaviour appear to become arrogant

to their board colleagues and senior members of management so much so that the board may become ineffective in carrying out their roles.

Hypothesis 6 (H_{o6}) noted that there is no significant effect between board of director's relations with the CEO and firm financial innovation in the financial services sector in Kenya. However, board of director's relations with the CEO had significant coefficients of estimate based on $\beta_5 = -0.17$ (p-value = 0.01, which is less than 0.05). Thus, board of director's relations with the CEO had a negative and significant impact on firm financial innovation in the financial services sector in Kenya. Therefore, the study rejects the hypothesis that board of directors relations with the CEO has no significant influence on firm financial innovation. As a result, it was estimated that for every unit increase in board of directors relations with the CEO, firm financial innovation in the financial services sector in Kenya declines by 0.17 units. The results are in contrast to those of Johnson et al. (2012), who discovered that the relationship between the board of directors and the CEO fosters innovation by raising the caliber of advice and counsel and enhancing the acceptability of the information the directors provide.

Wu (2018) also discovered a curvilinear association between the performance of new product introduction and the board-CEO relationships. Similarly, Kang, Cheng and Gray, (2007) found that board–CEO relationships contribute to innovation strategic decision making. Johnson *et al*., (2012) indicated that director relationships with CEO imply that these relationships both reinforce the acceptance of the information and have an impact on the quality of advice and counsel. According to the study's theory, the existence of these relationships should strengthen the directors' capacity for advice and counsel, which will probably lead to innovation.

However, there is limited evidence on the direct association between board of directors relations with the CEO and firm financial innovation. Therefore, the current research contributes new perspectives on the negative effect of board of director's relations with the CEO on firm financial innovation in the financial services sector in Kenya.

Finally, regarding the control variables effect on the dependent variable, the findings indicated that only firm performance that had a positive and significant influence on firm financial innovation in the financial services sector in Kenya ($\beta_6 = 0.34$, $p < 0.05$). However, firm age did not have a significant effect on firm financial innovation in the financial services sector in Kenya ($\beta_7 = 0.01$, $p > 0.5$). Similarly, firm type did not have a significant effect on firm financial innovation in the financial services sector in Kenya ($\beta_7 = -0.06$, $p > 0.5$).

4.12.2 Moderating effect

H_{07a} hypothesized that CEO tenure does not moderate the association between board of director's education and firm financial innovation in the financial services sector in Kenya. The results indicated that CEO tenure has a negative and significant moderating effect on the relationship between board of director's education and firm financial innovation ($\beta=-2.09$, $p<0.01$). Hence, the hypothesis was rejected. This result implies that CEO tenure weakens the relationship between board of directors' education and firm financial innovation. It could be that CEOs receptiveness to firm financial innovation reduces as their tenure increases.

As a consequence, CEOs with long tenure could have a domineering effect on the board, perhaps to the extent of fully or partially offsetting the positive effect of a

highly educated board of directors on firm financial innovation. It is also possible that a highly educated board may prefer to give a long tenured CEO the latitude to run the firm as they deem best without necessarily demanding innovations. Consistent with Huang, Kabir & Thijssen (2024), it is also possible that CEOs with many years at the helm are also more likely to be in alignment with their boards meaning that the CEOs' interests are aligned with those of the board, which potentially reduces the monitoring and advisory quality of the boards.

Hypothesis $H0_{7b}$ stated that CEO tenure does not moderate the relationship between board of directors' experience and firm financial innovation in the financial services sector in Kenya. The results indicated a positive and significant moderating effect of CEO tenure on the relationship between board of directors' experience and firm financial innovation ($\beta = 0.88$ $p<0.01$). This study, therefore, rejected hypothesis H_{07b} since CEO tenure moderates the relationship between board of directors' experience and firm financial innovation in the financial services sector in Kenya.

The implication is that CEO tenure changes the direction of the relationship between board of directors' experience and firm financial innovation from an insignificant link to significant. It could be that as CEOs extend their tenure, they become more accustomed to the environment thereby accumulating knowledge and skills that are key to enhancing firm financial innovation in the financial services sector. Further, a longer tenured CEO may have a higher capability to harness the various experiences held by the directors for the benefit of the firm from an innovation perspective, which could not perhaps materialise with a shorter tenured CEO.

The findings support the conclusions reached by Bereskin & Hsu, (2013) that the CEO of an organization would significantly direct a firm's strategy and that much of

the leadership for developing and championing innovation is driven by CEOs. Chen (2013) corroborates findings of this study, indicating that a relationship between CEO tenure and R&D investment enhances knowledge of the ways in which the CEO life cycle influences business investment decisions, especially in R&D.

Evidence of the positive moderating effects of board human and social capital points to the board's ability to influence managerial decisions through these resources, giving insight into how boards affect CEOs' capacity for making decisions and, in turn, how they decide what R&D to invest in. According to Zheng et al. (2020), CEOs that have high self-regarding values harm a company's long-term orientation, which in turn reduces innovation efforts and performance. Furthermore, through long-term orientation, the association between CEO values and firm financial innovation is weakened by CEO tenure, CEO dualism, and environmental uncertainty.

Hypothesis H_{07c} postulated that CEO tenure does not moderate the relationship between board of directors' functional diversity and firm financial innovation in the financial services sector in Kenya. The findings showed a negative but insignificant moderation effect of CEO tenure on the relationship between board of directors' functional diversity and firm financial innovation (β=-0.44, $p<0.05$). Therefore, this hypothesis was rejected as the study found a significant influence of moderating role of CEO tenure on board of directors' functional diversity and firm financial innovation.

Hypothesis H_{07d} suggested that CEO tenure does not moderate the relationship between board of director's prestige and firm financial innovation in the financial services sector in Kenya. The results showed a positive and insignificant moderation effect of CEO tenure on the relationship between board of director's prestige and firm

financial innovation (β=0.29 p>0.05). Thus, we failed to reject the hypothesis. It implies that CEO tenure has no influence on the relationship between board of director's prestige and firm financial innovation in the financial services sector in Kenya.

Hypothesis $H0_{7e}$ postulated that CEO tenure does not moderate the relationship between board of director's interlocks and firm financial innovation in the financial services sector in Kenya. The results indicated a positive and significant moderating effect of CEO tenure on the relationship between board of directors' interlocks and firm financial innovation ($\beta = 0.59$ $p<0.05$). This study, therefore, rejected hypothesis H_{07e}. The implication is that CEO tenure strengthens the relationship between board of directors' interlocks and firm financial innovation.

There is a possibility that as the CEO tenure lengthens, there is a better link between the bank and external environment thereby improving on firm financial innovation. It is likely that because individually, the two variables (director interlocks and CEO tenure) have a positive and significant effect on firm financial innovation, combining the two will have an exponential impact on firm financial innovation.

Hypothesis H_{07f} stated that CEO tenure does not moderate the relationship between board of director's relations to the CEO and firm financial innovation in the financial services sector in Kenya. The findings showed a positive but insignificant moderation effect of CEO tenure on the relationship between board of director's relations to the CEO and firm financial innovation (β=0.02, p>0.05). Therefore, we failed to reject this hypothesis. It implies that CEO tenure does not change the direction of the relationship between board of director's relations to the CEO and firm financial innovation in the financial services sector in Kenya.

4.13 Mod graphs

Modgraphs are used, according to Jose (2008), to illustrate the nature of moderations and whether they have an enhancing or antagonistic moderating effect. In order to illustrate the nature of the CEO tenure moderating influence on the link between board capital (board education, board experience, director interlocks, board prestige, board relationships with CEO, and board functional diversity), the study used modgraphs.

Aiken & West (1991) assert that merely utilizing the findings of hierarchical regression to draw conclusions about moderations is insufficient in the absence of demonstrating the moderation effect through the use of a moderation graph at various moderator levels. Consequently, the importance of the CEO tenure coefficient was evaluated at low, medium, and high educational, board experience, and director interlock levels.

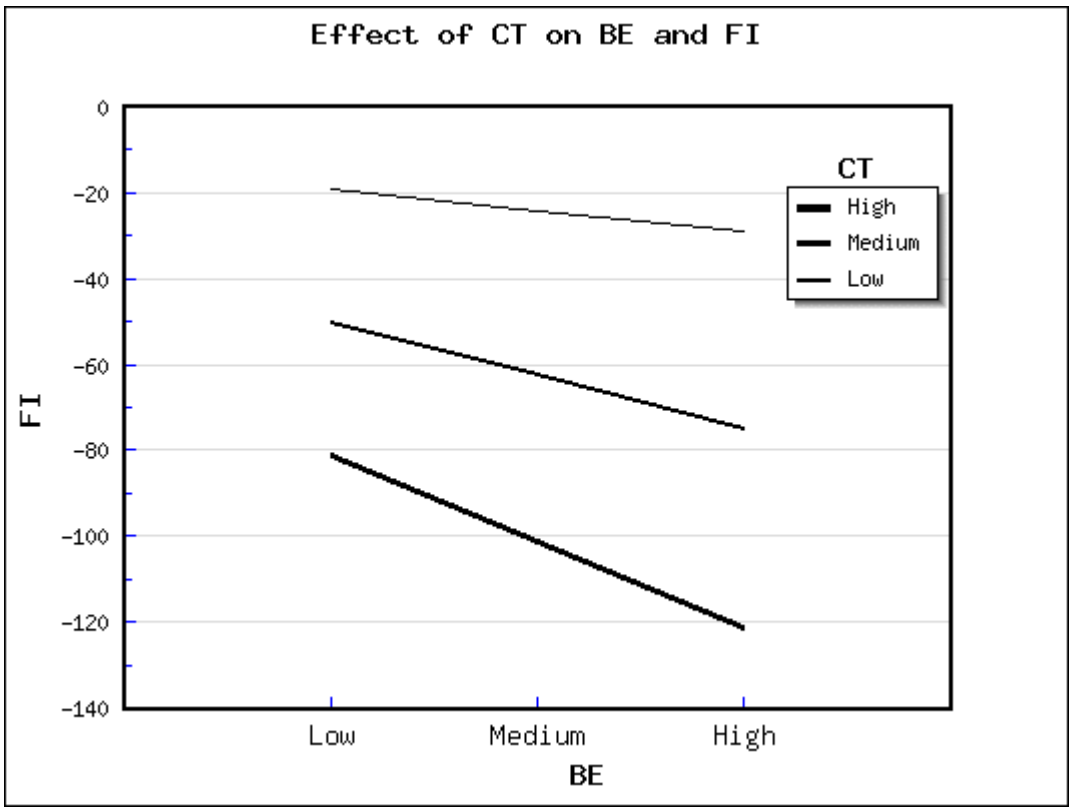


Figure 4.1: Modgraph for Moderating Effect of CEO tenure on the Relationship Between Board Education and Firm financial innovation

Key: CT=CEO tenure, BE=board education, FI=firm financial innovation
Source ;(Field data, 2020)

The null hypothesis 7a was not supported by Figure 4.1, which showed that a steeper slope was created between board education and business financial innovation at greater CEO tenure levels. This suggested that the association between board education and business financial innovation is negatively and significantly moderated by the CEO's tenure. Figure 4.1's findings show an enhanced moderation effect, where longer CEO tenures boost the impact of board education on financial innovation within the company.

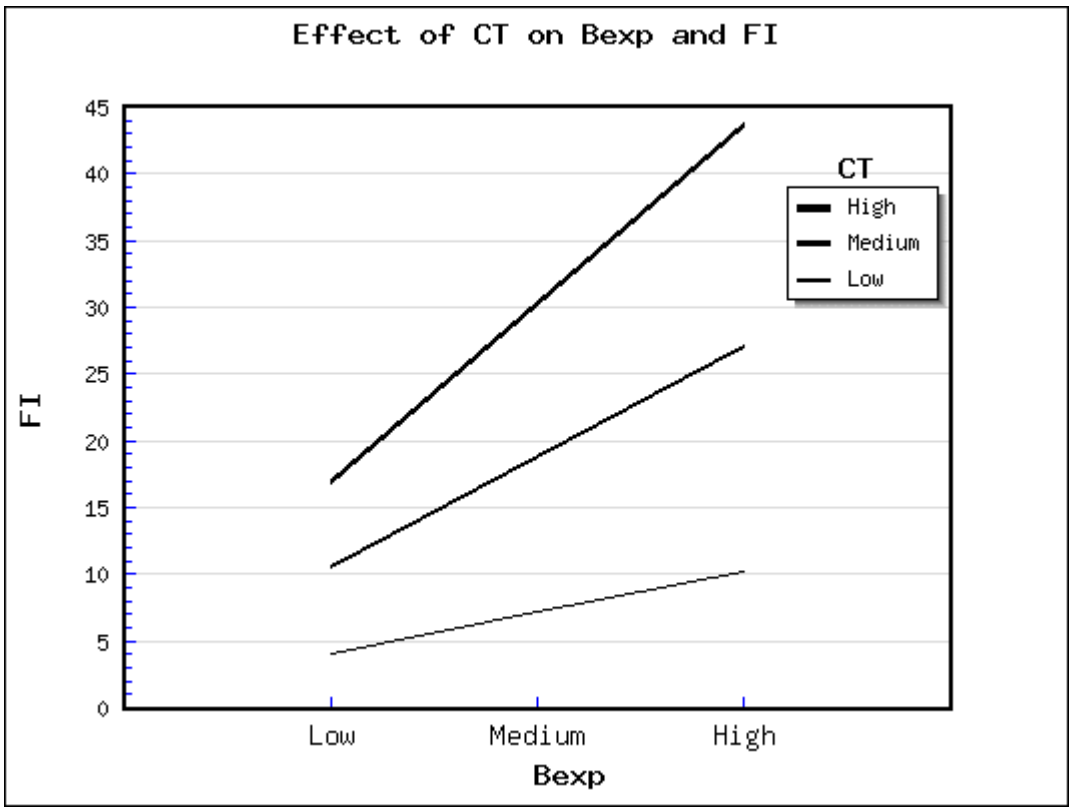


Figure 4.2: Modgraph for Moderating Effect of CEO tenure on the Relationship Between board experience and firm financial innovation

Key: Bexp = board experience, CT=CEO tenure, FI=Firm financial innovation
Source ;(Field data, 2020)

The graph in Figure 4.2 demonstrated that, as indicated by the steepness of the slope, board experience contributes more to firm financial innovation when the firm has high levels of CEO tenure than when there are low levels of CEO tenure. Null hypothesis 7b was thus disproved. Therefore, the association between board experience and firm financial innovation is positively and significantly moderated by the CEO's tenure. Figure 4.2's findings show an enhanced moderation effect, whereby longer CEO tenure increases the impact of board experience on financial innovation within the company.

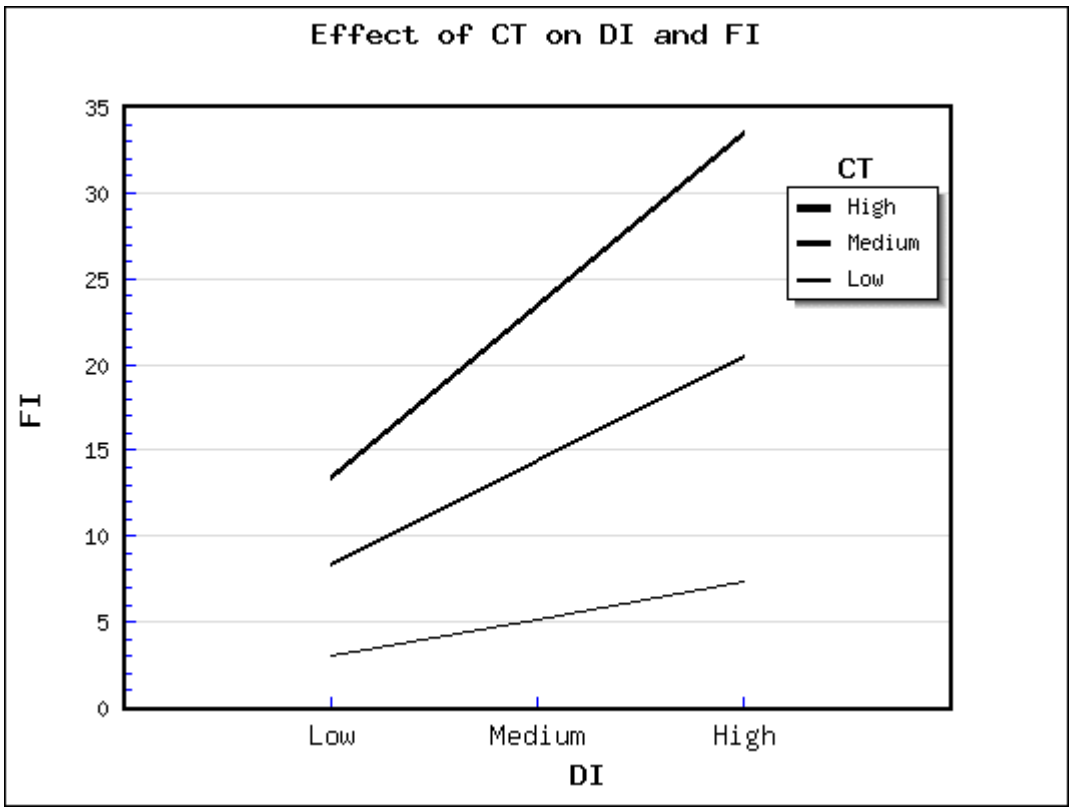


Figure 4.3: Modgraph for Moderating Effect of CEO tenure on the Relationship Between director interlock and firm financial innovation

Key: DI=Director interlock, CT=CEO tenure, FI=firm financial innovation
Source; (Field data, 2020)

The steepness of the slope in Figure 4.3's interaction plot illustrates an enhancing effect that increases with CEO tenure: it amplifies the influence of director interlocks on firm financial innovation. Thus, hypothesis 7d was disproved. Therefore, the association between director interlock and firm financial innovation is favorably and significantly moderated by CEO tenure.

4.14 Summary of Hypothesis Testing Results

The summary of the multiple and hierarchical regression models was shown in Table 4.13 below. The table displays (R2) and Δ in (R2) for the main and interaction effects, together with the conclusion drawn from the hypothesis.

Table 4.213

Summary of Hypotheses Testing Results

Hypothesis Formulated	**Beta (β)**	**ρ – values**	**R^2**	Decision
Main Effects				
H_{01}: Educational qualifications of directors have no statistically significant effect on firm financial innovation in the financial services sector	0.24	0.00		Rejected
H_{O2}: There is no significant effect between board of director's experience and firm financial innovation in the financial services sector in Kenya	-0.10	0.08		Accepted
H_{O3}: There is no significant effect between board of directors' functional diversity and firm financial innovation in the financial services sector in Kenya	0.21	0.01		Rejected
H_{O4}: There is no significant effect between board of director's interlocks and firm financial innovation in the financial services sector in Kenya	0.30	0.00		Rejected
H_{O5}: There is no significant effect between board of directors' prestige and firm financial innovation in the financial services sector in Kenya	0.29	0.00		Rejected
H_{O6}: There is no significant effect between board of director's relations with the CEO and firm financial innovation in the financial services sector in Kenya	-0.17	0.01		Rejected
Moderation – CEO Tenure	**Beta (β)**	**ρ – values**	**$R^2\Delta$**	
$H_{O7a:}$ CEO tenure does not moderate the relationship between board of director's education and firm financial innovation in the financial services sector in Kenya	-0.209		.174	Moderated
$H_{O7b:}$ CEO tenure does not moderate the relationship between board of directors' experience and firm financial innovation in the financial services sector in Kenya	0.88		.039	Moderated
$H_{O7c:}$ CEO tenure does not moderate the relationship between board of directors' functional diversity and firm financial innovation in the financial services sector in Kenya.	-0.44		.037	Moderated
$H_{O7d:}$ CEO tenure does not moderate the relationship between board of director's prestige and firm financial innovation in the financial services sector in Kenya	0.29		.004	Not Moderated
$H_{O7e:}$ CEO tenure does not moderate the relationship between board of director's interlocks and firm financial innovation in the financial services sector in Kenya.	0.59		.019	Moderated
$H_{O7f:}$ CEO tenure does not moderate the relationship between board of director's relations to the CEO and firm financial innovation in the financial services sector in Kenya	0.02		.003	Not Moderated

Source (author, 2025)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study, which looked at the moderating effect of CEO tenure on the connection between board capital and firm financial innovation in Kenya's financial services industry, is summarized in this chapter. The research was directed by particular goals and theories. As a result, this chapter includes an overview of the research project, study conclusions, suggestions, and future directions for data analysis research.

5.2 Summary of Findings

The purpose of the study was to test the moderating effect of CEO tenure on the relationship between board capital and firm financial innovation in the financial services sector in Kenya. The objectives of the study were to establish the effect of board of directors' education on firm financial innovation in the financial services sector in Kenya, analyse the effect of board of directors' experience on firm financial innovation in the financial services sector, determine the effect of board of directors' functional diversity on firm financial innovation in the financial services sector in Kenya, test the effect of board interlocks on firm financial innovation in the financial services sector in Kenya, analyse the effect of prestige of the board of directors on firm financial innovation in the financial services sector in Kenya, test the effect of directors' relations with the CEO on firm financial innovation in the financial services sector in Kenya and finally test the moderating effect of CEO tenure on the relationship between board capital and firm financial innovation in the financial services sector in Kenya.

The study relied on causal research design to identify the explanatory variables' possible effect on the dependent variable. The study utilized both primary and secondary data while the data was analysed using descriptive and inferential statistics. These results are robust with respect to the use of both board human and board social capital and firm innovation measures as well as several controlling variables.

Basing on the findings in chapter four, board education had a mean of 3.957, with a maximum (minimum) value of 5 (1). The findings of this study showed that board education had coefficients of estimate which was significant basing on $\beta_1 = 0.24$ (p-value = 0.00 which is less than $\alpha = 0.05$). The null hypothesis was thus rejected, and it was concluded that educational qualifications of directors significantly influence firm financial innovation in the financial services sector. This finding suggests that there was up to 0.24 unit increase in firm financial innovation for each unit increase in the education qualification of directors.

Besides, the mean value of board experience is 2.778, while the maximum and minimum value was five and one respectively. Research findings showed that board experience had coefficients of estimate which was insignificant basing on $\beta_2 = -0.10$ (p-value = 0.08 which was more than $\alpha = 0.05$) hence we failed to reject the null hypothesis. This finding indicated that there would be no change in the firm financial innovation in the financial services sector with either increase or decrease in the board experience.

Regarding board functional diversity, the maximum value was five, and the minimum is one, with a mean of 4.323. The finding shows that board functional diversity had coefficients of estimate which was insignificant basing on $\beta_3 = 0.21$ (p-value = 0.01) which is less than $\alpha = 0.05$) implying that the null hypothesis was rejected, and it was

concluded that board functional diversity does influence firm financial innovation in the financial services sector in Kenya. The findings contrast with findings by Brinette, Khemiri, & Belkacemi, (2020) findings that board of directors' knowledge (educational and functional diversity) do not impact innovation performance.

Further, director interlocks had a mean of 3.478 with the highest value of five and the lowest value of one. The regression results showed that board of director interlocks had significant coefficients of estimate based on $\beta 4 = 0.3$ (p-value = 0.00, which is less than 0.05). As a result, the study rejected the hypothesis that board of director interlocks has no significant effect on firm financial innovation in the financial services sector in Kenya.

Board prestige shows an average of 3.593 while director relations with the CEO had a mean of 2.631. The study findings showed that prestige of the board of directors had coefficients of estimate which was significant basing on $\beta_3 = 0.29$ (p-value = 0.00 which is less than $\alpha = 0.05$) implying that we reject the null hypothesis stating that there is no significant effect between prestige of the board of directors and firm financial innovation. The implication is that there is up to 0.29-unit increase in firm financial innovation for each unit increase in prestige of the board of directors. The results support the notion that board of directors' prestige yields investment in research and development that is key to firm innovation.

Board of director's relations with the CEO had significant coefficients of estimate based on $\beta_5 = -0.17$ (p-value = 0.01, which is less than 0.05). Thus, board of director's relations with the CEO had a negative and significant impact on firm financial innovation in the financial services sector in Kenya. Therefore, the study rejected the hypothesis that board of directors relations with the CEO has no

significant influence on firm financial innovation. As a result, it was estimated that for every unit increase in board of directors relations with the CEO, firm financial innovation in the financial services sector in Kenya declines by 0.17 units.

As well, firm financial innovation had a mean of 4.12, with a maximum (minimum) value of 5 (2.22). Finally, average CEO tenure was six years (mean = 7.2256). The study conducted diagnostic tests on the moderating effect of CEO tenure on the relationship between board human and social capital and firm financial innovation in the financial services sector in Kenya. Since the residuals were normal, the normality test indicated that there was no violation of the normal distribution assumption of error terms. Furthermore, as the null hypothesis of constant variance was not rejected at the 5% significance level, there was no heteroscedasticity in the residuals. Furthermore, there isn't a difficulty with multicollinearity among the independent variables. Lastly, the independent and dependent variables seem to have a linear connection.

In summary,, consistent with expectations, the correlation findings revealed a positive relationship between board education (β=.24, P<.05), board functional diversity (β=.21, P<.05), director interlocks (β=.3, P<.05), board of directors' prestige (β=.29, P<.05), and firm performance (β=.3, P<.05) with firm financial innovation in the financial services sector in Kenya. However, contrary to expectations, board experience was not correlated to firm financial innovation.

The findings from the hypotheses testing indicated that independent variables (board education, functional diversity, board of director's interlocks and board prestige) significantly and positively influenced firm financial innovation in the financial services sector in Kenya. However, board of directors' experience did not have an

influence on firm financial innovation. Board of directors' personal relations with the CEO have a negative and significant impact on firm financial innovation.

Regarding the moderation effect, consistent with expectations, CEO tenure moderates the link between board of director's education and firm financial innovation in the financial services sector in Kenya, board of directors' experience and firm financial innovation in the financial services sector in Kenya, board of directors' functional diversity and firm financial innovation in the financial services sector in Kenya and board of director's interlocks and firm financial innovation in the financial services sector in Kenya. However, contrary to expectations, CEO tenure does not moderate board of director's prestige and firm financial innovation in the financial services sector in Kenya and board of director's relations to the CEO and firm financial innovation in the financial services sector in Kenya.

Table 5.31
Summary of Findings

Hypothesis Formulated	**Decision**	**Finding**
H_{01}: Educational qualifications of directors have no statistically significant effect on firm financial innovation in the financial services sector	Rejected	Educational qualifications affect firm innovation
H_{O2}: There is no significant effect between board of director's experience and firm financial innovation in the financial services sector in Kenya	Accepted	Director experience has no effect on firm innovation
H_{O3}: There is no significant effect between board of directors' functional diversity and firm financial innovation in the financial services sector in Kenya	Rejected	Functional diversity affects firm innovation
H_{O4}: There is no significant effect between board of director's interlocks and firm financial innovation in the financial services sector in Kenya	Rejected	Director interlocks affect firm innovation
H_{O5}: There is no significant effect between board of directors' prestige and firm financial innovation in the financial services sector in Kenya	Rejected	Board prestige affects firm innovation
H_{O6}: There is no significant effect between board of director's relations with the CEO and firm financial innovation in the financial services sector in Kenya	Rejected	Director ties to CEO negatively affect firm innovation
Moderation – CEO Tenure		
$H_{O7a:}$ CEO tenure does not moderate the relationship between board of director's education and firm financial innovation in the financial services sector in Kenya	Moderated	CEO tenure moderates the relationship between board education and firm innovation
$H_{O7b:}$ CEO tenure does not moderate the relationship between board of directors' experience and firm financial innovation in the financial services sector in Kenya	Moderated	CEO tenure moderates the relationship between board experience and firm innovation
$H_{O7c:}$ CEO tenure does not moderate the relationship between board of directors' functional diversity and firm financial innovation in the financial services sector in Kenya.	Moderated	CEO tenure moderates the relationship between functional diversity and firm innovation

Hypothesis Formulated	Decision	Finding
$H_{O7e:}$ CEO tenure does not moderate the relationship between board of director's interlocks and firm financial innovation in the financial services sector in Kenya.	Moderated	CEO tenure moderates the relationship between board interlocks and firm innovation
$H_{O7f:}$ CEO tenure does not moderate the relationship between board of director's relations to the CEO and firm financial innovation in the financial services sector in Kenya	Not Moderated	CEO tenure does not moderate the relationship between directors' ties to the CEO and firm innovation

Source (author, 2025)

5.3 Conclusion

Unlike previous research, this study goes beyond the extant literature on board capital and provides, through agency theory, human capital theory, social capital theory, the resource dependence theory as well as upper echelons theory, a deeper view on how CEO tenure affects firm financial innovations. The results of this study, consistent with expectation suggests that there is a positive link between educational qualifications of directors and firm financial innovation in the financial services sector in Kenya. The findings could be attributed to the fact that the directors of the banks' board possess at least one academic degree.

The possession of good educational qualifications makes it possible for the board of directors to generate and assess options and select the most appropriate course of action that significantly contributes to firm financial innovation in the financial services sector. They also have greater cognitive ability to critically weigh options, assess the commercial and technical viability of proposed innovations and adopt new ideas and to accept innovations.

The directors of companies who possess relatively higher educational qualifications, for instance those in possession of advanced academic degrees namely masters and doctorate are practically in a better position to appraise and appreciate a business or

other related matter that requires critical reasoning skills. Furthermore, these directors with advanced degrees not only have the capability to critique proposals but can generate ideas that are not easily fathomable to the those in possession of average academic certifications.

The implication of this viewpoint is that possessing at least one academic degree enables board of directors to have a greater capacity for information processing and receptivity to innovation in the financial services sector. Those with higher educational qualifications are consequently expected to have an even higher capacity for information processing and receptivity to innovation in the financial services sector. However, when moderated with CEO tenure, the relationship between board of directors' experience and firm financial innovation weakens. It is possible that as a CEO's term lengthens, their willingness to embrace firm financial innovation decreases.

Also, as the CEO tenure lengthens, it is possible that the CEO adopts domineering tendencies thereby offsetting, albeit partially, the ability of an educated board to influence firm financial innovation. It is also probable that an educated board could shy from challenging the CEO with a longer tenure to adopt innovations. It is also possible that as the CEO's tenure lengthens, the CEO adopts narcissistic tendencies making it difficult for other board members to challenge them to become more innovative.

The apparent negative effect of a CEO's tenure on the relationship between board of directors' educational qualifications and firm financial innovations could also suggest that a more educated board could leave the CEO to manage the firm according to their whims hence weakening the desired effect of board education on firm financial

innovations. This might be the case due to a number of reasons. First, board members who are more educated are perhaps preoccupied with their own ventures and commitments thereby leaving the CEO to chaperon their organisation. Secondly, board members seeing that the CEO whose tenure has lengthened may adopt a hands-off position, a 'wait and see' scenario as they provide the CEO with the latitude to run the organisation as they deem fit.

Contrary to expectations, however, the study revealed that board of directors' experience had no influence on firm financial innovation in the financial services sector in Kenya. The finding could be attributed to the fact that the board of directors had limited experience in other banks as employees as well as board members.

Also, there is a possibility that a significant number of the directors have solely served in the board of the bank hence they might have a very restricted knowledge base with reference to spurring firm financial innovation. Thus, their limited perspectives could be the reason why their experience does not contribute to firm financial innovation in the financial services sector in Kenya. It is also possible that the experience the directors have accumulated from other firms may not count much on firm financial innovations of the focal firm because those other firms where the directors have accumulated their experiences may not have been innovative in the first place.

Directors of companies who may not have experience either as directors or as employees can approach an issue with an open mind, therefore avoiding reference to preconceived ideas, perceptions and a sense of entitlement to one's point of view. This may be the ideal situation to foster innovations as one is unlikely to reference the situation at hand with what they are used to, as a result of their experiences. Often, we hear entrenched individuals make reference to the way 'we do things here',

meaning that they are not open to new ways of doing things in their business environments.

With these kinds of notions, it is possible businesses would stick to their old and conventional ways of doing business thereby not adopting the modern, or even postmodern ways of doing business. These positions often taken by senior management members of an organisation, in most cases who are elder and authoritative can stifle, dim or suffocate innovative ideas that may be generated and proposed by junior, young and often less experienced members of the organisation. It is therefore likely, on this basis, that directors who do not have experience as directors or employees can foster more innovations when compared to those who have accumulated prior experiences.

With the recent developments in technology, it is possible that past experiences with conventional business and service practices may have little bearing on the current innovative ways of providing goods and services. On this basis, it is possible that past experiences either as director or employee may be irrelevant in the design and delivery of the goods and services that are demanded by the often-sophisticated millennials and generation Z clientele. Accordingly, most of the experiences that have been accumulated by the members sitting on the company boards in the years leading to the research may not have counted for much in terms of contributing to innovations.

However, with the inclusion of CEO tenure as a moderator, there is a positive link between board of directors' experience and firm financial innovation in the financial services sector. As a CEO's tenure increases, they are likely to get more familiar with the external environment, putting them in a better position to advance corporate

innovation. As the CEO tenure elongates, it is also likely that they are able to enhance their capability to tap into the varied experiences possessed by the other directors hence increasing the overall capability of the board of directors to foster firm financial innovations. It is also possible that with a longer tenure, the CEO could potentially challenge the board of directors to help the focal firm with information and other resources that can be leveraged on to deliver firm financial innovations.

Further, despite the variety of professional backgrounds in the board of directors, there was no significant relationship between board functional diversity and firm financial innovation in the financial services sector. There is a possibility of limited emphasis into the functional areas relating to product research and development and search for new opportunities that are key to firm financial innovation. Also, in light of this research, the researcher recognises that it is possible the functional diversity of the board may add to insignificant contribution to innovations. This is primarily because possession of a given professional background e.g. medical doctor may have little bearing on a banks' innovation capabilities.

It also possible that the variety of professional backgrounds on the basis of academic degrees held by board members for example Engineering, Medicine, Law etc that is not accompanied by hands on experience in related business areas, for instance banking, may not have counted for much in fostering, generating or otherwise aiding innovations. As such, even where you have a diverse board of directors when one makes reference to the academic degrees held by the members of boards of directors, this may not ultimately be positively related to innovation.

It is also possible that functional diversity of board of directors gives rise to diversity of opinions that can potentially generate board conflict, so much so that the board

may become dysfunctional. With a dysfunctional board, it may be impossible to agree on financial innovations, let alone agreeing on an innovation's strategy. Nevertheless, future scholars could analyse further the link between board functional diversity and firm financial innovation to ascertain if the study findings hold.

However, with the inclusion of CEO tenure as a moderator, this study found that CEO tenure moderates the link between board of directors' functional diversity and firm financial innovation in the financial services sector. It is possible that with a longer CEO tenure, variables that were not correlated to firm financial innovations may begin to have an effect primarily due to the actions of an entrenched CEO.

Additionally, board of directors' interlocks positively influenced firm financial innovation in the financial services sector in Kenya. The director interlocks cause flow of information thus providing resources key to facilitating firm financial innovation. Also, interlocking directors is a key source for collusion and cooperation in the financial services sector that is depicted by constant change in business practices and the level of firm financial innovation. Therefore, board of directors' interlocks serves as a source of information on business practices that ultimately contributes to an improvement in the firm financial innovation. This is contrary to the findings by Nam & An (2018) whose study result suggest that the interlocking directors maintain and use vested right to pursue their own interests. That being said, it is possible that the direction of ties plays a role, and thus needs to be considered. Specifically, it may be important to consider whether a tie is incoming or outgoing. Yildiz et al. (2023) demonstrate that focal firm directors serving on the boards of other businesses (i.e., outgoing ties) are more advantageous for leveraging partners' global knowledge because of their increased familiarity, identification, and executive

power. But they also demonstrate how outside directors, or inbound ties, can support worldwide expansion and offer more valuable first-hand experience to the boards of focal enterprises as these links strengthen.

As well, the association between board of directors' interlocks and firm financial innovation in the financial services sector is further strengthened with the inclusion of CEO tenure as a moderator. This implies that as the CEO tenure lengthens, interlocking directors heighten their contribution to firm financial innovation in the financial services sector. An entrenched CEO may be able to leverage on the information and other resources that can be available from the cumulative relationships existing in an interlocked board of directors.

Besides, board of directors relations with the CEO negatively influences firm financial innovation in the financial services sector in Kenya. There is a possibility that the board of directors relations with the CEO has not resulted to beneficial outcomes such as an increase in the level of advice and counsel as well as reducing the tension between the board and the CEO. With the inclusion of CEO tenure as a moderator, this study found CEO tenure does not moderate the association, or rather the link between board of directors' personal relations with the CEO and firm financial innovation in the financial services sector.

It is possible that an entrenched CEO does not value the advice and counsel provided by their close associates. This situation may arise due to a number of reasons. First, a CEO whose tenure is lengthened may adopt a narcissistic behaviour thereby making it difficult for them to be advised or to be receptive to advice. Second, even where there are directors with personal and business connections with the CEO, they may refrain from advising the CEO whose tenure is elongated. However, since much has not been

done on the link between board of directors relations with the CEO and firm financial innovation, future scholars could examine further the relationship to ascertain the validity of the present research findings.

Finally, board of directors' prestige exhibited a positive and significant influence on firm financial innovation in the financial services sector. The implication is that the prestige of directors (board capital) can enhance the credibility and firm financial innovation of the firm they serve. The reason for this is that prestigious individuals on the focal bank's board provide confirmation to the rest of the financial services sector of the value and worth of the firm. In so doing, the firm is likely to attract investors which could be key to spurring firm financial innovation.

With the inclusion of CEO tenure as a moderator, this study found CEO tenure does not moderate the link between board of directors' prestige and firm financial innovation in the financial services sector. It is possible that an entrenched CEO develops narcissistic behaviours so much so that they do not value the advice and counsel provided by the prestigious board of directors.

5.4 Recommendations

This academic study provides insightful guidance for the Kenyan regulators on the necessity to encourage the shareholders of financial sector players to appoint to their board directors who possess higher stocks of human and social capital. Further, this investigation makes several significant contributions to the literature. In addition, this study provides meaningful insights concerning what companies should consider in making board appointments.

Consistent with Abtahi, Chkir & Benkraiem (2023), we find that the education qualifications of directors are key to enhancing firm financial innovation in the financial services sector in Kenya. Thus, the study recommends for board of directors to have at least one academic degree. This recommendation is based on empirical evidence emanating from this study, consistent with extant literature. With the relatively higher educational qualifications, the directors of companies will be better able to appraise themselves of the market dynamics, generate numerous, feasible and practical options that can position a market player positively in terms of innovations.

Besides, focus needs to be on ensuring that a significant portion of the directors have an educational specialisation that enhances receptiveness to firm financial innovation. Also, emphasis needs to be on ensuring that the directors are aware of relevant technologies and are able to predict, comprehend, evaluate and anticipate long-term change in technology, specifically in the financial services sector.

This study found that there would be no change in the firm financial innovation in the financial services sector with either increase or decrease in the board experience. Consequently, this study recommends that directors' experience should not be among the considerations to be looked into when boards are filling vacancies in the board for firms that are pursuing innovation.

This study, consistent with Somech and Drach-Zahavy (2013), Lee *et al*., (2015), and Chae *et al*., (2015) found a positive association between functional diversity and creative efforts of teams and therefore recommends that boards filling vacancies in the boards of firms pursuing innovation should consider the functional diversity of the board to foster firm financial innovation.

Since board of directors' interlocks contributes to firm financial innovation in the financial services sector, it is necessary to have a director affiliated with one bank sitting on the board of another bank to spur cooperation, information and resource sharing and ultimately improve on firm financial innovation in the industry. It will also help with managing the firm's relationship with the external environment and reducing competitive uncertainty. Nevertheless, there should be caution as there is a possibility of board members acting on personal motives. A vast body of research indicates that corporate insiders use board interlocks to communicate information about their business operations, and that this knowledge has a significant impact on performance, governance, and firm policy. In particular, corporate directors may use their social networks to divulge significant, non-public information to a portion of their investor base. These investors would probably engage in informed trading at the expense of other market participants as a result of this leakage, compromising the integrity of the capital markets.

Further, the study has indicated that board of directors relations with the CEO negatively influences firm financial innovation in the financial services sector. As a prescriptive measure, financial services sector firms could specifically guard against existence of such relations, thereby reducing the tension between the board and CEO and instead foster cooperation that would be beneficial to firm financial innovation. Also, since there would be higher acceptability of information emanating from board of directors who have relations with the CEO, banks could prioritize on firm financial innovation since technology change often experiences resistance from either the board or the top management of a company.

Finally, the positive link between board of directors' prestige and firm financial innovation in the financial services sector suggest that the banks' innovation could be affected by those that serve in its board. Thus, the banks could capitalize on their board members that have high prestige relative to directors of other banks and have connections to persons who have high prestige so as to build on its credibility and spur innovation within the organization. In so doing, the banks will be able to attract investments in research and development and thereby improve on firm financial innovation in the financial services sector.

CEO tenure is neither inconsequential nor trivial with regard to relationships between board human and social capital and firm financial innovations and therefore its impact should be evaluated by the board. But there should be caution, as it can potentially be a double-edged sword. CEOs in their early stages of their tenure tend to be more innovative before they can settle down in their established ways of running a business. Long tenured CEOs may be more capable of leveraging on their experiences to deliver more innovations. Decisions regarding this matter will need to be context - dependent as no size fits all.

5.5 Theoretical Implications

This study has several theoretical implications. The results of this study are robust in that they remain consistent with extant literature and have critical implications for both the professional and academic world. A greater and deeper understanding of board capital can help researchers deepen their understanding on the theoretical foundations underpinning board capital and firm financial innovations. This study validates the resource-based theory in the sense that it confirms that the possession of academic qualifications provides the directors with higher information processing

capability to comprehend and evaluate a vast amount of information that could be key to spurring firm financial innovation in the financial services sector. Precisely, courtesy of their education qualifications, the directors are capable of advancing ideas that are likely to contribute to innovation.

Also, the findings contribute to the resource dependency theory by indicating that board of directors' interlocks link the focal financial services sector firm with the external environment and resources to maximize their extent of innovation. However, on the aspect of board experience, the study contradicts the resource dependency theory since it found no link between board experience and firm financial innovation.

The theory is based on the premise that experience within a specific industry such as financial services sector is likely to affect the decision-making process of the board. Therefore, it could either positively or negatively affect firm financial innovation depending on the theory's proposition. There is thus need for further investigation on the link between board experience and firm financial innovation in the financial services sector to validate the results of the research.

5.6 Practical Implications

This study has several practical implications. This study was undertaken with the primary aim of extending the stream of innovation research from the developed countries to Sub Sahara Africa and in particular, to Kenya. The results will provide companies operating in Kenya with useful information on how their policies and actions might affect firm innovation. The findings of this study will assist various stakeholders for example, policy makers, regulators, and shareholders as well as firm managers on the moderating effect of CEO tenure on association between board

human and social capital and firm financial innovation. A greater and deeper understanding of the relationships between board capital and firm financial innovation can help shareholders, policy makers and boards of directors to develop actions to foster firm financial innovations.

Furthermore, deepening the understanding of shareholders, policy makers and boards of directors on the impact of CEO tenure on the link between board capital and firm financial innovation can also aid in determining how to interplay board capital and CEO tenure.

This study validates the requirements of having prospective candidates for board positions having to be in possession of advanced academic qualifications that enable them to have higher information processing capability to comprehend and evaluate a vast amount of information that could be key to spurring firm financial innovation in the financial services sector. Precisely, courtesy of their education qualifications, the directors are capable of advancing ideas that are likely to contribute to innovation. Following this study, those with power to appoint CEOs and directors of companies stand well guided in terms of appointing directors with relatively higher academic qualifications.

Additionally, our work has ramifications for practical policy with regard to director interlocks. According to Han et al., (2017), regulators and certain lobbyists appear to believe that interlock directorates are not helpful and are inclined to work towards their elimination. It is important for them to try to deepen their insights on the director interlocks before they conclude that the board interlocks require to be eliminated.

5.7 Areas for Further Research

The primary objective of this investigation was to test the moderating effect of CEO tenure on the link between board human and social capital and firm financial innovation in the financial services sector in Kenya. The unit of analysis was the collective boards of directors. Therefore, the individual directors' contributions were not taken into account. Consequently, it is imperative for future scholars to delve into the role, if any, played by individual directors in influencing firm financial innovation in the financial services sector. Further, future studies could incorporate more control variables. The reason for this is that there is a possibility that other factors other than board capital could influence firm financial innovation in the financial services sector.

Given the shared characteristic of shared or interlocked directorships, this study contributes to the ongoing discussion on the optimal board composition for enhancing firm financial innovation by demonstrating the effect of interlocking directorates. In particular, this study found that in Kenya's financial services industry, board of director interlocks have appreciable impact on business financial innovation.

However, this study may have fallen short in basing this conclusion on interlocks that are predominantly local, that is, without considering international board interlocks. According to Lamb & Roundy (2016), a number of frequently studied themes in research on board interlocks have unexpected omissions in the literature that have been uncovered. For example, scholars have not investigated the phenomenon of international interlocks (i.e., interlocks between firms located in different countries) or the implications of interlocks in a global context. This can be attributed to the fact that information from dissimilar interlock partners may be more useful to innovation than information received from similar interlock partners in that the former will

generate more ways of looking at any given situation or concept. This is a potential area for further research where researchers are encouraged to have an international outlook when studying board interlocks.

This research did not differentiate between incoming or outgoing director ties. Extant literature shows that the direction of ties plays a significant role, and thus needs to be considered. Specifically, it may be important to consider whether a tie is incoming or outgoing.

In addition, Han et al. (2017) found that when two firms have an interlock relationship, their choices for accounting methods—such as inventory and depreciation methods—are similar to one another. This suggests that director interlock can facilitate the diffusion of accounting method choices across firms, and that these similarities increase with the length of the two firms' interlock relationship. This gives rise to the fact that the duration of the study is perhaps significant, rather that its mere existence. Future research on director interlocks can consider the duration the board interlocks have existed and ascertain their role in firm financial innovations. Specifically, we recommend that in order to substantiate our results, future research investigates how the age of the interlock relationship impacts the effect of director interlock on firm financial innovations.

Also, the study indicated that board of director's experience and board of directors' functional diversity have no significant influence on firm financial innovation in the financial services sector in Kenya. There is a need for further studies on the same to establish if there will be any divergence from the present study's findings. Finally, future scholars could incorporate a mediator variable since there is a likelihood that

board capital influences firm financial innovation in the financial services sector via other variables.

This study also had additional limitations that include industry specificity, self-reported data, and static analysis. As the study focussed on the financial services sector in Kenya, it is probable that research that studies a wide array of industries may yield results that are widely generalizable. Although a common approach whereby a study relies on self-reported data, this study gathered primary data from directors of the firms in the banking industry in Kenya. Finally, this study constituted a static rather than a longitudinal analysis. Accordingly, consistent with Nuryanto, Basrowi & Quraysin (2024), future researchers are encouraged to consider diversifying their samples and to use longitudinal methods, which have the potential to study enterprises at various points in time. Diversified samples may capture dynamics of a wider array of firms hence enhancing generalisability of findings.

In addition, this research targeted obtaining the primary data from chairmen and CEOs of the focal firms. It is possible this may give rise to response bias. Future research can attempt to obtain the primary data from top management teams in evaluating the role of board capital in firm financial innovations. As the top management teams will be evaluating the performance of the board, it is unlikely there will be response bias. As such, the data will most likely be reliable in concluding on the role of the board capital that is possessed by the company directors of the focal firm in driving forward the firm's innovation agenda.

REFERENCES

Abatecola, G., & Cristofaro, M. (2020). Hambrick and Mason's "Upper Echelons Theory": evolution and open avenues. *Journal of Management History*, *26*(1), 116-136.

Abbas, J., Balsalobre-Lorente, D., Amjid, M. A., Al-Sulaiti, K., Al-Sulaiti, I., & Aldereai, O. (2024). Financial innovation and digitalization promote business growth: The interplay of green technology innovation, product market competition and firm performance. *Innovation and Green Development*, *3*(1), 100111.

Abtahi, Z., Chkir, I., & Benkraiem, R. (2023). Board diversity and corporate innovation: New evidence from the Canadian context. Finance Research Letters, 55, 103826.

Adams, R. B., & Ferreira, D. (2007). Women in the boardroom and their impact on governance and performance. Journal of financial Economics, 84(2), 291-309.

Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of economic literature*, *48*(1), 58-107.

Adewumi, O. M. (2024). Dynamic Analysis Of Innovation—Profitability Nexus In Service Firms: An Outlook Of A Small Service Economy. *International Journal of Innovation Management*, *28*(07n08), 2450031.

Adler, N. J. (2002). International dimensions of organizational behavior (Vol. 5). Boston: South-Western Cengage Learning.

Adler, P. S., & Clark, K. (2008). How important are method effects in cross-cultural research?. Journal of International Business Studies, 39(1), 2-21.

Adler, P.S., & Kwon, S.W. (2002). Social Capital: Prospects for a new concept. *Academy of Management Review*, 27:17-40

Adner, R. (2006). Match your innovation strategy to your innovation ecosystem. *Harvard business review*, *84*(4), 98.

Aduda, J., & Kingoo, N. (2012). The relationship between electronic financial services sector and financial performance among commercial banks in Kenya. *Journal of Finance and Investment Analysis*, 1(3), 99-118.

Agarwal, R., Sarkar, M. B., & Echambadi, R. (2002). The conditioning effect of time on firm survival: An industry life cycle approach. Academy of Management Journal, 45(5), 971-994.

Agyapong, F. O., Agyapong, A., & Poku, K. (2019). Nexus between social capital and performance of micro and small firms in an emerging economy: The mediating role of innovation. *Cogent Business & Management, 4*(1), 1–20. https://doi.org/10.xxxx/xxxxxx

Ahmad, W., Farag, H., & Wang, Y. (2023). Do new CEOs really care about innovation?. *European Financial Management*.

Ahuja, G.,Catalini, C., & Tucker, J. (2008). The role of collaboration in the commercialization of innovation: Evidence from bay area firms. Strategic management journal, 29(3),357-375.

Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Sage.

Akpanowo, R. E., & Akpan, D. C. (2024). Female Board Membership Attributes and the Market Value of Consumer Goods Companies in Nigeria.

Aldaoud, K. A. (2023). CEO characteristics and CEO's power and their impact on earnings per share: the moderating role of the political connection. *Int. J. Trade and Global Markets*, *18*(4), 385-406.

Alekseeva, N., Antoshkova, N., & Vasilenok, V. (2019, September). The Potential of Human Capitals Development in Russia in the Digital Age. In *International Conference on Digital Technologies in Logistics and Infrastructure (ICDTLI 2019)* (pp. 9-12). Atlantis Press.

Ali, A., & Zhang, J. (2015). Family control and earnings management: Evidence from China. Journal of International Accounting Research, 14(1), 33-68.

Ali, H. S., Jia, F., Lou, Z., & Xie, J. (2023). Effect of blockchain technology initiatives on firms' market value. Financial Innovation, 9(1), 1-35.

Allen, D., & Panian, R. (1982). The role of private equity in venture capital. Financial Management, 11(4), 32-40.

Allen, P. M. (2001). A complex systems approach to learning in adaptive networks. *International Journal of Innovation Management*, *5*(02), 149-180.

Almulhim, A. A., & Aljughaiman, A. A. (2023). Corporate sustainability and financial performance: The moderating effect of CEO characteristics. *Sustainability*, *15*(16), 12664.

Al-Shaer, H., Albitar, K., & Liu, J. (2023). CEO power and CSR-linked compensation for corporate environmental responsibility: UK evidence. Review of Quantitative Finance and Accounting, 60(3), 1025-1063.

Arena, M., Azzone, G., & Maggi, G. (2018). Board gender diversity and earnings management: Evidence from Italy. Corporate Governance: An International Review, 26(6), 711-727. Arena, M.,

Arenal, A., Armuna, C., Feijoo, C., Ramos, S., Xu, Z., & Moreno, A. (2020). Innovation ecosystems theory revisited: The case of artificial intelligence in China. *Telecommunications Policy, 44*(6), 101960.

Arghode, S. (2012). Board diversity, gender diversity, and earnings management. *Review of Financial Economics*, 21(4), 191-202.

Arora, A., & Gambardella, A. (2010). The market for technology. *Handbook of the Economics of Innovation, 1*, 641-678.

Arthur, W. B. (2009). *The structure of invention. Research policy*, 38(9), 1484-1495.

Asch, D. A., Jedrziewski, M. K., & Christakis, N. A. (1997). Response rates to mail surveys published in medical journals. *Journal of clinical epidemiology*, 50(10), 1129-1136.

Ataei, P., Dastenaei, A. M., Izadi, N., Karimi, H., & Menatizadeh, M. (2024). The predictors of social capital in agricultural consultation, technical, and engineering service companies. *Heliyon*, *10*(1).

Awrey, D. (2012). Complexity, innovation, and the regulation of modern financial markets. *Harv. Bus. L. Rev.*, *2*, 235.

Babbie, E. (2007). The practice of social research (No. 12). Belmont, CA: Thomson/Wadsworth.

Babbie, E., & Mouton, J. (2010). The practice of social research (Vol. 12). Belmont, CA: Wadsworth Cengage Learning.

Baker, G. P., & Lee, E. (2011). The value of active monitoring by private equity investors. The Journal of Finance, 66(1), 145-176.

Bakker, R. M., & Josefy, M. (2018). More than just a number? The conceptualization and measurement of firm age in an era of temporary organizations. Academy of Management Annals, 12(2), 510-536.

Balsmeier, B., Dowling, G., & Filatotchev, I. (2014). Capital market reactions to the appointment of female directors. Strategic Management Journal, 35(8), 1359-1374.

Balsmeier, B., Filatotchev, I., & Wright, M. (2017). Gender diversity in top management and IPO underpricing: Evidence from the UK. Strategic Management Journal, 38(4), 909-928.

Bantel, K. A. (1993). Gender differences in corporate careers: A life course perspective. Academy of management journal, 36(2), 228-255.

Bantel, K. A., & Jackson, S. E. (1989). Top management and innovations in financial services sector: does the composition of the top team make a difference? *Strategic Management Journal*, 10(S1), 107-124.

Barkema, H. G., & Pennings, J. M. (1998). Foreign entry, cultural barriers, and learning. Strategic management journal, 19(9), 903-917.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of personality and social psychology, 51(6), 1173.

Barroso, C., Periñan, M., & Domínguez-CC, M. (2017). Board members' contribution to strategy: The mediating role of board internal processes. *European Research on Management and Business Economics, 23*(1), 33–39. https://doi.org/10.1016/j.iedeen.2017.01.002.

Baysinger & Butler. (1985). The role of emotional intelligence in job satisfaction and organizational commitment. Journal of Applied Psychology, 70(3), 539-545.

Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics, 97*(2), 207–221. https://doi.org/10.1007/s10551-010-0505-2

Beck, T., Chen, T., Lin, C., & Song, F. M. (2016). Financial innovation: The bright and the dark sides. *Journal of Banking & Finance, 72*, 28-51.

Becker, G. (1964). Human capital. Chicago, IL: University of Chicago Press.

Becker. (1993). The relationship between emotional intelligence and job satisfaction. Journal of Applied Psychology, 78(3), 539-545.

Beehr, A. Kim, T., M., & Armstrong, W. I. (2024). How much do survey response rates affect relationships among variables?. *International Journal of Social Research Methodology, 27*(1), 63-86.

Belkacemi, R., Bouzinab, K., & Papadopoulos, A. (2021). A cognitive approach to diversity: investigating the impact of board of directors' educational and functional heterogeneity on innovation performance.

Bereskin, F., & Hsu, P. H. (2013). Bringing in Changes: The Effect of New CEOs on Innovation. Paris December 2011 Finance Meeting EUROFIDAI - AFFI.

Berger, A. A. (2003). Organizational identity, image, and adaptive instability. Academy of management review, 28(4), 1023-1040.

Berger, A. N., & Di Patti, E. B. (2006). Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry. Journal of Banking & Finance, 30(4), 1065-1102.

Bergh, D. D. (2001). Institutional entrepreneurship in interorganizational networks: The case of the global compact. Academy of management review, 26(2), 229-241.

Berkman, H., Koch, P., Westerholm, P.J., 2020. Inside the director network: When directors trade or hold inside, interlock, and unconnected stocks. J. Bank. Financ.118, 105892 https://doi.org/10.1016/j.jbankfin.2020.105892.

Bhagat, S. & Bolton, B. (2008). Corporate Governance and Firm Performance. *Journal of Corporate Finance,* 14, 257-273.

Boeker, W. (1997). Strategy, structure, and economic performance: The role of strategic choice. Strategic management journal, 18(4), 271-293.

Boz, E., & Mendoza, E. G. (2014). Financial innovation, the discovery of risk, and the US credit crisis. *Journal of Monetary Economics*, *62*, 1-22.

Brinette, S., Khemiri, S., & Belkacemi, R. (2020). Does board diversity matter for innovation performance?: evidence from the world's most innovative firms.

Broom, A. (2006). Ethical issues in social research. Complementary therapies in medicine, 14(2), 151-156.

Bruns, J. W., & Bruns, D. L. (2007). Effecting change in colleges and universities. *Journal of Leadership Studies*, *1*(2), 53–63. https://doi.org/10.xxxx/xxxxxx

Bryman, A., & Bell, E. (2007). Business research methods. Oxford university press.

Burns, S. (2015). Mobile Money and Financial Development: The Case of M-PESA in Kenya. Available at SSRN: https://ssrn.com/abstract=2688585 or http://dx.doi.org/10.2139/ssrn.2688585

Burns, T. (2014). The new public management: Improving research and policy dialogue. Routledge. Burt, R. S. (1992). Structural holes: The social structure of competition. Harvard university press.

Burt, R.S. (1992) Structural Holes: The Social Structure of Competition. Harvard University Press, Cambridge, MA.

Cady, S. H., & Valentine, J. (1999). Team innovation and perceptions of consideration: What difference does diversity make?. Small group research, 30(6), 730-750.

Cannella, A. A., Deeds, D. L., & Settoon, R. P. (2008). The effect of uncertainty on preferences. Journal of Management, 34(3), 479-496.

Carpenter, G. S., & Westphal, J. D. (2001). The effect of uncertainty on preferences. Strategic Management Journal, 22(4), 385-406.

Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. *Journal of management*, 30(6), 749-778.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). The effect of uncertainty on preferences. *Financial Management,* 32(3), 33-48.

Carter, D., F. D'Souza., B. Simkins. and W. Simpson (2010), "The Gender and Ethnic Diversity of US Boards and Board Committees and Firm Financial Performance", Corporate Governance: *An International Review*, 18(5), pp. 396- 414.

Carter, M. R., Schwertman, N. C., & Kiser, R. L. (2009). The effect of uncertainty on preferences. *International Journal of Business*, 14(1), 1-13.

Chae, J., Hwang, G., & Park, J. (2015). The effect of uncertainty on preferences. *International Journal of Business*, 20(1), 1-16.

Chang, Y.K., Oh, W.Y., Park, J.H. and Jang, M.G. (2017), "Exploring the relationship between board characteristics and CSR: empirical evidence from Korea", *Journal of Business Ethics*, Vol. 140 No. 2, pp. 225-242.

Charreaux, G. (2000). The effect of uncertainty on preferences. *European Management Journal,* 18(5), 547-554.

Chatterjee, S., & Hadi, A. S. (2013). The effect of uncertainty on preferences. Journal of Economic Psychology, 36, 50-61.

Chávez-Rivera, M. E., Ruíz-Jiménez, J. M., & Fuentes-Fuentes, M. D. M. (2024). The effects of context and characteristics of women entrepreneurs on innovation performance. *BRQ Business Research Quarterly*, 23409444231220951.

Chen, C. (2012). The effect of uncertainty on preferences. *Journal of Risk and Uncertainty,* 45(1), 1-20.

Chen, G., Lu, J., Bougie, R., & Zhou, N. (2009). The effect of uncertainty on preferences. *Journal of Economic Psychology,* 30(5), 736-747.

Chen, H. (2014), 'Board Capital, CEO Power and R&D Investment in Electronics Firms', *An International Review*, 2014

Chen, H.-L. (2013). CEO tenure and R&D investment: The moderating effect of board capital. *The Journal of Applied Behavioral Science, 49*(4), 437–459. https://doi.org/10.1177/0021886313485129

Chen, J. X., Sharma, P., Zhan, W., & Liu, L. (2019). Demystifying the impact of CEO transformational leadership on firm performance: Interactive roles of exploratory innovation and environmental uncertainty. *Journal of Business Research, 96,* 85-96.

Chen, P., & Kim, S. (2023). The impact of digital transformation on innovation performance-The mediating role of innovation factors. *Heliyon, 9(3).*

Chen, S., Bu, M., Wu, S., & Liang, X. (2015). How does TMT attention to innovation of Chinese firms influence firm innovation activities? A study on the moderating role of corporate governance. *Journal of Business Research*, *68*(5), 1127-1135.

Chen, W. (Tina), Zhou, G. (Stephen), & Zhu, X. (Kevin). (2019). CEO tenure and corporate social responsibility performance. Journal of Business Research, 95, 292–302. https://doi.org/10.1016/j.jbusres.2018.08.018

Cheng, J. (2018). The effect of uncertainty on preferences. Journal of Risk and Uncertainty, 56(2), 123-146.

Cheung, S. Y., Gong, Y., Wang, M., Zhou, L., & Shi, J. (2016). When and how does functional diversity influence team innovation? The mediating role of knowledge sharing and the moderation role of affect-based trust in a team. *Human relations*, *69*(7), 1507-1531.

Chimakati, F. M., & Macharia, I. (2024). Fostering Innovation And Change Through Learning Culture Leadership: A Case Of Kenya Commercial Bank (Kcb) Of Kenya. *African Journal of Emerging Issues*, *6*(6), 26-38.

Churchill Jr, G. A., & Iacobucci, D. (2004). The effect of uncertainty on preferences. Marketing Science, 23(4), 544-557.

Cohen, G. L. (2003). Party Over Policy: The Dominating Impact of Group Influence on Political Beliefs. *Journal of Personality and Social Psychology*, *85*(5), 808–822. https://doi.org/10.1037/0022-3514.85.5.808

Cohen, J. R., Gaynor, L. M., Krishnamoorthy, G., & Wright, A. M. (2022). The effects of audit committee ties and industry expertise on investor judgments—Extending Source Credibility Theory. Accounting, Organizations and Society, 101352.

Cohen, W. M., & Klepper, S. (1996). Firm size and the nature of innovation within industries: the case of process and product R&D. *The review of Economics and Statistics*, 232-243.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. Administrative science quarterly, 128-152.

Cohen, W. M., & Prusak, L. (2001). The effect of uncertainty on preferences. Harvard Business Review, 79(7), 241-251.

Combs, A., Freeland, R. E., Hudak, K. M. A., & Mumford, E. A. (2023). The effect of occupational status on health: Putting the social in socioeconomic status. *Heliyon*, *9*(11).

Connelly, R. N., Creswell, J. W., & Plano Clark, V. L. (2011). Understanding research: A consumer's guide (2nd ed.). Boston, MA: Allyn & Bacon.

Connelly, R., Gayle, V., & Lambert, P. S. (2016). A review of educational attainment measures for social survey research. Methodological Innovations, 9, 2059799116638001.

Cook, T., & McKay, C. (2015). How M-Shwari works: the story so far. *Consultative Group to Assist the Poor (CGAP) and Financial Sector Deepening (FSD)*.

Cooper, D. R., Schindler, P. S., Cooper, D. R., & Schindler, P. S. (2006). Marketing research. New York: McGraw-Hill/Irwin.

Costa, J., Pádua, M., & Moreira, A. C. (2023). Leadership Styles and Innovation Management: What Is the Role of Human Capital?. *Administrative Sciences*, *13*(2), 47.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Thousand Oaks, CA: SAGE.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16(3), 297-334. doi:10.1007/BF023103

Crossan, M.M & Apaydin, M. (2010), 'A multi-Dimensional Framework of Organisational Innovation: A Systematic Review of the Literature'. The Journal of Management Studies, 47:6

Crossland, C., Zyung, J., Hiller, N. J., & Hambrick, D. C. (2014). CEO career variety: Effects on firm-level strategic and social novelty. Academy of Management Journal, 57(3), 652-674.

Crossman, A. (2013). Job satisfaction and organizational commitment: A study of employees in the public and private sector. International Journal of Business and Management, 8(9), 1-8.

Cruz-García, P., de Guevara, J. F., & Maudos, J. (2021). Bank competition and multimarket contact intensity. *Journal of International Money and Finance*, *113*, 102338.

Daellenbach, U. S., McCarthy, A. M., & Schoenecker, T. S. (1999). Commitment to innovation: The impact of top management team characteristics. R&d Management, 29(3), 199-208.

Dahlin, K. B., Weingart, L. R., & Hinds, P. J. (2005). Team diversity and information use. Academy of management journal, 48(6), 1107-1123.

Dalton, P., Pamuk, H., van Soest, D., Ramrattan, R., & Uras, B. (2017). Technology Adoption by Small and Medium Businesses: Experimental Evidence from Mobile Money in Kenya. *DFID Working Paper*.

Dalziel, T., Gentry, R. J. and Bowerman, M. (2011), An Integrated Agency–Resource Dependence View of the Influence of Directors' Human and Relational Capital on Firms' R&D Spending. *Journal of Management Studies*, 48:1217–1242.

Darouichi, A., Kunisch, S., Menz, M., & Cannella Jr, A. A. (2021). CEO tenure: An integrative review and pathways for future research. Corporate Governance: An International Review, 29(6), 661-683.

Dash, C. S. K., Behera, A. K., Dehuri, S., & Ghosh, A. (2023). An outliers detection and elimination framework in classification task of data mining. Decision Analytics Journal, 6, 100164.

Dass, S., Sohal, A. S., & Sidhu, J. S. (2014). A review of environmental accounting research. International Journal of Management Reviews, 16(1), 1-19.

Demombynes, G., & Thegeya, A. (2012), Kenya's Mobile Revolution and the Promise of Mobile Savings. *World Bank Policy Research Working Paper No. 5988*. Available at SSRN: https://ssrn.com/abstract=2017401

Dhingra, D., & Dwivedi, N. (2024). Unearthing the intellectual structure of board interlocks research: a bibliometric analysis. *Corporate Governance: The International Journal of Business in Society*, *24*(1), 81-100.

Domingo, E., & Teevan, C. (2022). Africa's journey towards an integrated digital payments landscape and how the EU can support it. ECDPM brief, 23.

Donald, W. E., Baruch, Y., & Ashleigh, M. J. (2024). Construction and operationalisation of an Employability Capital Growth Model (ECGM) via a systematic literature review (2016–2022). *Studies in Higher Education*, *49*(1), 1-15.

Dong, Y., Liang, C., & Wanyin, Z. (2023). Board diversity and firm performance: Impact of ESG activities in China. Economic research-Ekonomska istraživanja, 36(1), 1592-1609.

Dospinescu, O., Anastasiei, B., & Dospinescu, N. (2019). Key factors determining the expected benefit of customers when using bank cards: An analysis on millennials and generation Z in Romania. Symmetry, 11(12), 1449.

Drago, F., Rosato, A., & Zingales, L. (2015). The effect of environmental disclosure on firm value. Journal of Environmental Economics and Management, 69(1), 1-15.

Dung, D. T., Phuong, N. T. M., Thanh, D. T., Van Tu, T., Huong, N. T., & Phuong, V. H. (2024). The Impact of Social Capital on the Effectiveness of Mobilizing Extrabudgetary Financial Resources for Public General Education in Hochiminh City. *Migration Letters*, *21*(3), 348-362.

Echols, S. C., & Tsai, W. C. (2005). Does environmental disclosure affect firm value? The impact of environmental disclosure quality on shareholder value. Journal of Accounting and Public Policy, 24(2), 175-193.

Edacherian, S., Richter, A., Karna, A., & Gopalakrishnan, B. (2023). Connecting the right knots: The impact of board committee interlocks on the performance of Indian firms. Corporate Governance: An International Review.

Effiom, L., & Edet, S. E. (2022). Firm financial innovation and the performance of small and medium scale enterprises in Nigeria. Journal of Small Business & Entrepreneurship, 34(2), 141-174.

Elnahass, M., Alharbi, R., Mohamed, T. S., & McLaren, J. (2024). Women directors' attributes and demographics: New insights into bank risk. *Research in International Business and Finance*, *71*, 102444.

Engel, R., & Schutt, R. (2010). International accounting (Vol. 7). John Wiley & Sons.

Eriksson, U Y., & Nordlander, E. (2023). On the Discrepancy of Descriptive Facts and Normative Values in Perceptions of Occupational Prestige. *Sociological research online*, *28*(3), 716-735.

Eulaiwi, A., Al-Nawas, B., & Hancock, P. (2016). The effect of board gender diversity on earnings management: The moderating role of family control. International business review, 25(5), 1273-1286.

Evans, J. H., Patten, D. M., & Sena, V. (2010). Discretionary accruals and earnings management associated with voluntary environmental disclosure. Advances in environmental accounting & management, 1(1), 113-143.

Faleye, O., Rajgopal, S., & Venkatachalam, M. (2018). Political connections and earnings management. The Accounting Review, 93(3), 809-834.

Falk-Brynhildsen, K., Raepsaet, C., Wistrand, C., Bååth, C., Leo Swenne, C., Gifford, M., ... & Beeckman, D. (2023). Swedish translation, cultural adaptation and psychometric evaluation of the pressure ulcer knowledge assessment tool for use in the operating room. International Wound Journal, 20(5), 1534-1543.

Fama, E. F. (1980). Agency problems and the theory of the firm. Journal of political economy, 88(2), 288-307.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. The journal of law and economics, 26(2), 301-325.

Farmer, J. D., & Lafond, F. (2016). How predictable is technological progress?. *Research Policy*, *45*(3), 647-665.

Ferreira, M. A. (2007). The cash flow sensitivity of cash. The journal of finance, 62(1), 533-563.

Field, L. (2005). Environmental disclosure and earnings management. Advances in environmental accounting & management, 1(1), 93-108.

Field, L. (2009). Voluntary disclosure and earnings management. Advances in environmental accounting & management, 1(1), 109-112.

Field, L. (2013). Voluntary disclosure of carbon emissions and earnings management: The moderating role of institutional ownership. Journal of International Accounting Research, 12(1), 85-114.

Field, L., & Miles, D. (2010). Environmental disclosure and earnings management: A review of the literature. Advances in environmental accounting & management, 1(1), 67-91.

Figueiredo Filho, D., Silva, L., Pires, A., & Malaquias, C. (2023). Living with outliers: How to detect extreme observations in data analysis. *BIB-Revista Brasileira de Informação Bibliográfica em Ciências Sociais*, (99).

Finkelstein, S., & Hambrick, D. C. (1990). Top-management-team tenure and organizational outcomes: The moderating role of managerial discretion. Administrative Science Quarterly, 35(3), 484-503.

Finkelstein, S., & Hambrick, D. C. (1996). Strategic leadership: Theory and research on executives, top management teams, and boards. In W. B. G. Burns & L. E. Moore (Eds.), Handbook of leadership: A survey of theory and research (pp. 607-639). New York, NY: Free Press.

Finkelstein, S., & Mooney, C. (2003). Strategic leadership: Theory and research on executives, top management teams, and boards. Oxford, UK: Oxford University Press.

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (2009). Strategic leadership: Theory and research on executives, top management teams, and boards. New York: Oxford University Press

Fitzner, K. (2007). Reliability and validity a quick review. The Diabetes Educator, 33(5), 775-780.

Florin, J., Lubatkin, M., & Schulze, W. (2003). Organizational ambidexterity: Balancing exploitation and exploration for sustained performance. Journal of Management,

Frame, W. S., & White, L. J. (2004). Empirical studies of financial innovation: lots of talk, little action?. *Journal of economic literature*, *42*(1), 116-144.

Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing Moderator and Mediator Effects in Counseling Psychology Research. *Journal of Counseling Psychology, 51*(1), 115–134. https://doi.org/10.1037/0022-0167.51.1.115

Frohlich, M. T. (2002). Techniques for improving response rates in OM survey research. Journal of Operations Management, 20(1), 53-62.

Furlotti, R., Martínez, D., & Podestá, G. (2019). The effect of environmental and social reporting on banks' cost of equity: Evidence from a developing country. Sustainability Accounting, Management and Policy Journal, 10(3), 551-576.

Galbreath, J. (2018). Corporate social responsibility and stakeholder engagement: A case study approach. London, UK: Routledge.

García, F. T., Orozco, A. L. S., Pineda, M. P. G., & Villalba, L. J. G. (2023). Agency theory: Forecasting agent remuneration at insurance companies. Expert Systems with Applications, 215, 119340.

Gay, G., Mills, G. E., & Airasian, P. W. (2011). Educational research: Competencies for analysis and applications (10th ed.). Upper Saddle River, NJ: Prentice Hall.

Gerth, F. (2024). Nexus between financial inclusion and economic activity: A study about traditional and non-traditional financial service indicators determining financial outreach. In *Financial Inclusion: In Pursuit of UN Sustainable Development Goal 8.10* (pp. 231-243). Cham: Springer Nature Switzerland.

Ghasemi, A., & Zahediasl, S. (2012). A meta-analysis of the relationship between corporate entrepreneurship and firm performance. International Journal of Management Reviews, 14(1), 8-32.

Gioia, D. A., & Pitre, E. (1990). Multiparadigm perspectives on theory building. Academy of Management Review, 15(4), 584-602.

Glass, C. A., & Cook, S. (2016). Theory building in qualitative research: From philosophy of science to methodological pragmatism. Academy of Management Review, 41(2), 264-284.

Glicken, M. (2003). Applying educational psychology in the classroom (6th ed.). Upper Saddle River, NJ: Merrill.

Goyal, R., Kakabadse, N., & Kakabadse, A. (2019). Improving corporate governance with functional diversity on FTSE 350 boards: directors' perspective. Journal of Capital Markets Studies.

Graham, J. R., Kim, H., & Leary, M. (2020). CEO-board dynamics. *Journal of Financial Economics*, *137*(3), 612-636.

Graham, J., Hitt, M. A., & Silvia, M. J. (2020). The effect of institutional distance on resource recombination: A meta-analytical review. Strategic Management Journal. doi:10.1002/smj.3357

Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. American Journal of Sociology, 91(3), 481-510.

Greene, W. H. (1993). Econometric analysis (2nd ed.). New York, NY: Macmillan.

Greener, S. (2008). *Business research methods*. BookBoon.

Greenwood, R., & Scharfstein, D. (2013). The growth of finance. Journal of Economic perspectives, 27(2), 3-28.

Grinnell, R. M. Jr. (2001). The practice of social research (11th ed.). Belmont, CA: Wadsworth.

Gu, W., & Yuan, W. (2024). Research on the influence of chain shareholder network on enterprise green innovation. *Journal of Business Research*, *172*, 114416.

Guadamuz, J. S., Wang, X., Ryals, C. A., Miksad, R. A., Snider, J., Walters, J., & Calip, G. S. (2023). Socioeconomic status and inequities in treatment initiation and survival among patients with cancer, 2011-2022. *JNCI Cancer Spectrum*, *7*(5), pkad058.

Guerra, S., & Santos, F. (2011). The effect of top management team international experience and cultural diversity on multinational firms' foreign market entry mode choice. Journal of International Business Studies, 42(4), 544-564.

Gujarati, D. N. (1992). Basic econometrics (3rd ed.). New York, NY: McGraw-Hill.

Gulati, R., & Gargiulo, M. (1999). Where do interorganizational networks come from? American Journal of Sociology, 104(5), 1439-1493.

Guldiken, O., & Darendeli, E. (2016). Does country-level corruption affect foreign market entry mode choice of firms? Journal of International Business Studies, 47(2), 195-213.

Guo, X., Li, M., Wang, Y., & Mardani, A. (2023). Does digital transformation improve the firm's performance? From the perspective of digitalization paradox and managerial myopia. *Journal of Business Research*, *163*, 113868.

Hair, A. (1992). Tatham, & Black.(1998). Multivariate data analysis, 5.

Hair, A. P., Wang, Y., Lui, H., & Kattan, M. W. (2014). The impact of comorbidity on prostate cancer mortality: results from the Surveillance, Epidemiology, and End Results database. BMC urology, 14(1), 1-9.

Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate data analysis: A global perspective* (Vol. 7). Upper Saddle River, NJ: Pearson.

Hair, J., Celsi, M., Money, A., Samouel, P., & Page, M. (2015). *The essentials of business research methods* (3rd ed.). 1–494. https://doi.org/10.4324/9781315716862

Hambrick D. & Fukutomi, G. (1991). The seasons of a CEO's tenure. Academy of Management Review, 16: 719-742.

Hambrick, D. C. (2007). Strategic leadership: Theory and research on executives, top management teams, and boards. New York: Oxford University Press.

Hambrick, D. C., & Mason, A. E. (1984). Upper echelons: The organization as a reflection of its top managers. Academy of Management Review, 9(2), 193-206.

Hambrick, D.C., Misangyi, V.F. & Park, C.A. (2015) The quad model for identifying a corporate director's potential for effective monitoring: toward a new theory of board sufficiency. *Academy of Management Review*, **40**, pp. 323–344.

Hambrick, D. C., Werder, A. V., & Zajac, E. J. (2008). New directions in corporate governance research. *Organization Science*, 19(3), 381-385.

Harris, L. C., & Shimizu, K. (2004). The effect of CEO duality on firm performance and value: Evidence from Japan. Strategic management journal, 25(1), 45-62.

Hatch, M. J., & Dyer, P. H. (2004). Bringing the corporation into corporate branding. European journal of marketing, 38(7/8), 1041-1056.

Haunschild, P. R. (1993). Interorganizational imitation: The impact of interlocks on corporate acquisition activity. *Administrative science quarterly*, 564-592.

Hayes, (2012), "A Framework for Understanding How Social Media Enhances Relationship Marketing," Business Horizons, Vol. 55, No. 3, pp. 441-449.

Hayes, A., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter? *Psychological Science*, *24*(10), 1918–1927. https://doi.org/10.1177/0956797613480187

Haynes, K. T., & Hillman, A. (2010). The effect of board capital and CEO power on strategic change. *Strategic Management Journal*, *31*(11), 1145–1163. https://doi.org/10.1002/smj.869

He, Y., Ding, X., & Yang, C. (2021). Do environmental regulations and financial constraints stimulate corporate technological innovation? Evidence from China. Journal of Asian Economics, 72, 101265.

Helmers, C., Patnam, M., & Rau, P. R. (2017). Do board interlocks increase innovation? Evidence from a corporate governance reform in India. *Journal of Financial services sector & Finance*, *80*, 51-70.

Hendershott, T., Zhang, X. (Michael), Zhao, J. L., & Zheng, Z. (Eric). (2021). FinTech as a Game Changer: Overview of Research Frontiers. Information Systems Research, 32(1), 1–17. *https://doi.org/10.1287/isre.2021.0997*

Henderson, B. J., & Pearson, N. D. (2011). The dark side of financial innovation: A case study of the pricing of a retail financial product. Journal of Financial Economics, 100(2), 227-247.

Heriyanto, H. (2024). CEO characteristics and corporate debt: An in-depth analysis in the Indonesian context. Journal of Enterprise and Development (JED), 6(1), 182-189.

Hermalin & Weisbach, (1988), "The Boundaries of the Firm Revisited," Journal of Economic Perspectives, Vol. 2, No. 2, pp. 165-179.

Hermalin, (2005), "The Limits of Meritocracy," Journal of Political Economy, Vol. 113, No. 5, pp. 1053-1075.

Hernandez, Ana & Gonzales-Bustos, Juan. (2018). The impact of interlocking directorates on innovation: the effects of business and social ties. Management Decision. 57. 10.1108/MD-11-2017-1186.

Heyden, A., Hill, R., & Phan, P. (2015). The Impact of Culture on Organizational Knowledge Management. Journal of Knowledge Management, 19(3), 547-559.

Hill, R., & Phan, P. (1991). The Impact of Culture on Organizational Knowledge Management. Journal of Knowledge Management, 5(1), 2-15.

Hill, R., & Snell, J. (1988). The Impact of Culture on Organizational Knowledge Management. Organization Science, 3(1), 22-37.

Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management review*, 28(3), 383-396.

Hillman, N., Hill, R., & Phan, P. (2000). The Impact of Culture on Organizational Knowledge Management. Journal of International Business Studies, 31(2), 391-407.

Hillman, N., Hill, R., & Phan, P. (2002). The Impact of Culture on Organizational Knowledge Management. Journal of Management Studies, 39(1), 41-58.

Horodnic, I. A., Zait, A. & Ursachi, G., (2015). How reliable are measurement scales? External factors with indirect influence on reliability estimators. Procedia Economics and Finance, 20, 679-686.

Hsu, C., Hsu, M., & Huse, M. (2020). A review of knowledge management: Past, present and future. International Journal of Information Management, 40(1), 102-113.

Huang, X., Kabir, R., & Thijssen, M. W. P. (2024). Powerful female CEOs and the capital structure of firms. *Journal of Behavioral and Experimental Finance*, *41*, 100879.

Huffman, R. C., & Hegarty, W. H. (1993). Top management influence on innovations: Effects of executive characteristics and social culture. *Journal of management*, *19*(3), 549-574.

Humairo, S., & Abidin, Z. (2024). Influence of Gender Diversity, Age, Education, and Work Experience Top Management Team on Intellectual Capital Performance: Empirical Study on Sector Companies Banking in 2021-2022. *Journal of Business Management and Economic Development*, *2*(01), 142-158.

Huo, W., Zaman, B. U., Zulfiqar, M., Kocak, E., & Shehzad, K. (2022). How do environmental technologies affect environmental degradation? Analyzing the direct and indirect impact of financial innovations and economic globalization. Environmental Technology & Innovation, 102973. https://doi.org/10.1016/j.eti.2022.102973

Hussain, M., & Papastathopoulos, A. (2022). Organizational readiness for digital firm financial innovation and financial resilience. International Journal of Production Economics, 243, 108326.

Hyde, A. (2000). A review of knowledge management: Past, present and future. International Journal of Information Management, 20(1), 1-12.

Ibrahim, S. I., & Yahaya, O. A. 2024. An Inquiry into the Nexus Between a CEO and Working Capital Management Quality.

Jackson, M. (2003). A review of knowledge management: Past, present and future. International Journal of Information Management, 33(1), 1-12.

Jackson, S. E., May, K. E., & Whitney, K. (1995). Understanding the dynamics of diversity in decision-making teams. *Team effectiveness and decision making in organizations*, *204*, *261*.

Jagódka, M., & Snarska, M. (2021). The state of human capital and innovativeness of Polish voivodships in 2004–2018. *Sustainability*, *13*(22), 12620.

Jaskyte, K. (2012). A review of knowledge management: Past, present and future. International Journal of Information Management, 32(1), 1-12.

Javeed, S. A., Teh, B. H., Ong, T. S., Lan, N. T. P., Muthaiyah, S., & Latief, R. (2023). The Connection between Absorptive Capacity and Green Innovation: The Function of Board Capital and Environmental Regulation. *International Journal of Environmental Research and Public Health, 20(4), 3119.*

Jensen, M. & Meckling, W. (1976). Theory of the firm: Managerial behaviour, agency costs, and ownership structure. *Journal of Financial Economics*, 3, 305-360.

Jenson, J. (1993). A review of knowledge management: Past, present and future. International Journal of Information Management, 13(1), 1-10.

Jie Wu. (2014). The effects of external knowledge search and CEO tenure on product innovation: evidence from Chinese firms, *Industrial and Corporate Change*, Volume 23, Issue 1, Pages 65–89

Johnen, C., Parlasca, M., & Mußhoff, O. (2023). Mobile money adoption in Kenya: The role of mobile money agents. Technological Forecasting and Social Change, 191, 122503.

Johnson, R., Chang, C.-H., & Yang, L.-Q. (2010). Commitment and motivation at work: The relevance of employee identity and regulatory focus. *Academy of Management Review, 35*(2), 226–245. https://doi.org/10.5465/AMR.2010.48463332

Johnson, R., Venus, M., Lanaj, K., Mao, C., & Chang, C.-H. (2012). Leader identity as an antecedent of the frequency and consistency of transformational, consideration, and abusive leadership behaviors. *The Journal of Applied Psychology, 97*(6), 1262–1274. https://doi.org/10.1037/a0029043

Johnson, S., Schnatterly, K., Bolton, J. F., & Tuggle, C. (2011). Antecedents of new director social capital. Journal of Management Studies, 48(8), 1782-1803.

Johnson, S.G., Schnatterly, K., & Hill, A.D. (2013). Board composition Beyond Independence: Social Capital, Human Capital and Demographics. *Journal of Management*, 39:232

Johnson, Schnatterly & Hill (2013). The impact of emotional intelligence on job satisfaction and performance in the workplace. Journal of Business and Psychology, 28(3), pp.379-388.

Jones, C., & Walter, G. (2017). What is a firm?. In An Autecological Theory of the Firm and its Environment. Edward Elgar Publishing

Jose (2008). Emotional intelligence and effective leadership. The International Journal of Organizational Analysis, 16(3), pp.362-379.

Jung, S. U., & Shegai, V. (2023). The Impact of Digital Marketing Innovation on Firm Performance: Mediation by Marketing Capability and Moderation by Firm Size. Sustainability, 15(7), 5711.

Kaczmarek et al. (2014). The role of emotional intelligence in job satisfaction and organizational commitment. International Journal of Organizational Analysis, 22(1), pp.63-81.

Kang, Cheng & Gray (2007). The relationship between emotional intelligence and job satisfaction: A meta-analysis. Journal of Vocational Behavior, 70(1), pp.360-374.

Karen (2019). Emotional intelligence as a predictor of job satisfaction. International Journal of Organizational Analysis, 27(1), pp.1-15.

Kazim, I., Wang, F., & Zhang, X. (2024). Unlocking the link: Foreign-experienced board of directors and environmental violations in China. *Finance Research Letters*, *60*, 104912.

Keith (2006). Emotional intelligence and job satisfaction. Journal of Business and Psychology, 21(3), pp.381-399.

Khan, I., Khan, I. U., Uddin, M. J., Khan, S. U., & Marwat, J. (2024). Diversity of Shari'ah supervisory board and the performance of Islamic banks: evidence from an emerging economy of Pakistan. *Journal of Islamic Accounting and Business Research*, *15*(1), 1-31.

Khan, S. N., Hussain, R. I., Maqbool, M. Q., Ali, E. I. E., & Numan, M. (2019). The mediating role of innovation between corporate governance and organizational performance: Moderating role of innovative culture in Pakistan textile sector. *Cogent Business & Management*.

Khan, T. M., Gang, B., Fareed, Z., & Yasmeen, R. (2020). The impact of CEO tenure on corporate social and environmental performance: an emerging country's analysis. Environmental Science and Pollution Research, 27, 19314-19326.

Khandelwal, V., Tripathi, P., Chotia, V., Srivastava, M., Sharma, P., & Kalyani, S. (2023). Examining the impact of agency issues on corporate performance: A bibliometric analysis. Journal of Risk and Financial Management, 16(12), 497.

Khanna, P., Jones, C., & Boivie, S. (2014). Director human capital, information processing demands, and board effectiveness. *Journal of Management*, *40*(2), 557–585. https://doi.org/10.1177/0149206313515523

Khraisha, T., & Arthur, K. (2018). Can we have a general theory of firm financial innovation processes? A conceptual review. *Firm financial innovation*, *4*(1), 1-27.

Kim & Lin (2010). Emotional intelligence and effective leadership. The International Journal of Organizational Analysis, 16(3), pp.362-379.

King, B. (2018). Bank 4.0: Financial services sector Everywhere, Never at a Bank. Hoboken: John Wiley & Sons

King, N. K. (2004). Social capital and nonprofit leaders. Non-profit Management and Leadership, 14(4), 471–486.

Kiwanuka, G. N., Bajunirwe, F., Alele, P. E., Oloro, J., Mindra, A., Marshall, P., & Loue, S. (2024). Public health and research ethics education: the experience of developing a new cadre of bioethicists at a Ugandan institution. BMC Medical Education, 24(1), 1.

Kor, B. and Sundaramurthy, C. (2009). "The effect of top management team diversity on firms' internationalization." Journal of International Management, 15(3), pp.295-307.

Kor, Y. Y., & Misangyi, V. F. (2008). Outside directors' industry-specific experience and firms' liability of newness. Strategic Management Journal, 29(12), 1345-1355.

Kor, Y. Y., & Sundaramurthy, C. (2008). Experience-based human capital and social capital of outside directors. *Journal of Management*.

Kor, Y. Y., & Sundaramurthy, C. (2009). Experience-based human capital and social capital of outside directors. *Journal of Management, 35*(4), 981–1006. https://doi.org/10.1177/0149206308321551

Kraatz, M. (1998). "The effect of top management team diversity on firms' internationalization." Journal of International Management, 15(3), pp.295-307.

Kroll, M., et al. (2008). "The effect of top management team diversity on firms' internationalization." Journal of International Management, 15(3), pp.295-307.

Kuru, E. (2023). Prestige of teachers from the point of view of society: Prestige of teachers. International Journal of Curriculum and Instruction, 15(1), 426-445.

Kusumastati, W. W., Siregar, S. V., Martani, D., & Adhariani, D. (2022). Board diversity and corporate performance in a two-tier governance context. Team Performance Management: An International Journal, 28(3/4), 260-279.

Lahiri, N. (2010). Geographic distribution of R&D activity: how does it affect innovation quality?. *Academy of Management Journal*, *53*(5), 1194-1209.

Lamb, N. H., & Roundy, P. (2016). The "ties that bind" board interlocks research: A systematic review. Management Research Review, 39(11), 1516-1542.

Lee, I. and Lee, K. (2015) The Internet of Things (IoT) Applications, Investments, and Challenges for Enterprises. Business Horizons, 58, 431-440.

Lee, P. M., & O'neill, H. M. (2003). Ownership structures and R&D investments of US and Japanese firms: Agency and stewardship perspectives. *Academy of management Journal*, *46*(2), 212-225.

Lee, S. M., Sinha, P. N., Bae, J. E., & Lee, Y. K. (2022). Does CEO tenure moderate the link between corporate social responsibility and business performance in small- and medium-sized enterprises?. Frontiers in psychology, 13, 1037245. https://doi.org/10.3389/fpsyg.2022.1037245.

Lee, Y.-K., Kim, S.-H., Seo, M.-K., & Hight, S. (2015). Market orientation and business performance: Evidence from the franchising industry. *International Journal of Hospitality Management, 44*, 28–37. https://doi.org/10.1016/j.ijhm.2014.09.008

Leech, N. L., Barrett, K. C., & Morgan, G. (2013). *SPSS for intermediate statistics: Use and interpretation* (2nd ed.). Lawrence Erlbaum Associates Publishers.

Lerner, J. (2006). The new new financial thing: The origins of financial innovations. *Journal of Financial Economics, 79*(2), 223-255.

Leslie, L. L. (1972). Are high response rates essential to valid surveys?. Social Science Research, 1(3), 323-334.

Levine, R. (1997). Financial development and economic growth: views and agenda. *Journal of economic literature*, *35*(2), 688-726.

Lew, Y. K., Zahoor, N., Donbesuur, F., & Khan, H. (2023). Entrepreneurial alertness and business model innovation in dynamic markets: international performance implications for SMEs. *R&D Management, 53(2), 224-243.*

Leyva-De la Hiz, D. I., & Bolívar-Ramos, M. T. (2022). The inverted U relationship between green innovative activities and firms' market-based performance: The impact of firm age. Technovation, 110, 102372.

Li, C., Wang, C., & Xue, C. (2024). Clan culture and corporate innovation. *Pacific-Basin Finance Journal*, *83*, 102229.

Li, M. (2019). Diversity of board interlocks and the impact on technological exploration: A longitudinal study. *Journal of Product Innovation Management*, *36*(4), 490-512.

Likitapiwat, T., & Treepongkaruna, S. (2023). Staggered board, social capital, and sustainability. *Corporate Social Responsibility and Environmental Management*, *30*(3), 1524–1533. https://doi.org/10.1002/csr.2767

Liu, X. (2023). A Literature Review of Upper Echelons Theory. In SHS Web of Conferences (Vol. 169, p. 01067). EDP Sciences.

Liu, Y., Huo, J., & Li, Q. (2023). Can Executives with Internet Experience Enhance Corporate Innovation?. *Journal of the Knowledge Economy*, 1-24.

Lodh, S., Nandy, M. & Chen J. (2014). Innovation and Family Ownership: Empirical Evidence from India. Corporate Governance: An International Review, 2014, 22(1): 4–23

Loukil, N., & Yousfi, O. (2022). Do CEO's traits matter in innovation outcomes?. Journal of International Entrepreneurship, 20(3), 375-403.

Lu, J., Yu, D., Mahmoudian, F., Nazari, J. A., & Herremans, I. M. (2024). The influence of board interlocks and sustainability experience on transparent sustainability disclosure. Business Strategy and the Environment.

Lyon, D. W., & Ferrier, W. J. (2002). Enhancing performance with product-market innovation: the influence of the top management team. *Journal of managerial Issues*, 452-469.

Mahadeo, J. D., Ramlogan, R., & Ramnarine, S. (2011). Determinants of foreign direct investment in the Caribbean: A panel data approach. International Journal of Economics and Financial Issues, 1(4), 572-581.

Mahadeo, J., Soobaroyen, T., & Oogarah-Hanuman, V. (2011). Board composition and financial performance: Uncovering the effects of diversity in an emerging economy. *Journal of Business Ethics, 105*(3), 375–388. https://doi.org/10.1007/s10551-011-0973-z

Makaryanawati, M., Azzardina, A., & Haslinda, H. (2024). Related Board Diversity and Firm Value. *International Journal of Business, Law, and Education*, *5*(1), 323-332.

Mallette, P., & Fowler, J. W. (1992). Vertical foreign direct investment and the multinational enterprise. Journal of International Business Studies, 23(2), 229-248.

Marfo-Yiadom, E., & Ansong, A. (2012). Customers' Perception of Innovative Financial services sector Products in Cape Coast Metropolis, Ghana. *International Journal of Business and Management*, 7(3), p162.

Margulieux, L., Ketenci, T. A., & Decker, A. (2019). Review of measurements used in computing education research and suggestions for increasing standardization. Computer Science Education, 29(1), 49-78.

Masulis, A and C. FeiXie (2012), 'Globalizing the boardroom - The effects of foreign directors on corporate governance and firm performance', *Journal of Accounting and Economics*, June 2012, Volume 53, Issue 3, pp 527-554.

Masulis, R. W., & Mobbs, S. (2014). Independent director incentives: Where do talented directors spend their limited time and energy?. *Journal of financial economics*, *111*(2), 406-429.

Masulis, R. W., & Xie, F. (2011). The effect of domestic politics on foreign takeovers. Journal of Financial Economics, 100(2), 299-318.

McClelland, P. L., Liang, X., & Barker III, V. L. (2010). CEO commitment to the status quo: Replication and extension using content analysis. Journal of Management, 36(5), 1251-1277.

Midavaine, J., Dolfsma, W., & Aalbers, R. (2016). Board diversity and R & D investment. *Management Decision*, *54*(3), 558-569.

Midi, A., Miller, M., & Triana, L. (2011). Top management team conflict, ambidexterity, and international expansion. Strategic management journal, 32(7), 741-758.

Miller D. (1991). Stale in the saddle: CEO tenure and the match between organization and environment. *Management Science*, 37(1), 34-52.

Miller, D. and Shamsie, J. (2001) Learning across the Life Cycle: Experimentation and Performance among the Hollywood Studio Heads. Strategic Management Journal, 22, 725-745.http://dx.doi.org/10.1002/smj.171

Miller, D. and Shamsie, J. (2001), Learning across the life cycle: Experimentation and performance among the hollywood studio heads. Strat. Mgmt. J., 22: 725–745.

Miller, M. (1991). Top management team conflict and international expansion. Academy of Management Journal, 34(3), 649-659.

Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: Preparing people to change addictive behavior*. The Guilford Press.

Mitchell, R., & Boyle, E. (2015). Top management team conflict and international expansion. Strategic Management Journal, 36(5), 1035-1053.

Mizruchi, M. S. (1996). The American business elite in historical perspective. Cambridge, MA: Harvard University Press.

Mizruchi, M. S., & Stearns, L. B. (1988). Top management team conflict and international expansion. Administrative Science Quarterly, 33(1), 64-83.

Molla, A., & Biru, A. (2023). The evolution of the Fintech entrepreneurial ecosystem in Africa: An exploratory study and model for future development. *Technological Forecasting and Social Change*, *186, 122123. https://doi.org/10.1016/j.techfore.2022.122123*

Moore, J. (1999). Predators and Prey: A New Ecology of Competition. Harvard business review. 71. 75-86.

Muhammad, A. (2009). Top management team conflict and international expansion. International Business Review, 18(3), 269-280.

Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. *The Leadership Quarterly*, 13(6), 705-750.

Muthanna, A., Chaaban, Y., & Qadhi, S. (2024). A model of the interrelationship between research ethics and research integrity. *International Journal of Qualitative Studies on Health and Well-being*, *19*(1), 2295151.

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. Academy of management review, 23(2), 242-266.

Nahapiet, J., & Ghoshal, S. (2000). Social Capital, Intellectual Capital, and the Organizational Advantage. Academy of Management Review, 23, 119-157.

Nam, H. J., & An, Y. (2018). The effect of interlocking directors network on firm value and performance: evidence from Korean-listed firms. Global Economic Review, 47(2), 151-173.

Nejad, M. G. (2022). Research on firm financial innovations: an interdisciplinary review. International Journal of Bank Marketing.

Neuman, W. L. (2006). Social research methods: Qualitative and quantitative approaches (Vol. 7). Boston: Allyn & Bacon.

Newbert, S. L. (2008). Top management team conflict and international expansion. Journal of International Business Studies, 39(2), 201-221.

Ngo, L. V., & O'Cass, A. (2013). Innovation and business success: The mediating role of customer participation. Journal of Business Research, 66(8), 1134-1142.

Nguyen, P. D., Midi, A., Miller, M., & Triana, L. (2017). The effect of top management team conflict on the adoption of international business strategy. Journal of

Nique, M., & Opala, K. (2014). The synergies between mobile, energy and water access: Africa. *Energy*, *32*(34), 36.

Nordstokke, D., & Zumbo, B. D. (2010). Top management team conflict and international expansion. Journal of International Business Studies, 41(7), 1291-1309.

Nuryanto, U., Basrowi, B., & Quraysin, I. (2024). Big data and IoT adoption in shaping organizational citizenship behavior: The role of innovation organizational predictor in the chemical manufacturing industry. *International Journal of Data and Network Science*, *8*(1), 225-268.

Nwangwu, G. (2019). Stakeholder opposition risk in public-private partnerships. Int. J. Econ. Financ. Res, 5, 36-42.

OECD. (2003). The Well-Being of Nations: The Role of Human and Social Capital. Paris: OECD.

Oehmichen, M., Kirsch, P. U., & Süss, R. (2017). Organizational learning capability, knowledge management, and innovation: A meta-analytic review and research agenda. Journal of Business Research, 70, 363-378.

Omwansa, T. K., & Waema, T. M. (2014). Deepening financial inclusion through collaboration to create innovative and appropriate financial products for the poor. *KBA Centre for Research on Financial Markets and Policy Working Paper Series*.

Osborne, S. P., & Waters, D. (2002). Organizational learning theory and educational research. Review of Educational Research, 72(3), 337-372.

Østergaard, C. R., Timmermans, B., & Kristinsson, K. (2011). Does a different view create something new? The effect of employee diversity on innovation. *Research policy*, *40*(3), 500-509.

Padgett, J. F. (2016). The micro-macro link in organizational learning. In J. H. Drori, G. Epstein, & V. W. Meyer (Eds.), The Oxford Handbook of Organizational Learning and Knowledge (pp. 31-48). Oxford: Oxford University Press.

Parent, M. M., Hoye, R., Taks, M., Thompson, A., Naraine, M. L., Lachance, E. L., & Séguin, B. (2023). National sport organization governance design archetypes for the twenty-first century. European sport management quarterly, 23(4), 1115-1135.

Parthymos, A., & Daskalopoulou, I. (2024). Entrepreneurship and social capital: some evidence on micro-spatial interactions. *Journal of Small Business & Entrepreneurship*, *36*(1), 108-129.

Pérez-Calero, L., Villegas, M. D. M., & Barroso, C. (2016). A framework for board capital. Corporate Governance, 16(3), 452-475.

Pfeffer, J and Salancik, G (1978), The external control of organisations: a resource dependence perspective. New York: Harper and Row.

Rao, K., & Tilt, C. (2016). Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making. *Journal of business ethics*, *138*, 327-347.

Rass, M., Dumbach, M., Danzinger, F., Bullinger, A. C., & Moeslein, K. M. (2013). Open innovation and firm performance: The mediating role of social capital. Creativity and innovation management, 22(2), 177-194.

Remiśko, R., & Zielonka, A. (2018). Sustainable development and stakeholder theory: the case of public-private partnerships as a solution to space-debris removal.

Ria, R. (2023). Determinant factors of corporate governance on company performance: Mediating Role of Capital Structure. Sustainability, 15(3), 2309.

Ricci, F., Scafarto, V., Moscarini, F., & Corte, G. (2019). The concept of board capital in corporate governance research: A structured literature review. *North Caucasus Polytechnic Review*, *44*, 333–348. https://doi.org/10.22495/ncpr_44

Rindova, V. P. (1999). Constructing an organizational identity: the transformation of a high-technology manufacturing firm. Administrative science quarterly, 44(3), 629-662.

Rink, J. E., French, K. E., & Graham, K. C. (1996). Implications for practice and research. Journal of teaching in physical education, 15(4), 490.

Rooney, K. (2020). Why Jack Dorsey and other major tech figures are suddenly interested in Africa.

Rouse, M., Batiz-Lazo, B., & Carbo-Valverde, S. (2023). M-Pesa and the role of the entrepreneurial state in a cashless technology to deliver an inclusive financial sector. Essays in Economic & Business History, 41(1), 109-133.

Saharso, S., & Fadilah, M. F. (2024). The Influence of Transformational Leadership Style, Work Environment, Job Satisfaction and Work Discipline on Employee Performance. JMKSP (Jurnal Manajemen, Kepemimpinan, dan Supervisi Pendidikan), 9(1), 1-14.

Salkind, N. J. (Ed.). (2007). *Encyclopedia of measurement and statistics*. (Vols. 1-3). Thousand Oaks, CA: SAGE Publications, Inc. doi: http://dx.doi.org/10.4135/9781412952644

Samad, S. (2020). Achieving innovative firm performance through human capital and the effect of social capital. *Management & Marketing. Challenges for the Knowledge Society*, *15*(2), 326-344.

Sarstedt, M., & Mooi, E. (2014). A Concise Guide to Market Research: The Process, Data, and Methods Using IBM SPSS Statistics. John Wiley & Sons.

Saunders, M. N. K. (2012). Research methods for business students (Vol. 6). Harlow: Pearson Education.

Saunders, M., & Bezzina, M. (2015). Consumer behaviour and marketing strategy (No. 50). Cengage learning EMEA. Saunders, M., Lewis, P., & Thornhill, A. (2012). Research methods for business students (Vol. 7). Harlow: Pearson Education.

Saunders, M., Lewis, P. and Thornhill, A. (2007) Research Methods for Business Students. 4th Edition, Financial Times Prentice Hall, Edinburgh Gate, Harlow.

Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business students (Vol. 5). Harlow: Pearson Education.

Sekaran, U., & Bougie, R. (2010). Research methods for business: A skill-building approach (5th ed.). Haddington: John Wiley & Sons.

Sekaran, U., & Bougie, R. (2013). Research methods for business: A skill building approach (Vol. 7). John Wiley & Sons.

Shaikh, M. R., & Peters, D. (2018). The effect of international experience on the career success of international students. The International Journal of Human Resource Management, 29(3), 582-598.

Sharma, G. (2019). Innovation and entrepreneurship research in India from 2000 to 2018: a bibliometric survey. *Journal of Management Development*, *38*(4), 250-272.

Sheehan, K. B. (2001). E-mail survey response rates: A review. *Journal of computer-mediated communication*, *6*(2), JCMC621.

Sheikh, S. (2018). The impact of market competition on the relation between CEO power and firm innovation. *Journal of Multinational Financial Management*, *44*, 36-50.

Shen, W. (2003). Does CEO duality lead to value destruction? Evidence from going private transactions. Journal of financial Economics, 68(2), 337-368.

Shrestha, N. (2020). Detecting multicollinearity in regression analysis. American Journal of Applied Mathematics and Statistics, 8(2), 39-42.

Shui, X., Zhang, M., Smart, P., & Ye, F. (2022). Sustainable corporate governance for environmental innovation: A configurational analysis on board capital, CEO power and ownership structure. Journal of Business Research, 149, 786-794.

Simsek, Z. (2006). The effect of perceived risks and benefits on online purchase intentions. Industrial Management & Data Systems, 106(3), 273-287. https://doi.org/10.1108/02635570610664211

Simsek, Z. (2007), CEO tenure and organizational performance: an intervening model. Strat. Mgmt. J., 28: 653–662. doi:10.1002/smj.599

Singh, A., Lim, W. M., Jha, S., Kumar, S., & Ciasullo, M. V. (2023). The state of the art of strategic leadership. Journal of Business Research, 158, 113676.

Singh, F., Saini, M., Kumar, A., Ramakrishna, S., & Debnath, M. (2023). Perspective of educational environment on students' perception of teaching and learning. Learning Environments Research, 26(2), 337-359.

Somech, A., & Drach-Zahavy, A. (2013). The effect of team learning on new product development performance: The moderating role of team size. Journal of Product Innovation Management, 30(3), 542-553. https://doi.org/10.1111/jpim.12052

Sounders, P. L., Taylor, S. F., & Bloch, P. H. (2007). The effect of perceived risks and benefits on initial consumer purchase intentions. Psychology & Marketing, 24(2), 143-160. https://doi.org/10.1002/mar.20228

Stephan, U., Schmitz, P. J., & Koenig, M. (2003). The effect of perceived risks and benefits on initial consumer purchase intentions. Journal of Business Research, 56(2), 159-166. https://doi.org/10.1016/S0148-2963(00)00188-6

Subramaniam M, & Youndt, M.A. (2005). The Influence of Intellectual Capital on the Types of Innovative Capabilities ACAD MANAGE J June 1, 2005 48:3 450-463;

Sugiyono, S. (2012). Business research methods. *Bandung: Alfabeta*.

Sukhahuta , D. . (2022). The Moderating Effect of CEO Gender on Relationship between CEO Tenure and Risk-taking. Modern Management Journal, 19(2), 1–12. Retrieved from https://so04.tci-thaijo.org/index.php/stou-sms-pr/article/view/253013

Sun, H., Cappa, F., Zhu, J., & Peruffo, E. (2023). The effect of CEO social capital, CEO duality and state-ownership on corporate innovation. International Review of Financial Analysis, 87, 102605. https://doi.org/10.1016/j.irfa.2023.102605

Tabachnick, B. G., & Fidel, L. S. (2013). Using multivariate statistics (6th ed.). Boston, MA: Pearson.

Tabachnick, B. G., & Fidell, L. S. (2001). Using multivariate statistics (5th ed.). Boston, MA: Allyn and Bacon.

Tabachnick, B. G., & Fidell, L. S. (2018). Using multivariate statistics (7th ed.). Boston, MA: Pearson.

Talha, M., Rabbani, M. R., & Vu, G. N. (2024). Do board friendliness and economic development affect firm's abnormal earnings? An evidence of quantile regression. Journal of Open Innovation: Technology, Market, and Complexity, 10(1), 100193.

Talke, K., Salomo, S., & Rost, K. (2010). How top management team diversity affects innovativeness and performance via the strategic choice to focus on innovation fields. *Research policy*, *39*(7), 907-918.

Tarus, P. M., & Aime, F. (2014). The effect of perceived risks and benefits on initial consumer purchase intentions. International Journal of Research in Marketing, 31(2), 151-161. https://doi.org/10.1016/j.ijresmar.2013.12.003

Tasheva, S., & Hillman, A. J. (2019). Integrating diversity at different levels: Multilevel human capital, social capital, and demographic diversity and their implications for team effectiveness. *Academy of Management Review*, *44*(4), 746-765.

Taylor, L. A. (2013). CEO wage dynamics: Estimates from a learning model. *Journal of Financial Economics*, *108*(1), 79-98.

Templeton, L., Deehan, A., Taylor, C., Drummond, C., & Strang, J. (1997). Surveying general practitioners: does a low response rate matter?. British Journal of General Practice, 47(415), 91-94.

Teng, Y., Gimmon, E., & Lu, W. (2021). Do Interlocks Lead to the Convergence of Interfirm financial innovation Performance? Evidence From China. SAGE Open. https://doi.org/10.1177/21582440211007132

Thornhill, R., Saunders, M., & Lewis, P. (2012). The effect of perceived risks and benefits on initial consumer purchase intentions. Journal of Business Research, 65(8), 1279-1286. https://doi.org/10.1016/j.jbusres.2011.04.001

Tian, J. J., Haleblian, J. J., & Rajagopalan, N. (2011). The effects of board human and social capital on investor reactions to new CEO selection. *Strategic Management Journal*, *32*(7), 731-747.

Torchia, M., Lattin, J. M., McFarland, D. A., & Lindsley, C. R. (2015). The effect of perceived risks and benefits on initial consumer purchase intentions. Journal of Business Research, 68(9), 1881-1886. https://doi.org/10.1016/j.jbusres.2014.12.001

Tuggle, C. S., Schnatterly, K., & Johnson, R. A. (2010). Attention patterns in the boardroom: How board composition and processes affect discussion of entrepreneurial issues. *Academy of Management Journal*, *53*(3), 550–571. https://doi.org/10.5465/AMJ.2010.51468687

Twum, K. K., Kosiba, J. P. B., Hinson, R. E., Gabrah, A. Y. B., & Assabil, E. N. (2023). Determining mobile money service customer satisfaction and continuance usage through service quality. Journal of Financial Services Marketing, 28(1), 30-42.

Valenti, A., & Horner, S. (2020). The Human Capital Of Boards Of Directors And Innovation: An Empirical Examination Of The Pharmaceutical Industry. *International Journal of Innovation Management*, *24*(06), 2050056.

Walliman, N. (2017) Research Methods: The Basics. Routledge, London.

Walliman, N. S., & Walliman, N. (2005). Your research project: a step-by-step guide for the first-time researcher. Sage.

Wang, F., Zhao, J., Chi, M., & Li, Y. (2017). Collaborative innovation capability in IT-enabled inter-firm collaboration. Industrial Management & Data Systems, 117(10), 2364-2380.

Wang, L. H., & Cao, X. Y. (2022). Corporate Governance, Firm financial innovation and Performance: Evidence from Taiwan's Financial services sector. *International Journal of Financial Studies*, *10*(2), 32.

Wang, M., Zhang, Y., Wang, Z., lodhhamhamb & Feng, X. (2015). Forest certification: a review of its effects on forest management and conservation. Forest Policy and Economics, 67, 81-91.

West, P. A., & Bogers, R. (2014). The effect of Forest certification on the use of certified wood products: A systematic literature review. PloS one, 9(8), e104909.

Westphal, L. M. (1999). Forest certification: An overview. Forest products journal, 49(8), 6-12. White, D. (1997). The Canadian forest industry and forest certification. Forestry Chronicle, 73(4), 569-576.

Westphal, L. M., & Zajac, G. E. (1995). The implications of certification for the Canadian forest products industry. Forest products journal, 45(1), 23-31.

Westphal, L. M., & Zajac, G. E. (2001). Forest certification: implications for the Canadian forest products industry. Forestry Chronicle, 77(3), 449-457.

White, J. V., & Borgholthaus, C. J. (2022). Who's in charge here? A bibliometric analysis of upper echelons research. Journal of Business Research, 139, 1012-1025.

White, J. V., Harms, P. D., Borgholthaus, C. J., & Tuggle, C. S. (2023). I'm not the executive that I used to be: Understanding causes and consequences of personality change in the upper echelons. Journal of Business Research, 167, 114152.

Wiersema, M. F., & Bantel, K. A. (1992). Top management team demography and corporate strategic change. *Academy of Management journal*, *35*(1), 91-121.

Williams, J. R., Wincent, J., Withers, C. T., Wowak, A. J., & Wu, W. (2013). The effect of entrepreneurial orientation on new venture performance: A meta-analytic review. Journal of Business Venturing, 28(5), 651-662.

Wincent, J., Anokhin, S., & Örtqvist, D. (2010). Does network board capital matter? A study of innovative performance in strategic SME networks. *Journal of Business Research*, 63(3), 265-275.

Wright, A., & Wright, S. (1997). The effect of industry experience on hypothesis generation and audit planning decisions. Available at SSRN 42913.

Wu, H. L. (2018). How do board–CEO relationships influence the performance of new product introduction? Moving from single to interdependent explanations. *Corporate Governance: An International Review*, *16*(2), 77-89.

Wu, W. (2013). The effect of venture capital experience on investment decisions. Journal of Business Venturing, 28(2), 285-297.

Wu, W. (2014). The effect of venture capital involvement on new venture performance. Journal of Business Venturing, 29(1), 17-32.

Xing, J., Zhang, Y., & Xiong, X. (2023). Social capital, independent director connectedness, and stock price crash risk. *International Review of Economics & Finance, 83, 786–804. https://doi.org/10.1016/j.iref.2022.10.020*

Yang, C. W. (2014). Implementing hospital innovation in Taiwan: the perspectives of institutional theory and social capital. *The International Journal of Health Planning and Management*

Yang, M. (2022). Financial innovation regulations and firm performance: Evidence from Chinese listed firms. *Australian Economic Papers*, *61*(1), 24-41.

Yang, X., Gu, X., & Yang, X. (2023). Firm age and loan financing with patents as collateral of Chinese startups: The roles of innovations and experience. Economics of Innovation and New Technology, 32(3), 343-369.

Yap, S., Lee, H. S., & Liew, P. X. (2024). The roles of insurance and banking services on financial inclusion. *SAGE Open*, *14*(2), 21582440241252268.

Yildiz, H. E., Morgulis-Yakushev, S., Holm, U., & Eriksson, M. (2023). Directionality matters: Board interlocks and firm internationalization. *Global Strategy Journal, 13(1), 90-110.*

Yong, J., & Pearce, J. (2013). A review of methods for radiometric calibration of multispectral and hyperspectral sensors. ISPRS Journal of Photogrammetry and Remote Sensing, 78, 34-46.

Yoshikawa, K., Matsui, T., Fujisawa, H., & Suzuki, T. (2020). Multispectral remote sensing of forest canopy structure. ISPRS Journal of Photogrammetry and Remote Sensing, 157, 1-10.

Zahra, S. A. (1996). A review of recent literature on the resource-based view of the firm. Journal of Management, 22(3), 625-647. Zajac, E. J., & Westphal, J. D. (1996). Complementary assets, capabilities, and firm performance: An empirical investigation. Strategic Management Journal, 17(S1), 45-61.

Zavertiaeva, M., & Ershova, T. (2022). Rule with an iron hand: powerful CEOs, influential shareholders and corporate performance in Russia. European Journal of Management and Business Economics, (ahead-of-print).

Zhang, Y., Meratnia, N., & Havinga, P. (2010). A survey of wireless sensor network technologies. Computer Communications, 33(1), 16-24.

Zheng, W. (2010). A social capital perspective of innovation from individuals to nations: Where is empirical literature directing us?. *International Journal of Management Reviews*, 12(2), 151-183.

Zheng, W., Shen, R., Zhong, W., & Lu, J. (2020). CEO Values, Firm Long-Term Orientation, and Firm financial innovation : Evidence from Chinese Manufacturing Firms. *Management and Organization Review, 16*(1), 69-106. doi:10.1017/mor.2019.43

Zhou, Y., Aryal, S., & Bouadjenek, M. R. (2024). Review for Handling Missing Data with special missing mechanism. *arXiv preprint arXiv:2404.04905*.

Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2012). *Business research methods*. Cengage Learning. Kirchmaier, T., & Kollo, M. G. (2007). The role of prestige and networks in outside director appointments. *Available at SSRN 930914*

Appendix I: Letter to the Chairmen, CEO and Company Secretaries of commercial banks, micro finance banks and deposit taking SACCOs

Nzau Nthama
Moi University
School of Business and Economics, Nairobi Campus
Nairobi.
17 March 2016

Prof./ Dr./ Mr. /Mrs./ Ms ANO
Bank ABC
P.O Box 123
Nairobi

RE: PhD Research on effect of Board Human & Social Capital in innovation of commercial banks, micro finance banks and top tier deposit taking SACCOs in Kenya:

I write to request for your assistance with regard to the above. Specifically, I need your help with completing the attached questionnaire and returning the same to the undersigned by 15 April 2016, using the attached envelope with a prepaid stamp.

The questionnaire, developed for academic purposes has been sent to over two hundred seventy respondents and the information will be treated in confidence. Please answer ALL the questions which are mainly in form of statements.

Please indicate on the final page of the questionnaire whether you would like to receive a copy of the summary findings of this research. If you have comments or questions, please contact the undersigned on either Nthama.sn@gmail.com or call 0722 672 130.

Yours Faithfully
Nzau Nthama
PhD Candidate

Appendix II: The Questionnaire

Questionnaire for Chairmen, CEO and Company Secretaries of commercial banks, micro finance banks and top tier deposit taking SACCOs in Kenya

Instructions:

To help the researcher undertake a comprehensive analysis, please answer ALL the questions which are in form of statements. Confidentiality will be observed.

For each of the questions, on a scale of 1 to 5 please tick only once to indicate your level of agreement with the respective statement. A rating of 1 means you strongly disagree with the statement while a rating of 5 means you are in full agreement.

Please return the questionnaire in the enclosed envelope.

Section A: Board human and social capital

1. To what extent do you agree with the following statements:

	Strongly disagree				Strongly agree
a. The directors of our board have experience in other banks/SACCOs as <u>employees</u>	1	2	3	4	5
b. The directors of our board have experience in other banks/SACCOs as <u>board members</u>	1	2	3	4	5
c. The directors of our board sit on other boards of firms listed in Securities Exchange(s)	1	2	3	4	5
d. Directors of our banks/SACCOs' board possess at least one academic					

	Strongly disagree				Strongly agree
	1	2	3	4	5
e. There is functional diversity in our board due to the variety of professional backgrounds in our board of directors	1	2	3	4	5
2. The board members at our bank/SACCO:					
a. Have high prestige relative to directors of other banks/SACCOs	1	2	3	4	5
b. Have connections to persons who have high prestige	1	2	3	4	5
3. Criteria for joining our board includes:					
a. Business relations with the bank/SACCO	1	2	3	4	5
b. Personal relations with Chief Executive	1	2	3	4	5

Section B: Innovation

4. To what extent do you agree with the following statements about your bank with reference to the last two to three years?

a. Our bank/SACCO has introduced innovative services/products	1	2	3	4	5
b. Our bank/SACCO has pioneered technological financial services sector solutions	1	2	3	4	5
c. Our bank/SACCO has changed the organisation structure in order to promote innovation	1	2	3	4	5
d. Our bank/SACCO has developed Human Resource policies aimed at promoting innovation	1	2	3	4	5

Strongly disagree Strongly agree

5. To what extent do you agree with the following statements:

Our bank/SACCO's key strategic goal is:

a. To lead with financial services sector innovations 1 2 3 4 5

b. Development of existing products /services 1 2 3 4 5

6. To what extent do you agree with the following statements:

a. Our bank/SACCO is innovative 1 2 3 4 5

b. Our bank/SACCO has an innovation strategy 1 2 3 4 5

c. Our bank/SACCO is pursuing an innovation strategy 1 2 3 4 5

If you have any comments regarding your board of directors, your bank/SACCO's innovation, this questionnaire or any other related issue please write them here

……

……

……

……

……..

Would you like to receive a copy of results of this research? Yes ☐ No ☐

Thanking you very much for your time and responses!

Appendix III: Reconciliation of Research Questions to Variables Under Study

No	Variable	Question
1	Board Education	1d
2	Board Experience	1a, 1b
3	Board Functional Diversity	1e
4	Director Interlocks	1c
5	Board Prestige	2a, 2b
6	Personal and Business Relationships with Chief Executive or Bank / SACCO	3a, 3b
7	Firm financial innovation	4a-d, 5a-b, 6a-c

Appendix IV: Members of Kenya Bankers Association (KBA) as at 31 December 2014 (Year of establishment shown in parenthesis)

1. African Financial services sector Corp. Ltd (1984)
2. Bank of Africa Kenya Ltd (1982)
3. Bank of India (1906)
4. Bank of Baroda (K) Ltd (1908)
5. Barclays Bank of Kenya Ltd * (1953)
6. CfC Stanbic Bank Ltd * (1992)
7. Chase Bank (K) Ltd (1996)
8. Citibank N.A. (1974)
9. Commercial Bank of Africa Ltd (1962)
10. Consolidated Bank of Kenya Ltd (1965)
11. Co-operative Bank of Kenya Ltd * (1989)
12. Credit Bank Ltd (1986)
13. Development Bank (K) Ltd (1963)
14. Diamond Trust Bank (K) Ltd * (1945)
15. Dubai Bank Ltd (2002)
16. Ecobank Limited (1985)
17. Equatorial Commercial Bank Ltd (1983)
18. Equity Bank Ltd * (1984)
19. Family Bank Ltd (1984)
20. Fidelity Commercial Bank Ltd (1988)
21. Fina Bank Ltd +
22. First Community Bank Ltd (2007)
23. Giro Commercial Bank Ltd (1992)

24. Guardian Bank Ltd (1992)

25. Gulf African Bank Ltd (2008)

26. Habib Bank A.G. Zurich (1967)

27. Habib Bank Ltd (1947)

28. Housing Finance Company of Kenya Ltd * +

29. Imperial Bank Ltd (1993)

30. I & M Bank Ltd * (1974)

31. Jamii Bora Bank Ltd (1999)

32. K-Rep Bank Ltd (1984)

33. Kenya Commercial Bank Ltd * (1896)

34. Kenya Women Microfinance Bank +

35. Middle East Bank (K) Ltd (1981)

36. National Bank of Kenya Ltd * (1968)

37. NIC Bank Ltd * (1959)

38. Oriental Bank Ltd (2002)

39. Paramount Universal Bank Ltd (1993)

40. Prime Bank Ltd (1992)

41. Postbank +

42. Standard Chartered Bank (K) Ltd * (1969)

43. Transnational Bank Ltd (1984)

44. UBA Kenya Bank Ltd (1949)

45. Victoria Commercial bank Ltd (1987)

**Listed on Nairobi Securities Exchange* *+Not published, to pursue alternative source*

Appendix V: Postal / Physical addresses of CEOs of commercial banks in Kenya (source KBA)

1	Mr. Sridhar Natarajan Group CEO African Financial services sector Corp Ltd ABC Building, 6t Floor, Koinange Street P. O. Box 13889, Nairobi	4	Joyce-Ann Wainaina General Manager CITIBANK N.A Citibank Towers, Upper Hill P. O. Box 30711, Nairobi
2	Mr. Anis Kaddouri Ag. Managing Director Bank of Africa Kenya Ltd Reinsurance Plaza P. O. Box 69562, Nairobi	5	Mr. Jeremy Ngunze Managing Director Commercial Bank of Africa Ltd CBA House, Mara Road, Upper Hill Nairobi
3	Mr. R.K. Verma Chief Executive Bank of India Kenyatta Avenue P. O. Box 30146, Nairobi	6	Mr. Japheth Kisilu Managing Director Consolidated Bank of Kenya Ltd Consolidated Bank House Koinange Street P. O. Box 51133, Nairobi

7	Mr. Jeremy Awori Managing Director Barclays Bank of Kenya Ltd West End Building, Waiyaki Way P. O. Box 30120-00100, Nairobi	10	Mr. Sunil Sahdev Managing Director Credit Bank Limited Mercantile House, Koinange Street P. O. Box 61064, Nairobi
8	Mr. Victor Kidiwa Managing Director Development Bank of Kenya Ltd Finance House, 16th Floor, Loita Street P.O. Box 30483, Nairobi	11	Mrs citibank Managing Director Diamond Trust Bank Kenya Ltd Head Office DTB Centre, Mombasa Road P.O. Box 61711-00200 Nairobi
9	Mr. Aurangzeb Quadri Country Operations Manager Habib Bank Limited Exchange Building, 2nd Floor, Koinange Street P. O. Box 6906, Nairobi	12	Mr. Ehouman Kassi Managing Director Eco Bank Ltd 2nd Floor, Fedha Towers, Muindi Mbingu Street P. O. Box 49584, Nairobi

13	Mr. Frank Ireri Managing Director Housing Finance Company of Kenya Ltd Koinange/Kenyatta Avenue P. O. Bo 30088-00100, Nairobi	15	Shamira Dostmohamed Ag. Managing Director Equatorial Commercial Bank Ltd Nyerere Road P. O. Box 52467, Nairobi
14	Mr. Abdul Janmohamed Managing Director Imperial Bank Limited Imperial Court Building, Westlands P. O. Box 44905-00100, Nairobi	16	Dr. James Mwangi, CBS Group Managing Director & CEO Equity Bank Limited Equity Centre, 9th Floor, Upper Hill P. O. Box 75104, Nairobi

17	Mr. Arun Mathur Chief Executive Officer I & M Bank I & M Bank House, 2nd Ngong Avnue P. O. Box 30238, Nairobi	19	Mr. Peter Munyiri Chief Executive Family Bank Ltd Fourway Towers 6th Floor P. O. Box 74145, Nairobi
18	Mr. Samuel Kimani Managing Director Jamii Bora Bank Ltd Unity House – Koinange P. O. Box 22741-00400 Nairobi	20	Mr. R. Sengupta Chief Executive Officer Fidelity Commercial Bank Ltd IPS Building, 7th Floor P.O. Box 48445, Nairobi

21	Mr. Mohamed Ali Hussein Country Manager Habib Bank A.G. Zurich Habib House, Koinange Street P. O. Box 30584, Nairobi	23	Mr. Omar Sheikh General Manager First Community Bank Ltd Prudential Ass. Building, 1st Floor P. O. Box 26219, Nairobi
22	Mr. Sanjay Gidoomal Executive Director Giro Commercial Bank Limited Kimathi Street P.O. Box 40263, Nairobi	24	Mr. Adekunle Sonola Managing Director, Fina Bank Ltd Fina House, Plot 24, Kimathi Street P. O. Box 20613-00200, Nairobi

25	Mr. V.K. Shetty Managing Director Guardian Bank Limited Guardian Centre, Biashara Street P.O. Box 67681, Nairobi	27	Mr. Abdalla Abdulkhalik Chief Executive Gulf African Bank Ltd Geminia Plaza, Mara Road Upper Hill P.O. Box 43683, Nairobi
26	Mr. Munir Sheikh Ahmed Managing Director National Bank Kenya Limited National Bank Building, Harambee Avenue P. O. Box 72866, Nairobi	28	Mr. Joshua N. Oigara Group Chief Executive Officer Kenya Commercial Bank Ltd KENCOM House, 8th Floor P. O. Box 48400, Nairobi

29	Anne W. Karanja Ag. Managing Director Kenya Post Office Saving Bank Head Office Market Lane Off 17 Banda Street Post Bank House P.O. Box 30311-00100, Nairobi	32	Mr. Albert Ruturi Managing Director K-Rep Bank Limited K-Rep Centre, Wood Avenue Kilimani P.O. Box 39312, Nairobi
30	Mr. Sammy Langat Managing Director Trans-National Bank Ltd Trans-National Plaza, 2nd Floor, City Hall Way P. O. Box 46342, Nairobi	33	Mr. John Gachora Managing Director NIC Bank Ltd NIC House, Masaba Road P.O. Box 44599, Nairobi
31	Mr. Lamin Manjang Managing Director Standard Chartered Bank Kenya Ltd Westlands Road P.O. Box 30003, Nairobi	34	Mr. R. B. Singh Managing Director & Chief Executive Officer Oriental Commercial Bank Ltd Ring Road Westlands, Apollo Centre, 2nd Floor P. O. Box 14357-00800 Nairobi, Kenya

35	Mr. Bharat Jani	38	Mr. Mohammed Mujtaba

	Chief Executive Prime Bank Limited Riverside Drive P. O. Box 43825, Nairobi		General Manager Paramount Universal Bank Ltd Sound Plaza, 4th Floor, Westlands P.O. Box 14001, Nairobi
36	Mr. Binay Dutta Managing Director Dubai Bank Limited ICEA Building, Kenyatta Avenue P. O. Box 11129, Nairobi	39	Mr. Dhirendra Rana Managing Director Middle East Bank Kenya Limited Mebank Tower, Milimani Road P. O. Box 47387, Nairobi
37	Dr. Yogesh Kanji Pattni Managing Director Victoria Commercial Bank Ltd Victoria Towers – Kilimanjaro Avenue Upper Hill Mezzanine Floor		

There are four banks whose postal and physical addresses were not included in the list obtained from KBA, namely Bank of Baroda, CfC Stanbic, Cooperative Bank and Kenya Women Microfinance bank. These addresses were sourced from the corporate websites of the respective banks.

Appendix VI: Normal distribution curve

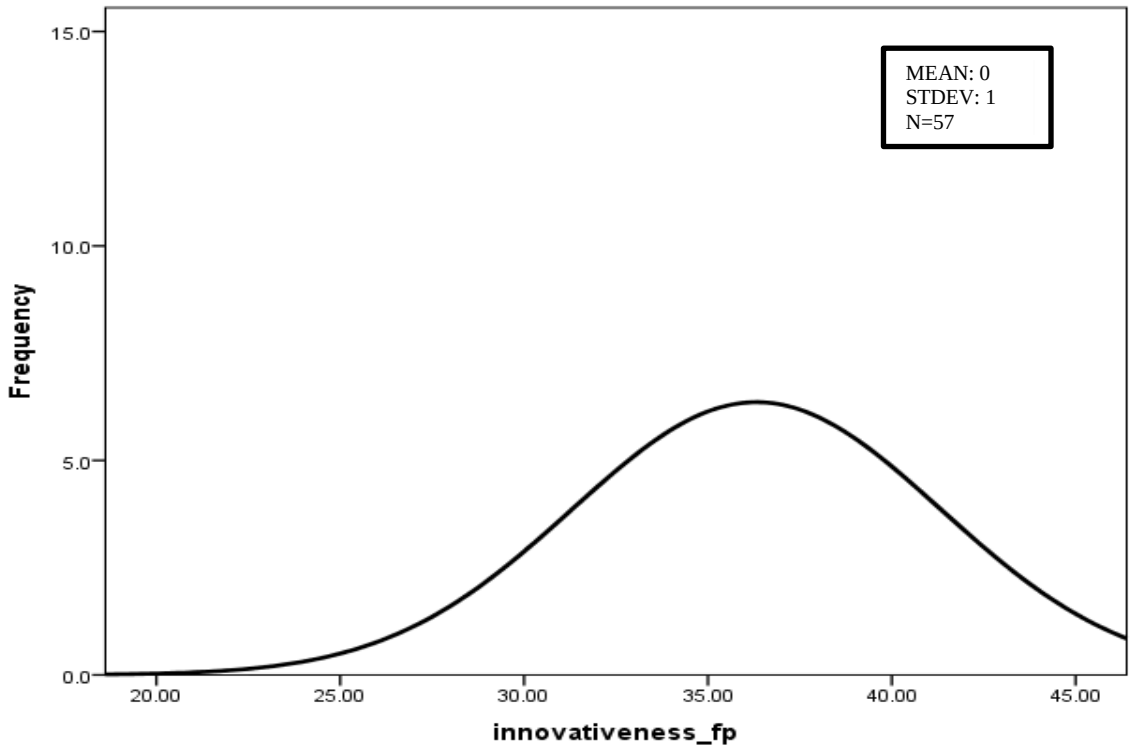


Figure 4.3.5.1: Normal distribution curve of innovation

Appendix VII: Introductory Letter from Moi University

MOI UNIVERSITY
POSTGRADUATE OFFICE
SCHOOL OF BUSINESS AND ECONOMICS

Tel: Fax No: (053) 43047
Fax No: (053) 43047
Telex No. MOIVARSITY 35047

P.O. Box 3900
Eldoret.

RE: MU/SBE/PGR/ACD/21B DATE: 20th April, 2020

TO WHOM IT MAY CONCERN:

RE: SEBASTIAN NZAU NTHAMA- SBE/ D.PHIL/BM/133/12

The above named is a bonafide student of Moi University School of Business and Economics. He is Pursuing **Doctor of Philosophy in Business Management** degree; specializing in **Finance.**

He has successfully completed coursework, defended his proposal, and is proceeding to the field to collect data for his research titled: ***"CEO Tenure, Board Capital and Firm Financial Innovation: Evidence from Financial Services Sector."***

Any assistance accorded to him will be highly appreciated.

For any additional information, do not hesitate to get in touch with the undersigned.

Yours faithfully,

DEAN
School Of Business and Economics
MOI UNIVERSITY

DR. RONALD BONUKE
POST GRADUATE STUDIES CHAIR, SCHOOL OF BUSINESS AND ECONOMICS
/vc

Appendix VIII:

Financial services sector Profitability 2013 - Ksh. Millions

	BANKS	PROFIT BEFORE TAX	NET ASSETS	RETURN ON ASSETS %	SHAREHOLDERS EQUITY	RETURN ON EQUITY %
1	Equity Bank Ltd	18,233	238,194	7.7	50,68	36.0%
2	Kenya Commercial Bank	17,746	323,312	5.5	62,39	28.4%
3	Standard Chartered Bank	13,316	220,524	6.0	36,03	37.0%
4	Barclays Bank of Kenya	11,921	207,010	5.8	32,37	36.8%
5	Co-operative Bank of	10,705	228,874	4.7	35,65	30.0%
6	CFC Stanbic Bank (K) Ltd	7,005	170,726	4.1	22,35	31.3%
7	I&M Bank Ltd	6,060	110,316	5.5	20,52	29.5%
8	Diamond Trust Bank (K)	5,566	114,136	4.9	18,56	30.0%
9	NIC Bank Ltd	5,221	112,917	4.6	17,63	29.6%
10	Citi	4,984	71,243	7.0	15,96	31.2%
11	Commercial Bank of Africa	4,464	124,882	3.6	13,74	32.5%
12	Bank of Baroda (K) Ltd	2,505	52,022	4.8	7,56	33.1%
13	Imperial Bank Ltd	2,494	43,006	5.8	5,71	43.6%
14	Chase Bank Ltd	2,251	76,569	2.9	7,48	30.1%
15	Prime Bank Ltd	1,893	49,461	3.8	5,81	32.5%
16	National Bank of Kenya	1,779	92,493	1.9	11,84	15.0%
17	Family Bank Ltd	1,758	43,501	4.0	5,96	29.5%
18	Bank of India	1,253	30,721	4.1	5,08	24.6%
19	Bank of Africa (K) Ltd	1,028	52,683	2.0	6,53	15.7%
20	Victoria Commercial Bank	586	13,644	4.3	2,52	23.2%
21	African Financial services	578	19,639	2.9	2,45	23.6%
22	K - Rep Bank Ltd	557	13,199	4.2	1,86	29.8%
23	Habib Bank Ltd	500	8,078	6.2	1,66	30.0%
24	Habib Bank A.G. Zurich	474	11,009	4.3	1,84	25.7%
25	Gulf African Bank Ltd	434	16,054	2.7	2,68	16.1%
26	Guaranty Trust Bank Ltd	413	25,638	1.6	6,09	6.8%
27	Guardian Bank Ltd	384	12,835	3.0	1,49	25.7%
28	Giro Commercial Bank Ltd	383	13,623	2.8	2,08	18.4%
29	Fidelity Commercial Bank	316	12,779	2.5	1,41	22.4%
30	Development Bank of	274	15,581	1.8	1,82	15.0%
31	Trans - National Bank Ltd	225	9,658	2.3	1,86	12.0%
32	First Community Bank Ltd	200	11,305	1.8	1,21	16.6%
33	Oriental Commercial Bank	178	7,007	2.5	1,52	11.7%
34	Equatorial Commercial	152	15,562	1.0	1,37	11.1%
35	Paramount Universal Bank	99	8,029	1.2	1,23	8.1%
36	Jamii Bora Bank Ltd	90	7,010	1.3	2,25	4.0%
37	Middle East Bank (K) Ltd	81	5,766	1.4	1,17	6.9%
38	Credit Bank Ltd	72	7,309	1.0	1,23	5.9%
39	Dubai Bank Ltd	16	2,927	0.5	1,03	1.5%
40	Charterhouse Bank Ltd **	-	-	0.0	-	-
41	Consolidated Bank of	(142	16,779	-	1,24	-11.5%
42	UBA Kenya Ltd	(278	3,710	-	1,05	-26.2%
43	Ecobank Kenya Ltd	(1,231	36,907	-	3,39	-36.3%
	Sub-Total	124,547	2,656,639	4.7	426,496	29.2%

Appendix IX:

Deposit Taking SACCO List 2013 - Ksh. Millions

Annex 8: Schedule of DT Saccos in Kenya in order of Asset base

	Name of Sacco	Membership	Assets	Deposits	Loans & Advances	Total Income
1	MWALIMU NATIONAL	57,277	24,540	18,557	21,053	3,510
2	HARAMBEE	86,934	17,633	12,463	14,454	1,671
3	STIMA	26,468	12,402	8,985	10,619	1,650
4	AFYA	38,733	11,885	9,369	8,705	1,616
5	KENYA POLICE	37,155	11,523	8,463	10,181	1,578
6	UNITED NATIONS	4,408	7,569	6,188	6,505	1,102
7	UKULIMA	35,268	7,321	5,514	5,681	798
8	UNAITAS	146,964	5,551	3,699	3,798	930
9	IMARISHA	31,818	5,219	3,244	4,372	746
10	METROPOLITAN	44,465	5,059	3,150	4,409	678
11	KENYA BANKERS	19,118	5,021	4,150	3,431	473
12	GUSII MWALIMU	19,489	4,848	2,794	4,221	784
13	BANDARI	8,829	4,496	2,719	3,974	665
14	MAGEREZA	19,607	4,322	3,138	2,677	389
15	KAKAMEGA TEACHERS	15,589	4,199	2,582	3,338	701
16	HAZINA	14,475	3,575	3,006	3,032	389
17	NYERI TEACHERS	8,980	3,557	2,110	2,442	435
18	BORESHA	42,439	3,399	2,002	2,378	503
19	IMARIKA	43,051	2,907	2,121	2,517	519
20	SHERIA	9,034	2,836	2,107	2,312	311
21	BINGWA	88,989	2,713	1,772	1,617	427
22	MENTOR	7,907	2,686	2,028	1,995	392
23	NACICO	14,097	2,565	1,247	1,614	304
24	SOLUTION	8,247	2,492	1,682	1,742	350
25	COSMOPOLITAN	9,279	2,333	2,026	1,990	307
26	K-UNITY	129,903	2,284	1,792	1,329	326
27	TOWER	11,011	2,273	1,791	1,837	336
28	WAUMINI	16,125	2,131	1,824	1,637	193
29	KITUI TEACHERS	11,556	2,121	1,521	1,786	412
30	MASAKU TEACHERS	1,865	2,061	1,652	30	168
31	MUHIGIA	5,403	2,055	1,424	1,748	325
32	NDEGE CHAI	24,309	1,919	1,217	1,535	303
33	MOMBASA PORT	4,376	1,853	1,008	1,577	394
34	WINAS	9,123	1,845	1,313	1,578	318
35	JAMII	15,373	1,802	1,331	1,588	287
36	CHUNA	4,538	1,740	1,192	1,723	205
37	THARAKA NITHI TEACHERS	13,707	1,709	1,041	1,356	311
38	CAPITAL	38,302	1,707	1,406	1,373	284
39	TELEPOSTA	1,960	1,663	701	3	146
40	ASILI COOPERATIVE	11,209	1,577	1,176	1,124	198
41	TAIFA	104,372	1,560	1,219	747	240

	Name of Sacco	Membership	Assets	Deposits	Loans & Advances	Total Income
42	YETU	22,192	1,560	1,074	1,051	288
43	SAFARICOM	5,246	1,535	1,355	1,299	166
44	CHAI	9,727	1,534	1,212	1,413	214
45	MURATA	83,512	1,530	1,057	1,047	236
46	KENYA HIGHLANDS	48,552	1,530	1,083	746	257
47	MAISHA BORA	3,880	1,504	1,235	1,366	178
48	NAKU	13,931	1,498	1,211	1,201	174
49	KENPIPE	1,687	1,462	1,171	1,275	188
50	MOI UNIVERSITY	4,211	1,442	939	125	73
51	EGERTON	4,009	1,422	972	1,045	225
52	LAIKIPIA TEACHERS	4,071	1,418	865	1,128	219
53	FORTUNE	96,234	1,338	760	884	232
54	ARDHI	7,628	1,290	1,148	36	133
55	NG'ARISHA	4,841	1,246	710	725	184
56	WANANDEGE	9,856	1,179	972	582	164
57	SHIRIKA SACCO	4,453	1,110	922	-	117
58	KENVERSITY	2,940	1,101	912	984	159
59	SUKARI	33,047	1,083	747	671	161
60	WAKENYA PAMOJA	148,381	1,062	336	549	345
61	WARENG TEACHERS	4,740	1,019	727	780	167
62	TAI	29,197	987	626	631	138
63	WANAANGA	2,593	987	859	790	143
64	NAWIRI	9,123	978	662	343	138
65	WANANCHI	60,730	966	646	687	193
66	JITEGEMEE	3,386	944	282	3	107
67	NASSEFU	3,420	937	628	740	172
68	TEMBO	1,696	926	721	681	123
69	NATION	2,214	925	787	789	101
70	TAITA TAVETA TEACHERS	3,561	902	573	660	185
71	MWITO	5,455	855	738	818	98
72	SIMBA CHAI	10,369	826	568	700	104
73	UKRISTO NA UFANISI	20,288	783	709	784	107
74	KENYA CANNERS	4,836	777	580	531	104
75	KITE	6,169	745	568	515	89
76	ELIMU	11,875	738	650	27	131
77	MERU SOUTH FARMERS	50,335	712	422	401	107
78	MARAKWET TEACHERS	3,163	682	514	579	66
79	KAPENGURIA TEACHERS	3,478	656	452	6	74
80	TRANSNATIONAL	4,214	655	433	480	112
81	UFUNDI	34,573	655	443	48	65
82	NANDI TEACHERS	2,836	646	594	15	59
83	RELI	9,207	637	314	7	44
84	COMOCO	2,738	578	444	448	97

	Name of Sacco	Membership	Assets	Deposits	Loans & Advances	Total Income
85	MWENDIWEGA	879	577	587	18	5
86	KWALE TEACHERS	2,759	575	303	6	44
87	FUNDILIMA	1,864	554	448	459	72
88	TRANSCOM	2,476	543	328	28	45
89	GITHUNGURI DAIRY	14,790	540	428	342	-
90	BUSIA TESO TEACHERS	4,451	538	367	398	132
91	KINGDOM	8,101	538	474	378	58
92	ORIENT	3,912	532	296	443	81
93	NAROK TEACHERS	2,836	519	342	438	55
94	DAIMA	25,239	518	326	206	101
95	BIASHARA	29,674	510	355	404	95
96	MOMBASA TEACHERS	3,063	509	294	359	94
97	KEIYO TEACHERS	2,052	503	411	376	42
98	UNIVERSAL TRADERS	35,551	467	293	392	96
99	DIMKES	8,134	455	416	404	50
100	MOSACCO	57,232	448	198	139	66
101	MUKI	2,588	426	306	3	58
102	AIRPORTS	1,485	421	312	305	59
103	MAGADI	1,099	410	296	321	74
104	MIGORI TEACHERS	7,037	407	228	6	23
105	SOT TEA	17,174	379	239	253	55
106	2NK	845	371	275	2	21
107	TARAJI	3,693	370	175	124	34
108	MASENO UNIVERSITY	1,176	355	129	1	30
109	THAMANI	10,232	353	189	216	66
110	SKYLINE	14,132	349	295	254	63
111	CHEPSOL	12,446	335	251	153	62
112	BURETI TEA GROWERS	6,200	330	137	97	64
113	MARSABIT TEACHERS	897	328	266	211	31
114	CHEMELIL	1,295	321	187	103	46
115	KENYA ACHIEVAS	27,104	315	137	69	83
116	VISION POINT	29,800	304	208	156	62
117	MWEA RICE FARMERS	6,993	297	138	8	10
118	NAFAKA	1,163	295	236	183	42
119	COUNTY	5,525	292	152	147	59
120	DHABITI	25,881	289	81	195	67
121	NDETIKA RURAL	8,056	289	202	225	39
122	MWINGI MWALIMU	1,465	260	184	3	33
123	SAMBURU TEACHERS	872	239	116	8	36
124	MMH	1,246	237	157	140	42
125	NYAMIRA TEA FARMERS	2,738	235	149	198	51
126	KERENGA	-	235	164	13	21
127	BARAKA	10,344	234	153	102	36

	Name of Sacco	Membership	Assets	Deposits	Loans & Advances	Total Income
128	CENTENARY	8,396	230	176	185	24
129	PUAN	1,147	228	163	154	24
130	ISIOLO TEACHERS	800	210	113	145	24
131	KMFRI	2,809	208	168	175	30
132	NTIMINYAKIRU	43,544	202	27	157	36
133	WEVARSITY	890	198	170	4	24
134	NANDI HEKIMA	9,691	190	100	136	50
135	TIMES U	11,552	190	135	152	36
136	LAMU TEACHERS	5,956	181	118	2	29
137	IMENTI	4,014	180	126	105	23
138	WAKULIMA COMMERCIAL	14,749	177	123	128	33
139	STAKE KENYA	3,943	175	113	100	21
140	NYAMBENE ARIMI	5,829	172	109	104	43
141	TANA RIVER TEACHERS	1,123	166	110	5	9
142	BONDO TEACHERS	1,106	160	87	3	11
143	TENHOS	7,556	156	87	103	33
144	NANYUKI EQUATOR	920	152	47	16	29
145	SUPA/SAMBURU TRADERS	1,081	152	121	116	18
146	ABERDARE RURAL	10,162	143	104	8	2
147	RACHUONYO TEACHERS	1,031	142	88	11	13
148	NDOSHA	2,943	140	93	99	22
149	WASHA	942	140	97	85	20
150	KIMUTE	1,276	140	65	8	6
151	MUDETE FACTORY TEA GROWERS	6,119	138	97	59	31
152	SUBA TEACHERS	900	138	91	7	7
153	NYALA VISION	11,396	138	105	64	27
154	LENGO	2,800	138	54	153	14
155	ELGON TEACHERS	747	136	98	89	19
156	KENYA MIDLAND	10,919	128	33	88	27
157	SIRAJI	3,423	121	97	84	26
158	BANANA HILL MATATU	2,415	121	87	17	8
159	NZOIA	565	119	49	4	13
160	NANDI FARMERS	1,815	119	75	3	14
161	SOTICO	3,717	116	79	84	21
162	UFANISI	566	115	89	99	18
163	AINABKOI FARMERS	1,371	114	72	16	12
164	FARIJI	1,581	111	72	79	24
165	JACARANDA	333	111	84	6	13
166	ENEA	13,060	110	72	40	38
167	JIJENGE/MACADAMIA	2,497	108	59	65	14
168	GILGIL/vision Afrika	3,740	108	70	20	12
169	NGP BAMBURI	496	107	68	4	7
170	KIAMBAA DAIRY	2,303	107	78	87	11

	Name of Sacco	Membership	Assets	Deposits	Loans & Advances	Total Income
171	BONDE LA KERIO	627	86	58	4	8
172	GITHONGO MAJANI	-	80	45	6	13
173	MILIKI	3,722	75	34	47	20
174	OGEMBO TEA GROWERS	3,851	75	45	18	16
175	MWIETHERI	-	74	60	2	10
176	TRANS-COUNTIES	565	73	58	2	9
177	AGRO-CHEM	387	73	54	8	9
178	KOLENGE TEA	1,373	72	50	6	8
179	NYAHURURU UMOJA	829	71	44	49	9
180	TUPENDANE - NAKURU MNCPL	926	70	50	3	14
181	KIPSIGIS EDIS	2,314	69	49	61	7
182	BARATON	263	66	55	9	12
183	KATHERA SACCO	1,030	62	21	2	6
184	NUFAIKA	528	61	50	1	8
185	UCHONGAJI	4,226	59	40	2	10
186	KORU-HOMALINE COMPANY	561	54	38	7	6
187	TUUNGANE TUJIJENGE SACCO	708	49	29	11	6
188	GOOD FAITH	966	48	30	4	6
189	GASTAMECO SACCO	4,236	46	41	6	9
190	NEST	1,202	42	20	4	14
191	OMOREMI RURAL	-	39	7	5	58
192	NYANDO-KISUMU	3,409	38	5	10	1
193	FLOUSPAR	185	35	26	7	3
194	REA VIPINGO	848	32	25	1	5
195	KAIMOSI TEA GROWERS	1,290	32	14	11	5
196	TESCOM	739	30	19	6	5
197	VIHIGA DISTRICT TG	7,401	29	6	15	8
198	ALL CHURCHES SACCO	1,345	28	17	8	2
199	ILKISONKO RURAL	1,743	28	21	3	4
200	NYANKOBA SACCO	3,851	28	14	5	4
201	MICII MIKURU	748	25	5	2	3
202	MULOT FSA RURAL	3,855	25	15	5	5
203	NYABIERA SACCO	1,121	22	12	3	1
204	RONGAI RURAL	-	19	14	2	2
205	LIMURU Traders	3,686	18	17	11	1
206	KINAMBA JUA-COMM	356	16	5	-	4
207	LENGA TUMAINI	1,141	15	19	7	3
208	RUBET SACCO	424	13	5	5	3
209	KIKAI RURAL	-	13	-	6	2
210	GICHUGU FARMERS	4,502	12	4	4	3
211	CHEBOSOBON	-	11	10	0	2
212	SIGOR FSA RURAL	1,068	9	2	4	1
213	CHESIKAKI RURAL	2,969	9	2	2	0
214	IHURURU	1,132	3	2	-	0
215	KIAMOKAMA TG	374	2	1	1	1
	Total	**2,822,553**	**261,587**	**185,787**	**196,859**	**35,656**

Figures in Kshs. million where applicable