CORPORATE GOVERNANCE, CHIEF EXECUTIVE OFFICER POWER AND RISK TAKING AMONG COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

Declaration by Candidate

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ABSTRACT

Though the Modern Portfolio Theory suggest a positive relationship between risk and return, empirical studies in the banking sector show mixed findings. Excessive risk taking in the financial sector has been attributed to lapses in corporate governance issues. Study findings are inconclusive thus, there is need for further research. Research studies also show that CEO power influences the effectiveness of the board and the quality of its decisions thus could be a suitable moderator. Hence, this study sought to investigate the moderating effect of CEO power on the relationship between corporate governance and risk taking among commercial banks in Kenya. The study specific objectives were to determine the effect of board independence; board ownership; board members financial expertise and board meeting frequency on bank risk taking and to determine the moderating effect of CEO power on the relationship between board independence; board ownership; board members financial expertise and board meeting frequency on bank risk taking. The control variables for the study were bank age and bank size. Grounded on positivism research paradigm, the study was informed by Agency Theory, Prospect Theory and Resource Dependence theory. The study adopted both explanatory and longitudinal research design. The target population consisted of 43 commercial banks that were registered with Central Bank of Kenya during the period 2008 -2018. After applying the inclusion/exclusion criteria 36 banks formed the study population. The study used secondary data that was extracted from audited financial statements of individual banks and Central Bank of Kenya supervisory financial annual reports. Data was analyzed using descriptive and inferential statistics with the significance of each independent variable being tested at 95% confidence level. The Hausman test informed the choice between fixed effect and random effect with the test preference being fixed effect model ($\rho < 0.05$). The findings show that board ownership (β_3 = -0.38, p=0.000<.05) and board financial expertise (β_4 -0.42, p=0.000<0.05) had negative and significant effect on risk-taking in commercial banks in Kenya. However, board independence (β_1 =0.57, p=0.000<0.05) and board meeting frequency (β_2 = 0.90, p=0.000<.05) had positive and significant effect on risk-taking. CEO power had a buffering interaction effect on the relationship between board ownership (β= 0.041; ρ<0.05 ΔR^2 =0.04), board independence (β=0.260; ρ<0.0, ΔR^2 =0.01) board financial expertise (β=0.031; ρ<0.0, ΔR^2 =0.05) and risk-taking on commercial banks, while CEO power had enhancing interaction effect on the relationship between board meeting frequency (β= -0.027; ρ<0.05, ΔR^2 =0.01) and risk taking. Nevertheless, CEO power had significant moderating effect on the relationship between: board independence, board ownership, board financial expertise, board meeting frequency and risk taking. Thus, the study concluded that firms with high board ownership and board financial expertise have low probability of risk taking, while banks with high board independence and frequent board meetings have high probability of risk taking. Moreover, in banks with powerful CEOs, board financial expertise, board independence and board ownership increase bank risk taking. On the other hand, in banks with powerful CEO's, board meeting frequency reduced risk taking. Based on the findings, the study recommends that banks should have a balanced number of executive to non-executive board members, board meetings with risk taking as an item in the agenda, a high number of board financial expertise and a considerable percentage of board share ownership. Ultimately, board members will be able to focus on banks' agenda and ensure their role in monitoring and evaluating the consequences of their decisions especially when there is a powerful CEO.

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ABBREVIATION AND ACRONYMS

BOD	Board of Directors
CBK	Central Bank of Kenya
CEO	Chief Executive Officer
NSE	Nairobi Securities Exchange
KCB	Kenya Commercial Bank
Ln	Natural logarithm
CGR	corporate Governance Reforms
OECD	Organization for Economic Co-operation and Development
RDT	Resource Dependence Theory
MFI	Microfinance Institutions
SACCO	Savings and Credit Cooperatives
NPL	Non-Performing Loans
R& D	Research and Development
ROA	Return on Assets
ROE	Return on Equity
DD	Distance to Default
CSR	Corporate Social Responsibility
SD	Standard Deviation
NSE	Nairobi Securities Exchange
NYSE	New York Stock Exchange
MBA	Master of Business Administration
UK	United Kingdom
EU	European Union
SOX	Sarbanes-Oxley Act

DEFINITION OF TERMS

Board Financial Expertise A term defined by the Sarbanes-Oxley legislation that was passed in 2003, which requires that least one member of the boards of directors is a financial expert (understand Generally Accepted Accounting Principles (GAAP) and financial statements; be experienced in preparing or auditing financial statements of comparable companies; have experience accounting for estimates, accruals, and reserves; understand internal accounting controls; and understand the functions of an audit committee (García-Sánchez, García-Meca & Cuadrado-Ballesteros, 2017)

Board Independence The state in which all or a majority of the members of a board of directors do not have a relationship with the company except as directors. For example, they may not be relatives of the company's founders, key players or major employees which is measured as number of non-executive directors to board size (Fakhrunnas & Ramly, 2017)

Board Meeting Frequency The board's main activities and responsibilities under a prism that includes three main roles: the decision-making role, the monitoring role and the relational role which is a proxy of number of meetings held by the board members per year. (Younas, Klein, Trabert, & Zwergel, 2019)

Board of Directors (BOD)	This is the body responsible for directing and controlling the business of its company and is accountable to shareholders for its performance (Bowen 2008).
Board Ownership	Board ownership denotes the proportion of shares the board of directors own in a company (De Vita, & Luo, 2018)
CEO Power	These are CEOs who are very powerful (able to exert influence) relative to other executives in their top management teams hence have the authority to make strategic decisions on behalf of the firms in which they represent. (Tang, Crossan, & Rowe, 2011)
Corporate Governance	The framework of rules and practices by which a board of directors ensures accountability, fairness, and transparency in a company's relationship with its all stakeholders (financiers, customers, management, employees, government, and the community) (Marc 2012)
Risk-Taking	Decisions that increase risk through any of various channels (Srivastav and Hagendorff, 2016)

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter discusses the background of the study, statement of the problem, the study's objective, the hypotheses, significance of the research and scope of the study.

1.2 Background of the Study

The risk - return trade-off is core in modern finance theory and investment decisions. According to (Nugraha, Puspitasari, & Amalia, 2020; Kerbel, 1977), return denotes the percentage of economic growth of a firm's asset over a specified period. In the same way, Gautami and Kalyan (2018) assert that return is defined as the gain in the value of investment and it is the basis through which investors appraise the financial performance of investment portfolios. Alternatively, risk is defined as the likelihood that a peril or possibly destroying hypothesis could be occurring in the future (Downing *et al.*,2001). Hence, risk denotes the possibility of an investment or an asset to produce lower than estimated returns; precisely, risk is linked with adverse returns, reported as losses, alternatively, the degree that a poor outcome as expected drops lower than the targeted returns. The risk-return trade-off suggests that the riskier an investment is, the greater the expected returns relative to the risk-free return (Markowittz, 1952). However, there is contradictory evidence to the classic view of a positive risk-return relationship. First, an experienced manager may generate higher profit at lower level of risks through prudent investment decisions thus creating a risk-return paradox. Second, managers who are risk tolerant might prefer higher risks at lower profit levels (Ambos, Cesinger, Eggers & Kraus, 2020). Third, studies have shown that firms' diversification strategies influence the risk-return association; related diversification strategies exhibit a negative association, whereas unrelated strategy has

a positive causality (Gupta & Pathak, 2018). Again, some empirical studies have established a negative risk–return relationship when firms' financial performance is estimated by accounting-based ratios such as return on asset (ROA) and return on equity (ROE) as well as market based indices; Treynor Index (TI), Sharpe ratio (SR), Tobin's Q and Jensen Alpha (Chou, Chou, & Ko, 2009; Abbes, 2012).

Further, Kahneman and Tversky's (1979) prospect theory claims that individuals will act differently in different risk situations; whether it is a gain or a loss. The authors further argue that there exists a specific risk reference point for each individual that determine whether the individual is in a gain or loss position. Therefore, the theoretical assertions of the prospect theory explains firms' risk-taking decisions such that when investors set a target result and the expected results turn out to be higher than the target, then the managers decline to take additional risks (Díez-Esteban, García-Gómez, López-Iturriaga & Santamaría-Mariscal, 2017; Nuir & Marwan, 2019). Consequently, the risk-return tradeoff is unavoidable in corporate risk taking which in turn affects decision making and ultimately firms' performance and long term survival (Pratono, 2018).

Lee and Bourdage (2020) describe risk taking as "the engagement in behaviors that are associated with some probability of undesirable results." Similarly, Kiani, Pashootanizadeh and Ansari (2018) view risk-taking as engaging in activities that contain at least one uncertain outcome. Risk taking also refers to the propensity to be involved in activities whose outcome has an equal probability of benefits or harmful results that could occur simultaneously (Fazelina, Gary, Fauziah & Ramayah, 2013). In the context of firms, the amount of uncertainty connected with predicted results and cash flows as a result of new investments is known as business risk taking (Habib &

Hasan, 2017). Díez-Esteban *et al.*, (2017) asserts that risk-taking is both at managerial and organizational level. Managerial risk-taking denotes management's discretion in making strategic decisions related to resources allocation that can cause organizational changes and uncertainties. Conversely, organizational risk-taking is basically the uncertainty of firm's returns. Despite the two dimensions of risk taking researcher tend to use organizational risk-taking as an indicator of managerial risk-taking because managerial risk-taking affects organizational performance (Palmer & Wiseman, 1999; Lewellyn & Muller-Kahle, 2012).

Though risk taking is necessary for all sorts of businesses, the global financial crisis of 2007-2008 drew a lot of attention from researchers, practitioners, and policymakers since it resulted in bank collapse. Furthermore, empirical research suggests that the banking sector's susceptibility during the crisis was due to excessive risk-taking (Brunnermeier, 2009; DeYoung, Peng & Yan, 2013). Furthermore, some academics believe that poor asset decisions lead to a rise in nonperforming loans (NPLs) and bank failure (Sinkey & Greenawalt, 1991). As a result, banks' risk-taking decisions endanger not only their own safety, soundness, and effectiveness, but also the financial sector's overall stability due to the spillover effect (Srivastav et al., 2015). In studies conducted by (Farag & Mallin (2016); Laeven & Levine (2008), they contend that banks risk taking leads to the fragility of a country's financial system.

The emergence of financial technologies (mobile banking) and interest capping has further amplified banks' risk appetite. Though mobile lending allow for easy access to small and unsecured loans, this model of lending exposes banks to extra risks that can be attributed to compromised lending standards to accommodate high risk borrowers (Subrahmanyam, Tang & Wang 2014).

Corporate strategic decisions influence a firm's optimal amount of risk by ensuring that the risk does not differ too much from the investors target level (Minton, 2014). Consequently, there is numerous ongoing discussion concerning the extensiveness of corporate governance contributes to the risk exposure of banks. As stated by OECD (2004), corporate governance comprises of a system of inter- relationships among the company's management, the board of directors, stock holders not leaving other important stakeholders. According to Sheehan (2019), corporate governance denotes a collection of procedures and rules aimed at ensuring that organizations are effectively managed for the benefit of stakeholders. Besides, Juhari and Joseph (2020) contend that corporate governance is an important tool that can mitigate agency problem.

Corporate governance offers a structure through which corporate decisions, for instance, risk- taking that maximize firm value are made. Stulz (2015) observed a significant relationship between corporate governance and 'optimal' risk level; which permits the management must ensure shareholder value maximization while simultaneously considering the consequences of bank failures for other stakeholders. Koerniadi, Krishnamurti and Tourani-Rad (2014) claim that corporate governance lessens risk taking. Srivastav & Hagendorff (2016) also highlight the importance of corporate governance systems in mitigating firm risk taking.

Again, in the recent past, the banking sector regulators and supervisors have encouraged banks to adhere to good corporate governance practices (Board of Governors of the Federal Reserve System, 2010; Basel Committee on Banking Supervision, 2010; Organization for Economic Co-operation and Development, 2010). Prior studies have explored the corporate governance and risk taking relationship. Specifically, studies have examined the effect of board attributes (independence and

financial expertize), ownership and activity in monitoring and controlling bank risk taking (Younas, Klein, Trabert & Zwergel, 2019; Liu & Sun, 2021).

Ma and Tian (2009) describe the board as a tool through shareholders influences and control managers' behaviors. Hence, the board is a vital governance organ for any firm as it is mandated to make strategic decisions such as risk taking which affects varied stakeholders. The second pillar (that entails the supervisory review process) of the Basel II recognizes the board's crucial role in bank risk management (Basel Committee on Banking Supervision, 2005). A study by Younas *et al.,* (2019) reported an important association between corporate governance and firm risk taking.

Studies show that corporate governance mechanisms such as board independence (the presence of non-executive directors) and board ownership are beneficial in controlling risk-taking (Fakhrunnas & Ramly, 2017); however, a study by Brick and Chidambaran (2008) shows a relationship that is negative relationship between board independence and firm risk taking. Extant literature also shows that board ownership has an impact on risk taking. Jiraporn, Chatjuthamard, Tong and Kim (2015) suggest that board stock ownership aligns managerial interests with those of the shareholders thus; higher board stock ownership leads to optimal risk taking. Conversely, Mathew (2013) discovers a relationship that is positive between board ownership and risk taking.

According to Battaglia and Gallo (2017) board meeting frequency is crucial in monitoring the executive's risk taking behaviors. Consequently, the higher the board meeting frequency, the more effective the board is in monitoring the executive's behaviours related to risk- taking. A large count of meetings by board members allows the board to deliberate on the firms risk taking; which ultimately influence its overall risk level and return (Younas, Klein Trabert & Zwergel, 2019). A board member's

knowledge and experience in finance and accounting aids his/her understanding of the firm's financial environment and the risks emanating from the various firm policies. Further, board members possessing financial expertise are better placed in appraising risky policies that may be beneficial to the shareholders. Therefore, board financial expertise is an effective strategy of containing excessive corporate risk-taking (Younas *et al.,* 2019), however previous empirical studies report a positive association between board financial expertise and risk taking (Minton, Taillard & Williamson, 2011). In view of the mixed findings on corporate governance and risk taking relationship, there is need to investigate confounding factors.

Based on the agency theory, Chief Executive Officers are viewed as self-serving, have risk aversion characteristic, and are in possession goals that deviate from those of investors (Jensen & Meckling, 1976). Additionally, the theory contends that the CEO's position carries with it huge powers over a firm's resources because shareholders are widely dispersed; thus, no one shareholder can exert direct control (Jensen & Meckling, 1976). Thus, CEOs will engage in self-serving actions at shareholders' expense when an opportunity for doing so arises (Combs *et al.,* 2007). On top of the power given by their title, many CEOs own power sources inclusive of career expertize, long tenure and shareholdings (Daily & Johnson, 2007; Combs *et al*., 2007). For instance, CEOs possessing higher degrees of career experience increase investments including in situations where there are less internal funds (Gupta *et al.,* 2018). Such a scenario could be explained by a case of CEOs being lesser influenced by constraints associated with borrowed funds from external sources owing to the strong social connections they exhibit (Hu & Liu, 2015).

A study by Pathan (2009) suggest that CEO are more likely to engage in safe projects (less risky) because their job, salary and perquisites are normally linked to firm return; hence, they risk losing their job by supporting risky projects. On the other hand, Adams *et al.* (2005) show that firms with more powerful CEOs tend to take higher risk since powerful CEOs are able to make unchecked decisions which can result in more unpredictable options leading to extreme outcomes and eventually higher risk (Bernile *et al.,* 2016). Therefore, this study seeks to establish whether CEO power influences the association between corporate governance and risk taking among Kenyan commercial banks.

1.2.1 Commercial Banks in Kenya

The history of commercial banks in Kenya traces to the colonial period and the entrance of foreign banks thereafter. The journey began with Indian money lenders operating quasi bank services probably in the early 18th century. However, the initial recognized bank entity was Jetha Lila Bankers incorporated in India that had its establishment in Zanzibar in late 1880s. In 1889 the National Bank of India appointed the trade house of Smith Mackenzie as an agent in Zanzibar. Smith Mackenzie opened a Mombasa branch in 1887 which was later taken over by the Imperial British East Africa (IBEA) in 1888. Later in 1892 the National Bank of India started a subsidiary in Zanzibar; which followed by establishment of a Mombasa branch in 1904.

The establishment of local banks can be attributed to the passing of; first, the East Africa Post Office Savings Bank Ordinance (1909) that established the first bank. The East Africa Post Office Savings Bank Ordinance marked the beginning of Post Office Savings Bank (1910). EAPOSB started as a department within the colonial postal service. However, the services were not available to the rural population since the

services were restricted to where postal services were stationed. As of March 1911, the Kenya Post Office Savings Bank had 1,231 accounts, of which 684 belonged to Africans. Second, the Ordinance for the Regulation of Banks (1910) that enabled the National Bank of India to become the first commercial bank. By 1911 there were three banks namely, the National bank of India (with branches in Nairobi, Kisumu, Mombasa and Nakuru), the Standard chartered bank of South Africa (with branches in Mombasa, Nairobi, Nakuru and Kisumu) and Kathiawad and Ahmedabad Banking Corporation (which existed for the period 1910 to 1915 in Mombasa).

Absa Bank Kenya (formerly operating as Barclays Bank) was the first commercial bank to operate in Kenya. The bank traces its history from 1916 after the National Bank of South Africa (currently the First National Bank) opened a branch in Mombasa.

Co- operative bank of Kenya, originally a co- operative society, was the first ever commercial bank to be locally owned. This bank begun its operations in 1968 and was focused on meeting the growing needs of farming communities. The first ever bank to be owned fully by the government was the National Bank of Kenya (NBK). The merger between National and Grindlays Bank bore the Kenya Commercial Bank (KCB) in 1971.

Presently, the sector comprises of fourty three (43) banking institutions (fourty two commercial banks and one mortgage finance company (CBK, 2018). Commercial banks are key players in Kenya's economic growth by availing funds to investors; thus financial inclusion, expanded entrepreneurial activities and economic growth. The financial performance of banks has significantly improved since the year 2000. Though the Central Bank of Kenya reported a significant growth in the industry

(CBK, 2012), there has been increased cases of increased credit risks (non-performing) associated with corporate governance mechanisms, leading exposing banks to excessive risks.

After the CBK implemented policies to simplify the sector to safeguard it from collapsing in the aftermath of financial liberalization and competition, Kenya's banking industry has seen tremendous expansion in the previous two decades. Kenyan banks have diversified worldwide as a result of this; for example, Equity Bank and Kenya Commercial Banks are now regional banks (Muthungu, 2003).Conversely, with the enactment of the Microfinance Act (2006), among other supportive regulations, Kenyan commercial banks continue to face stiff competition from deposit taking MFIs (DTM); which are gradually emerging as a new player in the banking sector. According to CBK (2020), the microfinance sector has an aggregate of 219, 400 active loan account compared to commercial banks 7,112,000. In terms of assets, MFIs have a total asset base of assets MFIs 5.351 relatives to banks' 74.9 billion.

Despite, the recent corporate governance fiasco the Kenya's banking sector is globally celebrated for its innovativeness in the mobile banking and payment technologies. The technologies that are aimed at meeting customer expectations, increasing financial inclusion and enhancing efficiency. A survey by CBK (2020) shows that between January 1, 2020 and December 31 2020 79% of the banks and 72 % of microfinance banks introduced a new Fintech product. These financial innovations have contributed greatly in diversification of products that are customized to meet the evolving customer needs while at the time improving the competitive edge of these institutions. While banking institutions successful leveraged information and communication technologies to accomplish their objectives, mainly in cost reduction

strategy, there is a change in focus towards an alternative strategic coin, where technology is no longer perceived as a cost saver but as a revenue generator.

The Kenya banking sector is required to operate under prudential guidelines and circulars issued by CBK, a body established under the Central Bank of Kenya Act. CBK is now anchored in Article 231 of the Constitution of Kenya (2010). Among other objectives, CBK is required to formulate and implement monetary policy, issuing currency notes and coins, and offer banking services to the Government of Kenya and be the last resort commercial banks. Additionally, CBK oversees foreign exchange policy, hold and manage foreign policy reserves, license dealers in the 4 money markets, promoting the smooth operation of payments, clearing and settlement systems, issue legal tender and advice the government and act as its fiscal agent.

The Banking Act Cap 488 (Laws of Kenya) is the main statute that provides for the establishment, management, supervision and licensing of banking business in Kenya. For the purpose of self-regulation, commercial banks have structured themselves in an umbrella association referred to as the Kenya Bankers Association (KBA). The functions of KBA have metamorphosed over the last decade from negotiating on behalf of employers with the union on labor matters to include promoting member banks' interests, by engaging the government and the regulator (CBK). Some successes have come out of it most notable being the cheque truncation system that has reduced cheque clearing days to T+1. Another of its flagships is the current plan of chipping all debit cards, and doing away with the fraud prone stripped cards. The other key player in the banking sector is the Credit Bureau Reference established under the Credit Reference Bureau Regulations (2013) and licensed by CBK. CRBs gather, store, collate credit information on individuals and companies from different

sources, and avails the information (credit reports) to lenders thus minimizing information asymmetry in the lending process.

In Kenya, the Capital Markets Authority has set rules for public firms' corporate governance standards. For example, the guidelines were advanced to promote good governance in terms of corporate performance, capital formation and shareholders' maximization of values and to protect of investors' rights' (Wamalwa, 2003). These guidelines provide roles and responsibilities of boards of directors, including formulation of risk policies and identification of corporate business opportunities and principal risks in its operating environment. The corporate guidelines mandate the board of directors to craft implement and oversee sound risk management policies (CMA, 2010). A higher level of concentration of power is expected to improve risk aversion by a firm's directors (Akbar, Kharabsheh, Poletti-Hughes & Shah, 2017).

Though Kenyan banking sector has resilient and recorded unprecedented growth in customer based and asset base, there has been numerous cases of corporate governance lapses in the last two decades. This is assertion is evidenced by the collapse of once profitable banks for instance the Dubai Bank (2015), Imperial Bank (2015) and Chase Bank (2016). The closure of these banking institutions not only raised a red flag to the regulator but also millions of bank customers and investor. Prior studies reveal that corporate governance hitches in the banking sector can be explained by the failure of these banks to strictly follow prudential guidelines issue by the regulator, regulatory laxity and excessive risk taking (Marshal, 2017; Njanike, 2009)

1.3 Statement of the Problem

The nature and extent of a firm's risk-taking behaviour can significantly affect corporate performance and survival. Furthermore, empirical studies show that managers' willingness to take risks in pursuing profitable opportunities is an essential driving force of firm performance and sustainable competitive advantage (Yung & Chen, 2018; Pratono, 2018). Besides, the conventional finance wisdom suggests a risk-return trade-off where high-risk strategies are usually associated with high average returns. In contrast, low risk strategies usually have lower expected returns (Ashwin Kumar *et al.,* 2016). Researchers also argue that many managers believe that risk-taking is a fundamental element of their managerial duties (Gentry, Harris, Baker & Leslie, 2008; Jaspersen & Peter, 2017). Although risk-taking is an essential element of any commercial undertaking, failure to manage it can lead to undesirable outcomes not only for a firm but the financial system at large.

There is evidence to show that excessive risk-taking behaviour by commercial banks was one of the factors that catalyzed the Global Financial Crisis of 2007-2008 (Neuenkirch & Nöckel, 2018; Yeh, 2017). Banks, unlike other firms, are more predisposed to risk-taking owing to their high leverage, limited creditor market discipline and because they can increase rapidly and opaquely the riskiness of their assets (Di Tommaso & Thornton, 2020). Banking primary business involves lending, which exposes banks to credit risks, the most important source of financial instability in the banking sector. Banking credit risk is the likelihood of a debtor defaulting to a loan commitment termed a non-performing loan (NPL). NPL ratio to total loans rose from 4.7% in December 2012 to 5.2% in December 2013 (CBK, 2013). As of 2020, Kenya's NPL stood at 14.5%, which is considerably higher than the global average of 6.45%, which had reduced from 8% in 2010.

Further, with the introduction of Fintech, banks risk appetite has increased through escalating digital loans (Ndwiga, 2019). This could have been exacerbated by the enactment of interest rate capping law which shifted the borrowing behaviour of lenders. Fintechs allow for easy borrowing procedures and allow for the borrowing of small amounts while exposing banks to additional risks. Banks end up engaging in aggressive risk-taking and reduction in lending standards, thus fragility (Subrahmanyam, Tang & Wang, 2014). In Kenya, the closure of Dubai, Chase and Imperial banks was an indicator of rampant lending behaviours that were not controlled by corporate governance.

According to (Berger, Lamers, Roman & Schoors, 2020), bank failures can be costly to uninsured depositors because they have substantial adverse effects on a country's economy, leading to a considerable debate on the extent to which corporate governance practices affect banks' risk-taking. Although previous research has shown a key connection between corporate governance mechanism and risk-taking, findings are inconclusive. While one stream of studies shows a positive relationship between corporate governance and risk-taking (Mollah, Hassan, Al Farooque & Mobarek, 2017; Tao, & Hutchinson, 2013; Andrieș & Nistor, 2016), the other suggest a negative association (Elamer, AlHares, Ntim & Benyazid, 2018; Jiraporn, Chatjuthamard, Tong & Kim, 2015). Yet, some studies claim no association between corporate governance and risk-taking (El-Masry, AbdelFattah & Elbahar, 2016; Rachdi & Ameur, 2011).

According to the literature, the elements of corporate governance include board characteristics (board independence and board financial expertise), board ownership and board meeting frequency. Research studies further disintegrate the specific

corporate governance indicators to study the individual effect on risk-taking. Typical indicators that suit this study are considered with prior studies on the impact of; board independence, board ownership, board financial expertise and board meeting frequency on risk-taking giving inconclusive findings. For instance, some studies on board independence and risk-taking show a positive relationship (De Vita & Luo, 2018; Olson, Parayitam, Skousen & Skousen, 2018; Fakhrunnas & Ramly, 2017); other findings indicate a negative relationship (Elamer, AlHares, Ntim & Benyazid, 2018; Hunjra, Hanif, Mehmood & Nguyen, 2020; Akbar, Kharabsheh, Poletti-Hughes & Shah, 2017) while some show no relationship (Cheng *et al.,* 2010; Sri & Solimun, 2019).

Studies on the effect of board ownership on risk-taking yield mixed findings, with some studies supporting a positive relationship (Arouri, Muttakin, Hossain & Al Farooque, 2014; Yeh, 2017; Nodeh, Anuar, Ramakrishnan, Rafatnia & Nodeh, 2015); some research findings oppose positive relationship (Randøy & Goel, 2003; Kim & Lu, 2011) while some have shown no effect (Simpson & Gleason, 1999). Research findings on board financial expertise and risk-taking point to a positive relationship (Minton, Taillard & Williamson, 2014; Güner, Malmendier & Tate, 2008; Isa & Lee, 2020) while others negative relationship (García-Sánchez, García-Meca & Cuadrado-Ballesteros, 2017; Hau & Thum, 2009) and others no relationship (Ittner & Keusch, 2015). Previous studies that sought to assess the board meeting frequency and risk-taking association also indicate mixed findings. While on stream suggest a positive relationship (Younas, Klein, Trabert & Zwergel, 2019; Eling & Marek, 2014), posit a negative association (Abate & Zeleke, 2014; Ayadi & Boujèlbène, 2012), yet others show no effect (Isa & Lee, 2020; Chaudhary, 2020).

Previous empirical research shows that CEO power (tenure, age and experience) influence boards' monitoring ability; thus risk taking (Baldenius, Melumad & Meng, 2014; Ruigrok, Peck & Keller, 2006). Powerful CEOs are capable of controlling the agenda at board meetings and information flow to the board members that weakens its ability to oversee managerial decisions (Gavin, 2014). Studies also show that over-powerful CEO tends to increase banks risk-taking (Victoravich, Xu, Buslepp & Grove, 2011; Haider & Fang, 2018).

Given the previously mentioned, the purpose of this study was to determine whether CEO power moderates the relationship between corporate governance dimensions; board independence, board ownership, board financial expertise, board meeting frequency, and bank risk-taking among Kenyan commercial banks.

1.4 General Objective

The study's main objective was to establish whether CEO power moderates the relationship between corporate governance and risk-taking among commercial banks in Kenya.

1.4.1 Specific Objectives of the study

The specific objectives of the study were to;

a) Determine the effect of board independence on risk-taking among Kenyan commercial banks
b) Establish the impact of board ownership on risk-taking among Kenyan commercial banks
c) Examine the effect of board meeting frequency on risk-taking among Kenyan commercial banks

d) Assess the impact of board financial expertise on risk-taking among Kenyan commercial banks

e) Establish the moderating effect of CEO power on the relationship between;

i. Board independence and risk-taking among Kenyan commercial banks

ii. Board ownership and risk-taking among Kenyan commercial banks

iii. Board financial expertise and risk-taking among Kenyan commercial banks

iv. Board meeting frequency and risk-taking among Kenyan commercial banks

1.5 Hypotheses of the Study

H_{01}: Board independence has no significant effect on risk-taking among Kenyan commercial banks

H_{02}: Board ownership has no significant effect on risk-taking among Kenyan commercial banks

H_{03}: Board financial expertise has no significant effect on risk-taking among Kenyan commercial banks

H_{04}: Board meeting frequency has no significant effect on risk-taking among Kenyan commercial banks

H_{05}: CEO power does not moderate the relationship between;

H_{05a}: Board independence and risk-taking among Kenyan commercial banks

H_{05b}: Board ownership and risk-taking among Kenyan commercial banks

H_{05c}: Board financial expertise and risk-taking among Kenyan commercial banks

H_{05d}: Board meeting frequency and risk-taking among Kenyan commercial banks

1.6 Significance of the Study

The findings contribute to the corporate governance literature by providing more insights into the relationship between the two variables, corporate governance and bank risk-taking and the moderating effect of CEO power. This study further makes a contribution to discussions under research on corporate governance – risk taking literature hence, giving appropriate and an all-inclusive exploration of the Kenyan banks' financial performance. The study's findings highlight the role that corporate governance (board activities, board independence, board financial expertise and board ownership) plays when it comes to risk taking approach within banking firms as this could ultimately affect the returns.

Moreover, the study forms a basis for further research studies. Based on the findings of this study, scholars can now understand the relationship between corporate governance, CEO power and bank risk-taking. This may form a foundation for further studies that may assess the effect of other CEO attributes on the corporate governance and risk taking association. Similarly, further studies may address the limitations highlighted.

To the regulator, this study highlights essential areas on corporate governance and risk-taking that could be a basis of effective governance policy and aspects of corporate governance that would have the most significant impact on risk-taking decisions and, ultimately, financial performance. Focus on corporate governance and risk taking issues has received overwhelming attention in research, more so in the banking industry, owing to the extreme competition among banks and thrift financial institutions and the 2007-2008 global financial crisis which affects performance in the long run. Policy makers are presented with important framework for policy

formulation in the following sections; finance companies, corporate, stockholders and bank creditors. The importance of the guidelines are felt when they are applied by varied firms during diverse performance of the economy at different times.

To managers of banks, the results of the study aids in decision making relating to appropriate choice of corporate governance tool to apply in the day to day operations of the banking business. The variables under consideration are important since they affect risk-taking behaviour and, ultimately, the financial performance of banks.

1.7 Scope of the Study

This study considered commercial banks in Kenya. As of the year 2018, there were forty two (42) banks and one mortgage company (Housing Finance Corporation). However, over the study period Chase bank and Imperial bank were under receivership while Charterhouse was under statutory management. Data were obtained from the Central Bank of Kenya (CBK) annual banks' supervisory reports and individual banks' audited yearly reports from 2008 - 2018. The study period was of interest since the Kenyan financial sector experienced significant transformations. First, the Banking Act was amended to introduce a cap on the maximum chargeable interest rate on loans and minimum interests on deposits held in interest-earning accounts. This implied risk-taking since banks had to be aggressive in widening the sources of their income. Second, there were numerous financial technologies (fintech) described as financial innovations that are technologically enabled to improve financial services delivery (Campino, Brochado & Rosa, 2021). Additionally, CBK reports indicated registration of new financial institutions (Microfinance and Savings and credit co-operatives).

Thirdly, this period was characterized by post elections and post-election violence cooling-off period hence the suitability of learning their effects on the financial sector. With the foundation of Vision 2030, new technologies were employed to provide financial services, which expose the financial sector to more risks (Government of Kenya, 2008).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter explains the variables of this research; risk-taking, corporate governance, CEO power, and controls. Further, the chapter presents the theoretical foundation of the study as well as an empirical literature review. Finally, the study presents a conceptual framework that shows the relationship among the variables.

2.1 Concept of Bank Risk-Taking

According to the literature, the term risk has been defined differently by various researchers. According to Dvas and Dubolazova (2018), risk refers to the possibility of an unanticipated loss of profit as a result of both internal and external factors. Additionally, the risk symbolizes the lack of certainty about and extremities of an action's end results (or outcomes) in regard to something that human beings hold valuable (Aven & Renn, 2009). Moreover, risk is a condition or event in which something that a human being holds valuable (as well as human beings themselves) is in jeopardy and where the outcome is not certain (Rosa, 2003). Although risk involves uncertainty, this concept is essential since it influences individuals' beliefs, attitudes, and managerial decisions.

Finance literature shows that shareholders are only willing to invest their capital in firms that guarantee a high risk-adjusted return (Kahnehman &Tversky,1979). Thus, the risk and return trade-off is an essential aspect of portfolio theory since the two parameters are the primary tools for choosing an optimal portfolio. Moreover, the conventional wisdom dictates that "higher risks generate higher returns" implying that profit-maximizing policies are usually associated with higher levels of risk. Based on

the risk-return trade-off, the risk-taking behaviour of firms is based on the premise that the higher the risk, the higher the return; hence higher risk-taking decisions are capitalized with the expectation of higher rewards.

According to Chatterjee, Wiseman, Fiegenbaum and Devers (2003), risk-taking involves selecting alternative options with different risk-return features. Belanes and Hachana (2009) View risk-taking as the willingness to engage in behaviours with uncertain and significant outcomes for the firm. Empirical literature and theory have established an essential link between risk-taking and organizational outcomes. Prospect and Behavioural theories argue that managers' risk-taking behaviours are based on firm target performance as a reference point. Managers become risk-averse when they exceed the target and risk-takers when the performance hits below the set target.

Conversely, Certo *et al.,* (2008) view managerial risk-taking as a decision-making bias. Managers may act irrationally by considering investments with significant losses over those with smaller losses due to their responsibilities or ego. Though the modern financial theory contends that managers should maximize shareholders value by selecting opportunities with the highest expected value, it would be unrealistic to assume that they are mere agents for the shareholders; managers attempt to reconcile the interests of all other stakeholders (employees, suppliers, community, customers, and Government) as well as themselves. Furthermore, managers are likely to be risk-averse in the short term to prove the viability of the firms they lead and protect their jobs.

Though risk-taking affects firm outcomes, empirical literature shows mixed results. For instance, several researchers suggest that firms taking lower risks perform better

(Zhang, Jiang, Qu & Wang, 2013; Akter, Majumder & Uddin, 2018; Tarraf, & Majeske, 2013). On the other hand, Walls (2005) found that firms that behave in a highly risk-averse manner generate less than superior returns implying that managers need to identify their firm's appropriate risk tolerance level before making investment decisions.

Risk-taking among banks necessitates special attention. First, the key business of a bank is the acceptance of deposits and advance loans which creates disparity between the term structures of assets and its liabilities. A maturity mismatch between the two sides of the balance sheet might lead to banks run. Second, banks are highly levered, which increases the probability of default; therefore, the depositors demand a higher risk premium as compensation for the higher risk of insolvency, whereas the regulator demands a minimum capital requirement. Thirdly, the balance sheet of banks are extremely opaque as compared to those of ordinary firms since they maintain few physical assets, thus making it even more difficult even for the bank to assess their riskiness more accurately. Fourth, banks do substantial business among themselves, such as the interbank markets, over-the-counter derivatives markets, and foreign currencies, making competitors business partners. Weighty regulations and constant supervision govern the banking business due to their importance in the financial system and vulnerability to runs (Mülbert, 2009).

Therefore, bank risk-taking is significantly influenced by the strength of the supervisory system (monetary policies), individual banks' balance sheet position, and market structure (Buch & DeLong, 2008). Specifically, the regulator employs several prudential tools, among them, engaging in supervisory reviews (including stress tests), carrying out on-site inspections and investigations, giving or withdrawing bank

licenses, approving banks' acquisitions of qualifying holdings, safeguarding compliance with prudential rules, and coming up with capital requirements ("buffers") to protect a country's financial system (Altavilla, Boucinha, Peydró & Smets, 2020). Moreover, due to the financial crises of the year 2007 – 2008 which showed that corporate governance failures contributed to excessive risk-taking by banks, bank supervisors have taken up bank corporate governance practices seriously to prevent a reoccurrence. In particular, the Basel Committee on bank supervision published two corporate governance guidelines entitled "enhancing corporate governance for banking organizations" that reflects the supervisors' perception of and approach to the issue (Mülbert, 2009)

Given the importance of corporate risk-taking, researchers have paid considerable effort in unearthing the factors that influence risk-taking; corporate governance (John, Litov & Yeung, 2008; Konishi & Yasuda, 2004; Akbar, Kharabsheh, Poletti-Hughes & Shah, 2017), Corporate social responsibility (Harjoto & Laksmana, 2018; Dunbar, Li & Shi, 2020), capital structure (Nguyen, 2013; Niu, 2008), regulation (Magar, Phillips & Hosie, 2008; Gonzalez, 2005) among others.

Previous studies focused on measuring risk-taking (default risk) based on different methods which is either a measure that is based on accounting, Z-score (Belanes & Hachana, 2009; Houston *et al.,* 2010; Pathan, 2009; Laeven & Levine, 2009) or one that is based on market conditions which is grounded on the Merton's structural distance-to-default model (Hagendorff & Vallascas, 2011; Gropp, Vesala & Vulpes, 2006;). Because riskier business operations always produce more unpredictable returns on investment, John *et al*., (2008) suggest market-adjusted volatility of firm-level earnings as an indicator of firm risk taking level. Habib and Hasan (2017) took

in to account three indicators: the standard deviation of ROA, the standard deviation of returns and Research & Development (R&D) expenditure (scaled by assets), finally, the standard deviation of ROE as proposed by Miller and Bromiley 1990). Generally, Roy's (1952) z-score has received wide acceptance as an indicator of bank risk-taking. The measure was later advanced by Boyd and Graham (1986), Hannan and Hanweck (1988), and Boyd, Graham, and Hewitt (1993). Z-score is preferred over the other measures owing to its relative simplicity in computation and availability of public accounting data. Z-score is composed of two parts, where the first part is a measure of bank portfolio risk (ROA/SDROA), whereas the second component is a measure of leverage risk (capital asset ratio/SDROA). A larger Z-score number is an indication lesser risk taking, and it is an indicator that the bank is more stable and vice versa (Srairi, 2013).

2.2 Concept of Corporate Governance

Based on the tenets of Agency Theory (Jensen & Meckling, 1976), the existence of conflicting interests on the parts of the agents and the principals end up creating an agency issue that cannot be solved given that asymmetric information on the paart of the agent in terms of his efforts and actions. Agency problem(s) contributes to an additional cost to the firm since the agents engage in some self-seeking behaviours, thus imposing uncertainty in the firm value (Fama & Jensen, 1983). Therefore, best corporate governance practices regarding board independence, board ownership, board financial expertise, and board meeting frequency are a weapon used by shareholders to control errant managers' behaviour and to govern agency problems (Chen *et al.,* 2007; Deshmukh, 2005) . Shareholder trust is boosted by corporate governance measures, which ensure that agency problems are under control, resulting in higher share values (Connelly *et al.,* 2009; Kanagaretnam, Lobo & Whalen, 2007).

Varied researchers have established several definitions of corporate governance. For instance, corporate governance has been viewed as a system that divides firm tasks and responsibilities and, at the same time, a mechanism for directing and controlling a firm's objectives, operation, and strategy (Uhlaner *et al.*, 2007; Roelofsen *et al.*, 2015). Conventionally, corporate governance emphasizes financial control and directs the relationship between a firm and its shareholders. Still, current knowledge has included other stakeholders (creditors, Government, employees, customers, and investors) while stressing social and environmental objectives (Blok, 2020). Hence, to capture all the modifications, the European Commission (2010) describes corporate governance as a system for directing and controlling companies, as well as a system of interrelationships among company's board of directors, management, shareholders, other stakeholders notwithstanding. For operational purposes, this study uses Standard and Poor's (2002) definition that corporate governance "encompasses the interconnections among a company's management, its board of directors and its financial stakeholders.

Further, studies have viewed corporate governance as a system of institutional and market-based mechanisms, instruments, and rules established with the sole purpose of fulfilling one or many among the following objectives: (i) to mitigate agency problems which arise when firm ownership and control; (ii) to protect stakeholders' interests; (iii) to enhance corporate efficiency, as expressed by firm performance; and (iv) to ensure investors satisfaction through adequate return on their investment (Brychko & Semenog, 2018; Aguinis & Glavas, 2012; Jones, 2009; Abor & Adjasi 2007).

While corporate governance has been researched from several perspectives, ranging from performance governance codes (Blok, 2020) to relationship governance (Midttun, 2005) and from self-regulatory frameworks (Gond *et al.*, 2011) to E-governance (Moon, 2002), corporate governance in banking has been focused on too; (Hunjra, Hanif, Mehmood & Nguyen, 2020; Anginer, Demirgüç-Kunt, Huizinga & Ma, 2017; Srivastav & Hagendorff, 2016; Laeven & Levine, 2009).

According to the literature, the elements of corporate governance include board characteristics (board independence and board financial expertise), board ownership, and board meeting frequency.

2.2.1 Board Independence

Board independence is essential to monitor daily executive management efficiently. Independent board members can speak more freely and ask the CEO about information that a non-independent board member may find more difficult to ask. Board independence is the proportion of directors that are independent and non-executive within the board; on the other hand, the size of the board is indicated by the total number of board of directors (Nor, Nawawi & Salin, 2017).

Generally, directors who are independent are exclusively external without other association related to the company they represent apart from serving as members of the board and are considered a balancing mechanism between the board and the management (Hashim & Devi, 2008). Fama & Jensen (1983) support a firm with a good number of directors being non- executive to reduce the agency conflict since they are considered to be efficient monitors more so to ensure senior management and stockholders do not have conflict of interest since they are considered experts in decision control. To achieve independence, board members are not allowed to have

transactions or relationships within the firm. They must be independent of the management because it may obstruct the exercise of independent judgment or the norm of acting with shareholder's expectations at heart. Further, studies have found that best corporate governance practices lie with the quality of the board of directors; therefore, several board members must be independent for the decision process to have an independent judgment (Parayitam, Skousen & Skousen, 2018; Pathan, 2009; Hunjra, Hanif, Mehmood & Nguyen, 2020).

2.2.2 Board Ownership

The interest of board members in owning equity in a firm and its likelihood on board's effectiveness has continued to elicit overwhelming interest in corporate governance studies. Board ownership is the percentage of shares owned by directors, thus aligning the interest between management and shareholders (Ozbek & Boyd, 2020). Prior research indicate that equity ownership by managers affect the opportunistic behaviours of the board of directors of a firm. When board members become part owners of the business, their level of motivation is proportionate to that of the shareholder to the extent that the board will not assume risks that do not maximize shareholders' wealth (Jehu & Ibrahim, 2019). Hence, board ownership is an indicator of the level of board stewardship toward the firm. Empirical studies show that board ownership has an effect on the ongoing concern (Garba, 2017), firm financial performance (Phan & Le, 2018); earning management (Jehu & Ibrahim, 2019), and corporate Social Responsibility (CSR) transparency (Garcia-Torea, Fernandez-Feijoo & Cuesta-González, 2017). For instance, in the study of Hooghiemstra *et al.,* the board is seen as a crucial tool employed in controlling the selfish behaviour of the management. Furthermore, Ahmed and Manab (2016) argue that with increased board ownership, the board becomes more diligent on decisions that ultimately improve firm

performance. Again, Faysal, Salehi & Moradi (2020) suggest that board ownership enhances board oversight which reduces moral hazard problems, consequently lowering agency costs and cost of equity.

The system via which organizations are given direction and control is referred to as corporate governance. The governance structure establishes how privileges and duties are distributed among various participants in the corporation, comprising of the members of board, management, investors, creditors, auditors, regulators, including other stakeholders, while also defining the rules and processes for decision making within a firm (Amahalu, *et al.*, 2017). The method through which firms are directed and governed is known as corporate governance. The latest financial crisis exposed various flaws in corporate governance procedures, encouraging regulators throughout the world to make essential changes to their national rules and standards in order to advance the strength of corporate governance in the economies they oversee (Marc, 2012).

Furthermore, governance offers the framework within which organizations determine and achieve their goals while taking into account the social, regulatory, and commercial environments. As a result, corporate governance is a method for monitoring corporate actions, policies, and decisions. The alignment of interests among stakeholders is part of governance. (Adrian, 2009).

To successfully lead business strategy, a corporate board should be formed of people with the appropriate aggregate skill set (Johnson, 2010). Obtaining this goal through the initial selection of board members or the adjustment of the composition of an existing board, according to Johnson (2010) is a significant accomplishment. The board is in charge of ensuring that the corporation has clearly defined and safeguarded

shareholder rights, a strong control environment is established, high levels of transparency and disclosure are set, and that the company's and all shareholders' interests are aligned. The board of directors is in charge of supervising and controlling the company's operations, and its performance is held accountable to shareholders (Bowen, 2008).

According to Abor (2007), a corporation that is operating well owes it to an efficient board of directors who are active in internal monitoring of the management. A board that is efficient is core for a firm that is appropriately functional and governed since such board members are assumed to be crucial in internal management. Ideally, the board of directors leads long-term business strategy, assigns crucial agents to carry it out, and analyzes performance against the plan. As a result, poor business performance begins with a board of directors failing to execute its main tasks. Boards of directors, on the other hand, practically by definition function out of sight of the general public and most investors. While it is hard to require complete transparency of board meetings due to the nature of secret board deliberations, there is that urge to trust and believe in the proper functioning of a board (Abor, 2007).

The firms' directors are tasked with the responsibility of guaranteeing that the firm they represent is able to satisfy its stakeholders and coming up with business strategies to succeed thereafter (Arfken *et al*., 2004; Peterson & Philpot, 2007). In the event that the corporation does not accomplish its goals, the general public always tends to query the capacity of its board.

Critical analysis and practical problem solving are among the many strategies that a board of directors applies in accomplishing their duty of designing a corporation's strategies. Among the drawbacks in the process of boardroom decision making is

group- think that can be termed as a psychological behaviour of reducing conflicts and arriving at a consensus in the absence of critical evaluation of substitute ideas in an in-group surrounding that is cohesive. Bringing together ideas of a group of persons with varied skills, education background and level of experience is thought to approach issues from a wider range of viewpoints, air out puzzling queries and deliberate with more vigour within the groups of management team at the top. Such kind of multi – perspective problem analysis can change the dynamics of the boardroom leading to outcomes of higher quality than resolutions that are made in an environment characterized by groupthink environment (Hussain, 2011).

A board characterized by diversity can boost an organization's reputation by sending signals to inside andoutside stakeholders that the firm values diversity and fails to discriminate against minorities on matters ascending the corporate ladder. This could imply that all employees are treated equally and that management is anxious to portray the company as socially responsible (Powell, 2000).

Corporate governance profiles include factors such as gender, tenure, financial background, and educational diversity (Tarus & Aime, 2014, Berger *et al.*, 2012 and Srivastav, 2015). Bernile *et al.*, (2016) further identify some unique diversity dimensions which unanimously capture cognitive and demographic features that can be observed and measured; gender, age, ethnicity, educational background, financial expertise, and board experience. There is ample agreement that boards core assignment is primarily to select and monitor management on behalf of the shareholders (Carter & Lorsch, 2004; Thomsen, 2008); hence, there are vital concerns when designing a board that ensures that the board is aligned, informed and decisive (Bohren & Strøm, 2008; Carter & Lorsch, 2004). Generally, when designing a board,

one needs to be concerned about selecting a board that aligns the interests of the principals and the agents, that provides information for monitoring and advice while fostering decision-making effectiveness (Bohren & Strom, 2007, 2008; Carter & Lorsch, 2004; Becht *et al*., 2003; Hermalin & Weisbach, 2003).

2.2.3 Board Financial Expertise

In the literature of corporate governance, board financial expertise is an essential tool required in ensuring the effectiveness of strategic decision making and in consideration of what it implies for the future performance of corporate governance and in protection of investor's wealth. Therefore, the financial expertise of board members is viewed as the essential characteristics of a board committee if it is to operate effectively (Asogwa, Ofoegbu & Modum, 2020). Furthermore, board expertise is a crucial element in making sure that the responsibility of board oversight is discharged efficiently and effectively. The importance of board financial expertise improves and shifts the main topic of discussion among board committees and in general assessments of a company's financial performance. Previous skills gained as an employee in the area of finance or accounting, any other related know-how, recognized professional qualification in accounting or previous knowledge leading to one's financial sophistication, as well as holding or have previously held the position of a CEOor any other high- ranking officer responsible for financial oversight, are all examples of board financial expertise. (Aier, Comprix, Gunlock & Lee, 2005). The members of the board committee with financial competence are those who have knowledge and experience in accounting and financial reporting, internal control systems and audit. Previous empirical studies have shown evidence that board financial expertise significantly influences firm performance (Apergis, 2019; Bouteska, 2020) and the quality of financial reporting (Asogwa *et al.*, 2020).

2.2.4 Board Meeting Frequency

Board meeting frequency is a crucial element in the governance of a corporation (Jackling & Johl, 2009). Board meeting frequency denotes the board's involvement in various tasks such as control, advice, network, and strategy. The frequency of board meetings throughout the year indicates whether the board of directors is active or passive. The frequency of board meetings can also provide insight into the board's importance, as a higher number of meetings means that more information is shared with members and that more concerns are resolved (Frias-Aceituno, Rodriguez-Ariza & Garcia-Sanchez, 2013). Board meetings are a common avenue for tabling and ideas are exchanged in monitoring the management. Mandala *et al.,* (2018) define frequency of board meetings as the frequency and the sum of board meetings held per year. The intensity of board meeting frequency cannot be assumed when considering the key elements of the oversight function (Brick & Chidambaran, 2010). Vafeas (1999) adds that frequent discussions of board members result in good decisions and increase the board members' ability to supervise firm activities and regular meetings should be held with a proper record of the annual count of meetings including personal particulars of ach board member attendees must be disclosed. Conversely, Jensen (1993) views board meetings as a factor that does not always fulfill its purpose due to the limited time external directors spend together, which will not always be used for the meaningful exchange of ideas among themselves or with the management.

2.3 Concept of CEO Power

Power tends to corrupt, and absolute power corrupts absolutely (Accredited to Lord Acton, 1887). This is a caution insinuating that power dominance in leaders tends to cause more harm than good most of the time hence shaping knowledge on power.

Such leaders tend to tamper with the channels and flow of information within the top management team for personal reasons and expected gain (Tang *et al.,* 2011). The CEO is undoubtedly the most influential figure in an organization. Studies have shown that firms' top executives significantly influence organizational processes and outcomes, ultimately determining organizational success (Sariol & Abebe, 2017; Sheikh, 2018).

CEOs have a great deal of discretion in firms' strategic decisions by reason of their powers (Abebe, Angriawan & Liu, 2011). Therefore, CEOs career experiences, training, and networks influences organizational outcomes. According to Finkelstein, (1992), power is the capacity of individuals to exert their will as a means of pursuing their goals whereas; CEO power is the ability of an executive to manage information uncertainty and to control resources. Further, Park *et al.,* (2018) view CEO power as a reflection of the CEO's capacity to exert their will on the board. While Li, Lu, and Phillips (2019), contend that CEO power refers to the capability of the Chief Executive Officer to control a variety of firm decisions. In addition, Bachmann, Loyeung, Matolcsy, and Spiropoulos (2020) define CEO power as the capacity of the CEO to guide the directors of a firm and corporate decision making. Hence, a powerful CEO power is likely to influence important board’s corporate decision-making and ultimately firm's outcomes.

Finkelstein (1992) proposes four dimensions of CEO; structural, ownership, expert, and prestige power. Structural power (legitimate power) has its origin in the hierarchy of an organization; and is the course origin of CEO power (Sheikh, 2019). Ownership power is linked to the CEO's equity ownership as well as the status of the founder. Thus, a CEO with significant shareholdings will likely influence the board's

independent decision-making (Fang, Lee, Chung & Wang, 2020). Expert power is based on CEO's human capital and is linked to a CEO's capacity to deal with a challenging situation. (Zou, Qi, Xie & Ma, 2020). According to Ting (2013), CEOs with expert power, through experience and expertise, can manage the firm's uncertain external environment effectively. Finally, prestige power plays a substantial role in the board structure and is obtained from CEO's social networks, connections, CEO's reputation and it is usually related with increased CEO ego and confidence in making judgments (Hamori & Koyuncu, 2015).

Top management power as put forward by Finkelstein is based on four Finkelstein (1992) and appears that other equally essential elements of power, such as a manager's competencies, were not studied or included in his study; other equally significant characteristics of power, such as a manager's competences, were not studied or included in his study. There are a few limitations to the study that should be mentioned. The findings show that the upper echelon theory (Hambrick & Manson, 1984) utilized in the studies was too narrow and insufficient, and that it should be expanded to include other theories including the premise that executive authority influences the top managers- organizational performance relationship. Additionally, the method for calculating power has some drawbacks. A situational difference that might tip the power balance was overlooked. Additionally, no effort was employed in identifying the variables that impact the relative significance of the various sources of power.

The dominating behaviour of the CEO is usually manifested by his/her level of power (Cheikh, 2014), which confers upon them the unlimited powers to make important decisions on behalf of their firms. Prior studies also suggest that powerful CEOs can

even sway the board of directors into paying them a high compensation, preferably with little or no nothing in return (Bebchuk *et al*., 2002). Literature also shows that powerful CEOs even manipulate governance mechanisms meant to monitors and check their actions (Hellwig, 2000). This implies that the system through which the agent is compensated and incentives granted is flexible; and subject to change to the agent's influence.

The extent of CEO power can be utilized in extracting private rewards from the organization. However, extraction of private benefits is pricey to the CEO. First, in situations where there is monitoring of the CEO and is found diverting the resources of a firm, the CEO must return the diverted resources and pay a deadweight fee. Second, private benefits extraction increases the risk associated with CEO's consumption that is costly for a risk-averse CEO. In spite of these costs, positive private benefits happen because shareholders are unable to monitoring the CEO or such an exercise may not be successful; thus, leading to a moral hazard problem. Besides, for easy extraction of private benefits, the CEOs may manipulate the monitoring intensity of the shareholders; for instance changing the governance mechanism. However, in an optimal contract, shareholders may permit the change in governance and increased diversion in exchange for offering a low wage (Tate, 2009)

The CEO is tasked with operational decisions of the firm. Therefore, powers conferred to the CEOs office are determined by the extent to which such powers affect a firm's risk taking (Pathan, 2009). More often CEO's will use their power to increase private benefits at the same time limiting board's monitoring capabilities (Core *et al.*,1999). In the study of (Hermalin & Weisbach, 2006) on corporate governance reforms, findings show that the governance framework is activated within

the organization as a reaction to the challenges faced by the firm in question. Hence, as much as the board has the leeway of supporting acquisitions, the initiator and overseer of its development is always the CEO (Lehn & Zhao, 2006). Therefore, an all-powerful CEO has the likelihood of pursuing acquisitions since a CEO possessing power is in a better position to counter the effects of opposing forces for instance, a vigorous and effective corporate governance with the firm the CEO is representing (Adams *et al.,* 2005). This leads to the conclusion that CEO power is strongly linked with acquisitions.

Further, a conceptual framework of the effect of executive power on strategic outcome was developed by Finkelstein (1992). Additionally, (Liu & Jiraporn, 2010) contend that the corporate outcomes can only be affected by executives only if they are in a position to influence critical decisions. The findings of the study indicate low credit ratings and higher yield spreads in a scenario with powerful CEOs who influence decision making with the firms they represent. Therefore, CEO power is the capacity of a CEO to counter resistance and regularly influence vital decisions within a company (Nanda *et al.*,2016: Adams *et al.*,2005). According to Mintzberg (1983), power not only connotes influence or influence and control for self-serving purposes but encompasses the real exercise of power and what concerns that kind of control capturing factors such as, managers' skill and willingness to exercise power.

The office of the manager may confer the power to carry out legitimate authority, dictates the managerial rights within the hierarchy of the organizational, guides the capacity to gratify, discipline or deprive and finally directs on the extent of information control.

Power and control is based on the four sources put across by Finkelstein (1992). These sources are structural, ownership, expert and prestige. Structural power is also known as hierarchical or legitimate power since it is the overriding principal avenue for capturing executive level power and a strong determinant of power (Hambrick, 1981). Board composition of a firm more often than not functions as an indicator of CEO's structural power and builds a case for board efficiency in controlling such power (Boeker, 1992; Ocasio, 1994). Secondly, expert power denotes the competence of a senior office holder in managing the external environment that the firm operates in hence providing a source of power (Hambrick, 1981; Tushman & Romanelli, 1983). Chief Executive Officers with some external links are better placed in taking advantage of such opportunities and developing business bonds both inside and outside their companies hence, the CEO handles better the environmental uncertainties that present themselves to affect a firm's operation (Nanda *et al.*,2016). On the part of the board, the directors of a firm provide unmatched service as agents of boundary -spanning as evidenced by their basis for selection since a firm is able to have access to key resources or information that would otherwise be deficient the organization (Pfeffer & Salancik, 1978; Provan, 1980).

Thirdly, ownership power gives privilege to CEO's to act as both managers and shareholders of the organizations they represent. CEOs holding a percentage of stake within the firm have exhibit more power in making firm decisions and further in determining the direction of the firm (Hambrick, 1981). This is in contrast with CEO's without ownership in the firms they represent (Zald, 1969). Board ownership is also supported when it comes to aligning the interests of shareholders with those of the board hence guiding decision making on important areas of firm performance.

Finally, prestige power originates from the status of a CEO and the aggressiveness in reducing unforeseeable circumstances within the firm (Finkelstein (1992). Further, some CEO's serve as members in boards of other firms and some have various higher education qualifications which further raise their prestige since, providing their services on other boards may be an indicator of CEO's competence in directing and providing management of inter- organizational dependencies due to improved information access and flow (D'Aveni, 1990; Pennings, 1980). This further helps in benchmarking which leads to a competitive firm (Selznick, 1957).

Managerial power could therefore arise from other sources such as reference to others, charisma and expertise (Robins, 2005). According to Bloisi, Cook and Hunsaker (2007), the sources of power could emanate from events that are not mutually exclusive which are considered key determinants of power which include personal behaviour, situational forces and position. Taber (1983) further argues that other sources of power arise from the official placement of a person which allows the office holder to exercise valid authority or take charge of the rewards therein. On the other hand, possession of personal power could be a possibility and may arise due to coalition networks, reference for others and the level of skills the manager has; in essence, these sources of power have no direct link with the organization. According to Bloisi, Cook, and Hunsaker (2007), exercise of power could be interrupted by links with prominent persons, interrupted information flows or compulsion hence seizing the situational opportunity presented. Further, a person in senior position may combine double or more sources of power in employing such control with the intention of changing the way others are behaving which could be more enhanced in an environment where the employees of the organization are empowered through trainings and probably rewards.

While the validation of the studies identified (Raven & French,1962; Finkelstein, 1992; Robins, 2005; Bloisi, Cook & Hunsaker, 2007) is based on the facets of well-known foundations of power, other concerns fail to arise on the actual combination of power and groupings since literature has harmonized the issues of concern (Han Kim & Lu,2008; Malekzadeh *et al*., 1998; Liu & Jiraporn, 2010). Contends that the sources of power could be segmented in to two large segments and identified as either formal (structural/position) or informal (personal) power.

In previous studies, CEO experience has been used as an indicator of CEO power. According to (McCall, 2004), executives who possess previous experience as CEOs could join organizations at chief operations officer and president level leading to grooming of the firm with the intention of rising to the top most position. Gupta *et al.,* (2018) further contend that CEO career experience breeds robust social relationships and connections implying the possibility of being affected by external restrictions. Several possibilities cushion the fresh board preference. The job of a CEO is exceptional compared to other executive-level professions. Their requirements are pegged on abilities which are fundamentally unique in comparison with those required for lower level executive careers such as the management of the board members or the equity holders' of a firm. The proficiencies in focus are mostly efficiently attained through job specific proficiencies (McCall, 2004). The "heir apparent," the within- firm appointee, that is recognized as the inheritor a period (years or months) before the prosperous event and is prepared for the CEO position by the current CEO, lacks any reservation, pointing some features of the CEO Career (Zhang & Rajagopalan, 2004).

2.4 Theoretical Framework

Evenett and Hoekman (2005) point out the classification of the theories based on scope, function, structure, and level. Scholars have put forward several theories and models that highlight the relationship between corporate governance and risk-taking and the moderation effect of CEO power. However, the study will discuss four theories that inform this study. Different scholars have incorporated these theories in their pursuit of grounding their studies. The theories include agency theory (Jensen & Meckling, 1976); Prospect theory (Khaneman & Tversky, 1979); Resource Dependence theory (Pfeffer & Salancik, 1978) and stewardship theory (Donaldson & Davis, 1991).

Agency theory explains the relationship among corporate governance, CEO power and risk taking variables. In the absence of a powerful CEO, Resource Dependence Theory explains the relationship between corporate governance and risk taking while Prospect theory explains the risk taking concept. These theories are therefore intertwined in supporting this study.

2.4.1 Agency Theory

As the name suggests, Agency theory, deals with the association between principals (investors) and the agents (managers and executives of a firm). Clarke (2004), states that in accordance with the theory of agency, the principals who are also the owners of the company (shareholders) employ the skills of agents, who are described as the directors or managers, in the daily operations and administration within a firm or companies. Therefore, it is crucial to put across two features that have the probability of affecting the authenticity agency theory (Alalade, Onadeko & Okezie, 2014; Dandy, Dalton & Canella, 2000): firstly, it is built on concepts and is considered a

simple theory which seeks to reduce the relationship to two participants namely, the management and investors (shareholders). Secondly, the proposition that the managers of an organization or its shareholders could show a characteristic of self-interest.

It is shareholders' expectation that the person entrusted as the agent will fulfill their interest (Jensen & Meckling, 1976). Conversely, conflicting interests between the principal and the agent exist (Padilla, 2000). Literature supports Adam Smith (1887) as the initial identifier of the agency problem which is seconded by Ross (1973). Jensen and Meckling (1976) offered the initial comprehensive and describable features of the Agency theory. Davis, Schoolmaen and Donaldson (1997) gave proof of the likelihood of issues that could arise out of separating ownership and control as stated in agency theory. To put it in another way, the agent may lack trust in the principals' objectives versus the agency's drive Agency theory, according to Bhumani (2008), was primarily created to separate ownership and control. According to Alchian and Dumsetz, agency theory is borne from theory of economics (1972). To sum it up, the role of corporate governance, according to Lubakin (2005), points to enhancing compliances through minimizing the executive's self-deprecating dispositions to mitigate risk through opportunistic decision-making measures. Berle and Means (1932) introduced the concept of separation of equity ownership and management as the critical aspect of any corporate governance system. Agency theory stipulates that chief executive officers (CEOs) have the characteristics of being risk-averse, self- serving and having objectives that diverge from those of the investors of a firm. This implies that CEO's will get involved in self- satisfying actions at shareholder's expense when they get a chance to do (Jensen & Meckling, 1976). The relationship created by agency dictates the delegation of responsibility to an agent

(CEO) by the principal (shareholders). Since agency relationship assumes that the principal is selfish in acting for the principal, The principals are tasked with aligning their interests with those of the agents through some form of incentives that peg the agents' rewards to investor's results and further, agents' behaviours should be closely monitored (Eisenhardt, 1989).

In light of the aforesaid, these ideas applied to the administrative suite implying that agents (CEOs) would lay emphasis on their personal wealth and the security of their jobs at the expense of the investors who are the principals (Shleifer & Vishny, 1989). The board of directors (BoD) is tasked with providing sufficient incentives and monitoring of the agents. The board is the front line defense against selfish actions of the chief executive officers since it is an official body appointed to represent shareholder's rights considering they are tasked with that fiduciary responsibility (Walsh & Seward, 1990). Most studies have focused on outside directors who have neither in the past or currently hold any position in the firms they represent and hold no considerable business or family attachment with the management (Johnson *et al*., 1996). These kinds of directors have no dependence on the CEO for an outstanding source of income and are motivated to uphold their reputation as experienced persons in making decisions, monitoring and controlling a firm (Fama & Jensen, 1983).

Based on the tenets of the agency theory, external director dominant boards are better placed in protecting shareholders hence, firms possessing such characteristics should end up with better results in terms of performance as portrayed in the returns. Agency theory has the characteristic of emphasizing on director's control which does not deny external board members resources and service (Hillman & Dalziel, 2003). Agency theory contends a strong association between external director's dominance and board

power. The CEO more often than not determines who sits on the board (Walsh & Seward, 1990) hence are subject to ingratiation and manipulations that weaken the board independence in making sound decisions (Westphal, 1998).

Nevertheless, in contrast with inside directors, who work under the CEO and can be summarily dismissed, regularly with limited questions from other members of the board (Pitcher *et al*., 2000), external directors have little dependence on the CEO. Therefore, a board composition comprised of non- dependent directors as the majority gives the board the strength to force the management, for instance the CEO, ta carryon activities that are in accordance with shareholders' expectations. Actually, a board with external directors as the dominant group is often likely to approve take – over bids (Buchholtz & Ribbens, 1994) and are have a lesser likelihood of adopting poison pills (Brickley *et al*., 1994) hence, offering golden parachutes, that is the compensation to key executives for losing their jobs when a public company is sold (Singh & Harianto, 1989), or attach new price to underwater options (Pollock *et al*., 2002). Nevertheless, research has been carried out over decades in trying to establish whether outside directors have an impact on pro- shareholder actions and whether its effect run down to organizational performance. This could be owed to the fact that studies are yet to find and identify factors that can moderate such a relationship. In agency theory, power plays a pivotal role hence CEO power is one factor that is likely to influence the efficiency and effectiveness of outside directors.

Power is the capacity to guide other people's decisions (Yukl, 1998). In the context of Agency theory, the office of the CEO confers substantial power over an organization's resources since the investors are located in diverse parts of the world and none of the shareholders can have influence or direct control (Jensen & Meckling,

1976). Additionally, on top of the power the title grants to the holder, majority of CEOs possess power from other sources which include; being board chair, long tenure and having substantial stake ownership (Daily & Johnson, 1997; Combs *et al.*, 2007).

Even though research has previously shown that powerful CEOs yield positive results which include distinct lines of authority, speedy response to strategies and critical external responsibility point (Cannella & Monroe, 1997; Finkelstein & D'Aveni, 1994). When faced with conflicting interest between the owners and the management, the case of conflict of interest between shareholders and the managers, Agency theory allows minimal room to no space for the CEOs to use their influence to shareholder advantage unless they are compelled or enticed to do (Frankforter *et al.*, 2000). Efficient monitoring by the board can assist in preventing manipulation of power and ensure that CEO power is used for the benefit of the firm (Finkelstein & D'Aveni, 1994). As per Agency theory tenets, CEO power provides direction for need for a balance of inside and outside directors in order form a balanced board. Hence, with the growth of CEO power, then role of outside directors continue to take on increasing (Fama & Jensen, 1983).

2.4.2 Resource Dependence Theory

Resource dependence theory (RDT) proponents (Pfeffer 1972; Pfeffer & Salancik, 1978) argue that the external environment provides valuable resources in terms of experience, communication, and information, essential facets of firm competence and survival. Hence, these resources (i) facilitate a link between resources and other firms (ii) fill the gap created by environmental uncertainty, (iii) controls risk-taking, (iv) place a firm's legitimacy in the good books of shareholders (v) enhances more skills, knowledge, and advice to the top management (vi) the management is monitored

better. These benefits are crucial in a setup where risk and uncertainty are significant challenges to organizations.

Firms co-opt resources they need to survive from the environment in which they operate. The co-optation concept possesses essential implications for the duties of the board members in the process of making decisions by bringing necessary resources on board. RDT forms a foundation and theoretical argument regarding various board features.

The board provides a connection between the companies they represent and the outside environment leading to improved risk-taking decisions. A diverse board brings in unique, vital, and intangible resources based on each board member's different skills and knowledge (Hillman *et al*, 2000). Further, (Berger *et al.*, 2012) argue that a board is heterogeneous and is characterized by diverse experiences resulting in broad, thorough, and informed decision analysis.

It can be argued that diverse board features, for instance board financial expertise, board independence, and board meeting frequency enhance the decision-making process by enriching dissimilar backgrounds, perspectives, and experiences (Carter *et al.*, 2010).

According to Cox and Blake (1991), a sound and functional management of a firm regarding diversity create a competitive advantage for companies in cost, marketing, resource acquisition, creativity, problem-solving, and organizational flexibility. Consistent with RDT, various board features could enhance risk monitoring to curb excessive risk-taking. Furthermore, the decision-making of the board regarding risk-

taking intensity is enhanced by board members possessing financial expertise ((Najwa, Ramly & Haron, 2020).

2.4.3 Prospect Theory

This theory was advanced by Kahneman and Tversky (1979), who proposed the application of a behavioral lens in evaluating an individual's risk-taking decisions, thus challenging the notion of investor rationality. The theory proposes four fundamental conceptions in the structure of an individual's risk preference based on emotional biases. In the first place, shareholders assess assets and assign them as either gains or a loss and is not based on to the ultimate wealth (mental accounting); secondly, individuals tend to be more loss averse than they are appealed by gains (known as loss aversion); thirdly, individuals focus more on risk-seeking behaviours in the event that a loss has been made and risk-aversion in the realm of gains (risk preference being asymmetric); lastly, persons overestimate low probabilities and underestimate high probabilities when evaluating extreme probabilities (probability weighting function).Hence, this theory contends that individuals tend not to utilize objective probabilities in decision-making; instead, a transformation of the objective probabilities is done by non-linear decision weighting function.

Prospect theory claims that there are two stages when making decisions within an organization which are the editing stage and the evaluation stage. The process involved in the editing stage captures the initial analysis of the presented forecasts (prospects, which leads to a better understanding of an opportunity, contingencies, and likely outcomes of the decision. Therefore, during the editing phase, the agent's code becomes gains and losses and implements mental calculations over the probabilities. In the evaluation stage, the prospect's probabilities are retraced by

decision weights. The weight assigned to each decision is what finally determines the utility function and decision made.

Prospect theory has been widely applied in finance and insurance as an appropriate guide to making decisions when faced with the condition of risks. In particular, the theory has been used to explain the reasons behind certain investment decisions and anomalies. Nonetheless, investment decisions including asset price occurrences have been explained using this method. The risk-return trade-off should be reduced or even negative among stocks where investors have experienced losses and are thus risk-seeking, according to a practical application of prospect theory (mental accounting). Stocks where investors have seen gains and are so risk-averse should show a positive risk-return relationship. When firm performance is below a given target, the managers will tend to engage in risk-taking behaviours. If the performance is above the investor's target, they tend to be risk-averse. Risk-taking behaviours could be attributed to the fact that riskier alternatives may give managers a greater likelihood of attaining the anticipated result than less risky options. Despite the fact that the prospect theory was first conceived at the level of the human decision maker, many researchers have adopted it in the analysis of associations relating to risk and return at the firms' and industries' level since the 1980s (Fiegenbaum, 1990; Masood, Alam & Tang, 2012; Godlewski, 2007).

Prior studies show several explanations of bank risk-taking: corporate governance mechanisms, inadequate bank regulation, market competition, and adverse regulatory environment. However, much interest is in how the various indicators of corporate governance practices affect a firm's risk-taking. Extant literature shows that managers' choice behaviours are influenced by their perceived gains or losses in the problem

framing process (Godlewski, 2007; Abdel-Khalik, 2014). When faced with a strong prospect of achieving their goals, they prefer conservative or less risky options to ensure goal attainments; however, managers are likely to take greater risk options when faced with unfavorable circumstances so that they can minimize the expected loss (Goldlewski, 2014; Shen & Chih, 2005). Corporate governance plays a role in controlling the risk-taking behaviours of a firm since it abates irrational managerial behaviours (Mahmood, Shah & Farah, 2017). Studies show that weakened governance operations within corporations tend to cause excessive risk-taking and poor firm performance. Moreover, Abor's (2007) study shows that board independence cushions the firm against uncertainties by minimizing the disagreement between the managers and the owners by aligning managerial behaviours with owners' interests. Therefore, this research makes reference to the Prospect theory to explain the association between corporate governance and risk taking

2.4.4 Stewardship Theory

The key argument of this theory lies in the fact that managers' interests may be aligned with owners'. If this holds, then the governance devices adopted based on an agency theory perspective may be ineffective and not hold (Barney & Hansen, 1994). Given this, what works to govern and act as a motivator for the selfish and opportunistic manager may not have the same effect on a steward (Lee, 2003). According to Davis *et al.,* (1997) Stewardship theory is founded on a model and an idea which implies a significant relationship between organizational performance and a principal's pleasure, where a steward has a feeling of higher satisfaction in co-operative, pro-organizational behavior other than in motivation of self-service. As a result, a steward is able to overcome the trade-off by trusting that putting efforts towards company’s goals, combined ends fulfill personal desires. Strengthening

governance systems are fit for the stewardship theorists' model of man. As a result, control demotivates stewards and discourages pro-organizational behavior.

The difference between Agency and Stewardship theory is cushioned in the belief that the latter theory supports the idea that the managers are focused on acting and taking on activities that favour a corporation’s goals while on the other hand, Agency theory suggests that managers are focused on activities that satisfy their interests. Stewardship theory emphasizes on higher-order wants like as success and self-actualization, whereas agency theory focuses on extrinsic rewards that address lower-level needs such as salary and security. According to stewardship theory, top level executives come to see the organization a part of them over time. Rather of using the company to further their own goals, the executives are more concerned with ensuring the company's survival and prosperity. As a result, the board's relationship with top management is one of principle and stewardship, rather than principal and agent ("hired hand").

An investor with investments that are diverse may not necessarily be cautious about the risk-taking levels within the firm rather, such an investor prefers that the top management team takes on the unique risk though, the returns must be justified by such an action. Because executives cannot readily leave their employment while the company is experiencing some difficulty, they are more concerned with a barely sufficient return and the company's continuous survival. As a result, stewardship theory contends that, in many cases, top management is more concerned with a company's long-term performance than are more short-term-focused stockholders (Monks & Minnow, 2004). Studies have yielded varied findings depending on the focus of empirical studies as to the assumption of managers being supposedly viewed

as either agents or stewards, in the process of trying to justify their stand in authenticating a single ideal strategy in corporate governance. Davis *et al.,* (1997) adds that, researchers are still debating on the situation and psychology aspects that underpin the aforesaid models of man that is, the agent and the steward

2.5 Empirical Review

This section presents a comprehensive analysis of previous research studies stressing the context, measurement of variables, and findings.

2.5.1 Corporate Governance and Bank Risk-Taking

According to Jensen and Meckling (1976), Agency theory limit risk taking tendency among agents to either risk aversion (preference for lower-risk alternatives at the expense of returns) or neutrality (preference for options where there is the compensation of risk) which acts as a deterrent to excessive risk-taking. Moreover, regulators have pressure to reform in order to control risk-taking in banks (Basel Committee on Banking Supervision, 2014). Further, research findings have shown that effective governance within firms leads to corporate strategies and decisions that are fairly risky (Jiraporn, Chatjuthamard, Tong & Kim, 2015).

Though theoretical assumptions have led to an extensive stream of research to establish the real effect of corporate governance on risk-taking, the findings are inconclusive (Srivastav & Hagendorff, 2016; John, Litov & Yeung, 2008; Nguyen, 2011; Eling & Marek, 2014; Huang & Wang, 2015; Koerniadi, Krishnamurti & Tourani-Rad, 2014; Beltratti & Stulz 2012; Lestari, 2018).

Alfiero and Venuti (2016) researched the nature and consequences of corporate governance on risk taking in the Eurozone insurance industry based on three hundred

and ninety six (396) observations drawn from One hundred and twenty six (126) insurance firms from the twenty seven (27) European Union (EU) Countries. Risk taking was measured by the log of the ratio of total assets to total net equity. At the same time, corporate governance indicators were ownership concentration, BOD compensation, the board size, gender diversity, board nationality, and publicly traded vs. privately traded company. Findings from this research were that corporate governance had a positive and significant effect on risk-taking; therefore, suggesting that insurance companies should maximum control on corporate governance variables to stimulate a good and positive risk-taking culture.

Findings of a study done by Koirala, Marshall, Neupane and Thapa (2020) on corporate governance reform (GCR) and risk-taking and confirmation by a quasi-natural experiment in a developing economy show that stricter GCR has a positive effect on corporate risk-taking.

Using a sample of manufacturing companies from 39 countries covering the period 1992 to 2002, John, Litov and Yeung (2008) examined the effect of corporate governance on risk-taking. The results indicate positively significant association between corporate governance and risk-taking. Risk-taking was measured as a score based on firm, industry, and country-level, while insider dominance measured corporate governance.

A study was done by Eling & Marek (2014) on corporate governance and risk-taking in the United Kingdom and German insurance markets; corporate governance found that corporate governance positively and significantly affected risk-taking among insurance companies in the UK and German markets. Data were drawn from 307 firms (35 companies) between the years 1997 and 2010. The findings further show

that corporate governance is negatively related to risk-taking, supporting the notion that stringent monitoring limits risk-taking.

Nguyen (2011) found that the corporate governance system negatively affected risk-taking in a study on corporate governance and risk-taking among Japanese organizations. The research sampled 9174 firm-year observations. Total risk was used as a proxy for risk-taking, which was measured by the standard deviation of the firm's monthly stock return while ownership concentration represented corporate governance and was estimated by cumulated share ownership by largest five stockholders (SH5) and a log-transformed Herfindahl index.

In a study done by Hunjra, Hanif, Mehmood and Nguyen (2020), corporate governance had a negative impact on risk-taking among 116 listed banks operating in ten Asian emerging economies from 2010 to 2018. Corporate governance was measured by board size, board independence, and block holders, while Z score measured risk-taking. Further, the study results pointed to the diversification having a significant effect on banks' risk-taking.

In a study done in the UK by Elamer *et al.,* (2018), the findings showed that corporate governance is negatively related to risk-taking. The measures of corporate governance were board size, board meetings, board independence, and audit committee size. Further, risk-taking was measured by Z score. With focus on this research, all listed insurance firms’ panel data, which were 350 in total, were considered over the period 2005-2014.

Mamatzakis, Zhang & Wang (2017) carried out a study with the aim of finding out how mechanisms of corporate governance affected risk taking among banks taking in

to consideration 43 Asian banks over 2006 -2014. Using Z score as a measure of risk-taking and independent directors, the board size, CEO duality, foreign ownership, managerial holding and audit firm to proxy corporate governance, findings showed that strong corporate governance negatively affected bank risk-taking.

In the study of Lestari (2018), who conducted a study among listed Indonesian banks to provide an analysis of the effect of corporate governance, bank capital reserve, and NPLs on bank risk-taking, corporate governance did not to some degree affect risk-taking. The study was conducted from 2009 to 2016 using risk-weighted assets portfolio as a measure for risk-taking and ownership concentration, board structure variables (board size and outside directorship), audit committee, and state/foreign ownership to indicate corporate governance.

Beltratti & Stulz (2012) find no backing for analyses that point to the critical role of governance in risk-taking. In their study on the credit crisis around the globe considering the period July 2007 to December 2008, shareholder-friendly board and block ownership were used as proxies for corporate governance while Z score measured risk-taking.

2.5.1.1 Board Independence and Bank Risk-Taking

Independent directors are a cornerstone of modern corporate governance since they possess good skills that give outside directors a competitive edge over inside directors when making decisions (Kor & Misangyi, 2008). Hence, the role of independent directors cannot be assumed as these executive board members take up the oversight function and ensure that the top management of an organization is monitored with the aim of attaining shareholder's expectations. In addition, independent directors can counter bad decisions of the CEO, for instance, bad decision-making regarding

optimal risk (Lunck *et al.*, 2008). The presence of non-executive members of the board is critical in tackling the agency (Hermalin & Weisbach, 2003). In a study done by Fama (1980) and Fama and Jensen (1983), director independence is more often upheld since adequate oversight role over the management of a firm is key as they have the desire to ensure their reputation as experts in monitoring is not in jeopardy.

De Vita and Luo (2018) conducted research that sought to analyze the association between regulations in the external environment and features of the board to find answers on the importance of regulation in bank risk-taking covering 2001 to 2015. Board independence was measured as the ratio of independent directors who are part of the board while three indices of bank risk-taking, insolvency risk as a proxy for Z score, non-performing loans to represent credit risk, and volatility of stock returns volatility of equity return were employed. The study findings indicate a positively significant relationship between board independence and bank risk-taking.

Further, Olson *et al.*, (2018) carried out a study to investigate the link between stock ownership by CEO, stock option compensation, and risk-taking. The study was carried out among 3,109 companies and 5,803 CEOs for the years 1993 to 2013. To measure risk-taking, the standard deviations of ROA and ROE were employed to specifically cover income stream risk, and the number of outside directors measured board independence. Findings showed a positive and significant influence of board independence on bank risk-taking.

In the study of Fakhrunnas and Ramly (2017), covering the effect of the board members on risk-taking characteristic of Islamic banks in South East Asia, the finding indicates a significantly positive effect of board independence on risk-taking. The study period covered the years 2009-2014 on a sample of 24 Islamic banks. Z score

was employed in bank risk-taking measurement, and the number of non-executive board members indicated board independence.

Elamer *et al.,* (2018) in their study done in the UK on the impact of impact of internal corporate governance mechanisms on insurance companies' risk-taking. The period under study was 2005-2014 using a panel of all listed insurance firms. The findings show a statistically insignificant and negative relationship between board independence and firm risk-taking. Z score was used to measure firm risk-taking, while corporate governance indicators were board size, board meetings, board independence, and audit committee size. Board independence was measured as the number of independent directors on board. Other findings in their study showed a significantly negative and relationship between board size, board meetings, and risk-taking.

The study of Hunjra *et al.,* (2020) in emerging Asian economies, whose aim was to find out the effect of diversification, corporate governance, and capital regulations on bank risk-taking, found that board independence significantly and negatively affected risk-taking. To measure risk-taking, Z score and non-performing loans were used loans (NPLs) ratio. Furthermore, corporate governance employed board size, CEO duality, board independence, and block holders as its measurement, and specifically, board independence was taken as the percentage of independent directors on board.

Research is done by Akbar *et al.,* (2017) focused on the association of board structure and corporate risk taking considering the United Kingdom financial sector using a panel dataset for every publicly listed firm The study took banks, insurance, real estate, and financial services companies for ten years (2003-2012). Findings indicate a negative and significant relationship between board independence and corporate risk-

taking, meaning that more independent boards took the less corporate risk. Board independence was taken as the number of independent directors divided by the board size, while Z-score is used as the indicator for firms' risk.

Cheng et *al.,* (2010), in their study on the relationship between compensation and risk-taking among finance firms for the period 1992 to 2008, find no effect of board independence on firm risk-taking. Risk-taking is measured as the beta of the firm's stocks, while independence of the board is represented by the ratio of independent directors to board size.

In Sri and Solimun (2019) study, findings indicate no relationship between board independence and firm risk-taking. The study's objective was to assess the effect of audit quality and risk-taking on value creation, focusing on the total population of firms listed on the Jakarta Stock Exchange, which have been actively in operation from 2004 to 2015. A total of 145 companies were studied, forming a panel of 1740. Risk-taking was measured as stock return standard deviation, while the independence of the board of directors was estimated as the sum of an independent board of directors.

2.5.1.2 Board Ownership and Bank Risk-Taking

Agency theory proposition supports giving equity to the managers and the board members as an effective way of mitigating problems caused by agency relationship by streamlining the interest of shareholders with those of the managers and the board (Jensen & Meckling, 1976; Eisenhardt, 1989). When those working within the firm possess a significant share ownership, then it should result in decision making processes that ensure maximum returns to the investors due to the alignment of incentives (Connelly *et al*., 2010). Additionally, managers who have equity ownership

in a firm tend to be risk-seeking since their goal is to maximize shareholder and firm values.

The role played by insider ownership is complicated in banks (Himmelberg *et al*., 1999). There are conflicting findings on the importance of insider ownership with agency theory suggesting the beneficial nature of such ownership to shareholders returns on investment as it aligns the interests of both the shareholders with those of the Directors. The researchers on the contradicting side put across competing argument emphasizing on the results of managerial entrenchment arising from insider ownership (McClelland *et al*., 2012). An increased case of insider ownership points to the likelihood that, powerful managers will increase their term in service driven by self-serving goals.

Increased transparency of board discussions, according to Van den Berghe and Levrau (2004), should improve the quality of corporate governance. Transparency, contrary to expectation, may alter the features of incentives for stock owning vs. non stock owning directors. Directors who own stock risk having their reputations tarnished if investors believe they are acting selfishly. Directors value their reputation highly (Srinivasan, 2005; Hunton & Rose, 2008), and the study predicts that when transparency is high, directors who own stock are more likely to disagree with the managers than incidences of lower transparency, since backing up managements' efforts to control earnings can be viewed as selfish decisions meant to was measured as the number of maximize personal wealth. Nonetheless, financial experts, may affect firms' policies beyond accurate disclosure and better audit committee performance. Rather than monitoring, directors spend a large amount of time providing advisory services (Adams & Ferreira, 2003).

Arouri *et al.*, (2014) researched to investigate the effect of board composition on risk-taking employing a sample of 270 firms over the period 2005 – 2010. Board ownership was measured as the percentage of the firm's equity that the executives on the board hold, while risk-taking was measured by Z score. Findings show a positive and significant relationship between board composition and risk-taking; higher executive equity ownership significantly increases a firm's total risk.

In a study done by Yeh (2017) to evaluate the association between corporate governance and default risk by considering 78 publicly listed banks in the Japanese region the findings revealed a positive and insignificant effect of board ownership on risk-taking. The results could be explained by the existence of a weak link in the director shareholder interest. Considering the 2007-2008 global financial crisis, Merton's distance to default (DD) was used to measure default risk, while Director stock ownership was estimated by the proportion of shares maintained by the Directors against the total ownership.

Findings of a study done by Nodeh *et al.*, (2015) indicate a negative and statistically significant effect of board ownership on risk-taking. Further, other board structure indicators had a positive effect on firm performance. The study's objective was to ascertain the function of the indicators of the structure of the board banks namely; board independence, board size, and concentrated ownership in the determination of financial performance and risk-taking level based on a sample of 37 Malaysian banks that are Islamic and conventional with 2005-2014 as reference points. The association between the elements of board structure and the risk-taking level with financial performance and pooled OLS was used to test for the relationship. Also, fixed-effects model, and generalized method of moments (GMM) were applied however, Barron

and Kenny's (1986) catered for the mediator role played by risk taking. This study employed Z score in measuring risk-taking and percentage stock ownership of the board against the total shares to measure board ownership.

Randøy and Goel (2003), in their study on ownership structure, founder leadership, and performance in Norwegian SMEs based on a sample of 68 small- and medium-sized enterprises (SMEs) publicly traded in Norway, found a negatively significant impact of board ownership on risk-taking and firm value for founder firms while a negative and insignificant effect for non-founder firms. The explanation could be that firms that are led by the founders could make use of low agency costs attached to them to utilize their board and inside personnel for strategic purposes. These competencies could be employed to access essential resources excluding the downside risk of incurring agency costs. Risk-taking was measured as the debt of total assets, while board plus insider ownership is the fraction of all shares possessed or controlled (through direct representation) among the CEO and board members.

Employing three hundred (300) sample banking institutions and logit regression model, Simpson and Gleason (1999) investigated the impact of board structure and ownership on financial distress (measured by bank's risk-taking) in banking firms. Board ownership was measured as the percentage equity ownership of all officers and directors as a group, while risk-taking was measured using a Likert scale of the chances that taking certain levels of risk could end up in a firm's financial distress. From the study findings, the association between board ownership, measured as the ratio of stock held by the firm's directors, and the forthcoming chances of financial distress is insignificant. Additionally, findings give an indication that the joint ownership of stock by the directors and officers and CEO's personal equity ownership

showed no effect on risk taking. Further, financial distress in the future is not affected by inside directors sitting in the board.

The study of Hayes *et al*., (2005) sought to assess the connection between the fraction of equity that directors hold an firm performance. Considering a sample size of 500 firms covering the duration 1997 to 1998, findings demonstrate a significantly positive association relating to the number of shares non- executive directors appointed to offer their services in the Finance and Investment committee and those serving in the strategy committee (excluding all other committees) hold and the performance of the firm. Moreover, the percentage of equity held by the CEO and Return on Assets show a positive and significant relationship.

Non-stock-owning directors, on the other hand, have distinct incentives as a result of increasing board openness. When information lands to the public relating to serious boardroom fights, share prices are frequently impacted negatively (Agrawal & Chen, 2011). In the study of Bhagat, Bolton, and Romano (2008), they contend that in the event that the board has equity ownership, then alignment of interest of shareholders with theirs become imminent .In the light of the aforesaid, effective and efficient monitoring role of the directors and enhanced oversight of key decisions of the firm is assured. Bhagat and Tookes (2012) in their research find that voluntary stake- holding by non- executive directors relates positively with performance in future while compulsory shareholding show no relationship with future performance.

Latham and Braun (2009) in their study findings indicate that greater managerial ownership in firms that record poor performance tend to decrease general firm's expenses in R&D at a high rate as compared to organizations with lesser amount of equity ownership. Füss, Rottke, and Zietz (2011) discovered that real estate

investment where managers are equity-incentivized is less likely to raise risks when measured by debt rate. Tobin's Q and CEO ownership have a negative relationship, according to Kim and Lu (2011). These papers imply that managers who own business shares have fewer options for risk diversification. As a result, these executives are less likely than well-diversified outside stockholders to take on risky ventures.

Directors' independence is greatly influenced by stock ownership in that as much as the interests of the shareholders could be aligned with those of the directors; it poses a possible threat of misalignment of the interests of directors and the CEO. Experimental studies done in the past have shown that board members with experience operating within a corporation are subject to reasoning that is focused and motivated. Directors could engage in choices that serve their welfares at the cost of investor's. Rather, directors try to get rid of necessary restatements to reserve their reputations (Hunton & Rose, 2008). The findings of the study found that stock ownership incentivized directors to fulfill their selfish interests. Further, board decisions could change the characteristic of the self-interested CEOs subject to board decisions transparency.

2.5.1.3 Board Financial Expertise and Bank Risk-Taking

Generally, companies prefer to have more financial experts on the corporate board, which calls for an increase in board financial expertise in line with the Sarbanes-Oxley Act (SOX) of 2002. Expertise is described as "skillfulness resulting from the possession of specialized knowledge." It's graded on a set of criteria that assesses a person's ability to complete a task. Calpers' (1997), Blue Ribbon Commission's (1998), SOX's (2002), and the New York Stock Exchange's (NYSE) (2004) corporate

governance reports all provide certain recommendations for board member expertise. Since the 1990s, these reports have been released in reaction to a number of accounting scandals, including Enron, WorldCom, and the 2007-2008 financial crisis. The importance of financial competence of directors in completing their fundamental duty of overseeing a firm's financial performance is also highlighted in reports. A financial expert can be described as someone with unique expertise in finance or accounting areas or rather, has experience in the area of supervision as SOX (Section 407), describes. The previous study has been replicated by DeFond *et al*., (2005) and Krishnan and Visvanathan (2008) in describing a financial expert.

Johnson *et al*., (1996) categorize a board's role into three; control, services, and resource dependence. Under the control role, directors monitor the managers as the shareholders' trustees (Fama, 1980; Jensen, 1993), and Boone *et al*., (2007) term the role as the "monitoring hypothesis." Lorsch and MacIver (1989) state that service roles entail directors to counsel and advice the CEO, and as per Mintzberg (1983), it is one of the prevailing functions that the directors perform. The resource dependence role views the board as an open channel to facilitate management to access critical resources (Pfeffer & Salancik, 1978). These three explicit roles of the board are not mutually exclusive and are reinforced by financial expertise. The presence of board members with financial expertise have an increased likelihood in performing a critical analysis on the financial reporting of a firm and provision of advice to the management on a firm’s financial declaration strategy. With inclusion of financial experts in the boardroom, the existing and potential shareholders and creditors are convinced of a firm’s efficiency hence making it easier to access finances.

The financial background represents a key feature of an individual's experience base. Hence, a vital pointer of the skill caliber and cognition that an executive member delivers on board. Managers possessing varied financial qualifications vary in their attitudes, know-how, and viewpoints, making diverse risk-taking decisions. Financial background is a lens through which business conditions are seen and indicates how strategic decisions are made (Khanna, 2007). Financial background is a crucial indicator of the directors' skills and knowledge on board (Rajagopalan & Datta, 1996). Also, Walsh (1988) posits that it helps in processing of information, influence skills (Geletkanycz & Black, 2001), and impacts decisions regarding risk-taking. In addition, board members with prior bank experience and financial expertise can better gauge bank policies' effect on risk-taking (Srivastav, 2015).

Harris & Raviv (2008) posit that financial expertise is essential to understand the complex workings the policy on risks of an organization notwithstanding. Varied number of studies (Hau & Thum, 2015; Minton, Taillard & Williamson, 2014) and policy reviews (Kirkpatrick, 2009; Walker, 2009) posit that a majority of board members operating within banks had insufficient financial experts who could recognize and control risk exposures associated with banks in the period before the crisis. Study done by Hau and Thum (2015) indicate that banks in Germany where board members in supervisory committee did not have expertise in finance incurred huge losses in the latest financial crisis. Hence, financial reporting, monitoring and offer of informed advice at board members' level is commensurate with a certain level of directors' experience in finance that goes beyond the knowledge that is acquired at firm level. This is especially significant given that one of the most fundamental functions of corporate governance is to ensure that businesses avoid bankruptcy and continue to operate as "going concerns" (Darrat et al., 2015). This

further shows that financial intelligence at the board level is vital in technically sophisticated and highly regulated industries like banking (Kim et al., 2014).Minton, Taillard, and Williamson (2014) used different samples drawn from 182 banks for the year 2003, 119 banks for the year 2008, and 206 banks for the year 2005 to study the effect of board financial expertise on risk-taking. The results showed a positive relationship between financial expertise and risk-taking among the selected US banks. The study attributes the findings to the fact that financial expertise enables board members to weigh risky policies that favor risk-taking. In this study, financial expertise is based on five indicators: Whether a board member; once was employed in an executive office within a bank (was once an executive in bank institution), is an executive office holder in a thrift financial institution (executive within a thrift financial institution), is a holder of a position that is related to finance (Chief Financial Officer; CFO, an accountant, a treasurer, a deputy to a finance officer of a firm not financial in nature, an executive in finance of non- financial firm), is a holder of certificates in academia in finance field (i.e. professors in the financial, accounts or economic field) or an individual employed in a hedge fund institution, or venture capitalist (investors considered professionals). Risk measurement is founded on a yearly average total risk calculated based on the standard deviation of stock returns recorded daily commencing the year 2004 to 2008.

Research done by Güner, Malmendier and Tate (2008) sought to assess the role of financial experts on boards and if board members with financial expertise exercise a noteworthy role in corporate decision- making such as risk-taking and, if so, whether these financial experts serve shareholders' interests. This study employed sample data of companies that are traded publicly for 14 years (1988 up to 2001) for 282 companies. Findings indicate that financial experts positively and significantly affect

corporate risk decisions (for instance, risk-taking financial and investment policies) within firms on whose board they serve. Further, Financial experts accounted for 18% of the change in corporate decision-making. Hence, the findings propose that caution should be exercised when considering the financial experts' board since there is an increasing quest for having these members on board.

Isa and Lee (2020) carried out a study to examine Shariah committee's effect in banks with Islamic foundation on risk taking behaviour and performance using fifteen Islamic banks to represent the whole population whose origin is Malaysia from 2007 to 2016. Board financial expertise was measured as the proportion of directors with finance/banking expertise, the measures taken in to account when calculating risk taking were three, which are the non-performing loans ratio, Z score, and portfolio risk. Results show that board members possessing finance/banking qualifications relate positively and significantly to risk-taking. In addition, finance/ banking knowledge was positively related with the sample Islamic banks' financial performance hence pointing to the regulator's role of setting standards regarding the composition of the Shariah committee to include expert diversity relates to the business of banking.

García-Sánchez, García-Meca, and Cuadrado-Ballesteros (2017) examined the relationship between financial experts and risk-taking (insolvency risk) in the banking sector. The study used a sample of 159 banks drawn from different countries and 2004–2010. Insolvency risk is represented by Z-Score, while financial expertise is expressed as a financial expert on board. The findings show a negative and significant effect of financial expertise on risk-taking. The presence of financial experts on audit committees reduces insolvency risk, supporting the monitoring advantage hypothesis

of financial expertise. Additionally, the study suggests that the relationship is strengthened when the banking sector regulation is weak and in banks with more robust policies unsupportive oft unethical practices.

A study by Hau and Thum (2009) examined the biographical background of 592 supervisory board members in the 29 largest banks found that higher financial expertise is associated with lower risk-taking stating the dissimilar features in the finance and management familiarity of board representatives across private and state-owned banks. The relationship between financial expertise and risk-taking was negative and significant. The findings further show that state ownership weakens governance; hence, in cases where state ownership cannot be avoided, supervisory boards' financial competencies should be strengthened, and instead of putting in board members with political connections, the government should focus on appointing and delegating financial experts to the supervisory boards. In this study, board financial expertise was based on six research questions, whether board member has; banking experience as a banker, skills in the financial markets, experience in financial market after 1990, similar bank experience in financial market, United States experience in financial market, and United States of America financial market experience after 1990.

Ittner and Keusch (2015) undertook research to evaluate how board risk oversight, responsibilities and practices affected maturity of the firm's risk management processes and risk-taking using 297 publicly traded firms headquartered in 28 countries. Financial expertise (Financial Education) was measured as the fraction of directors who have a Master of Business Administration (MBA) degree and a degree or certification in finance or accounting while risk-taking used stock return volatility(

measures the standard deviation of daily stock returns during the year following the survey response) Idiosyncratic Volatility (the standard deviation of the residual from a market model of daily returns data for the year following the survey response) and Tail Risk (calculated as the negative of the average return over the 5% lowest daily stock returns of the year) as its measure. From the findings, board financial expertise had no significant direct effect on risk-taking.

Similarly, Berger *et al*., (2012) and Grable *et al*., (2009) found out that high board financial background is associated with higher risk-taking. Previous studies also considered the relationship between financial background and risk to be either positive (Bertrand & Schoar, 2003; Grable, 2000) or negative (Graham & Harvey, 2001). An empirical study done by Godard and Schatt (2000) established that the financial background improves the firm's performance in terms of risk-taking. Minton, Taillard, and Williamson (2010) indicated that a board of directors in possession of financial expertise was linked to greater risk-taking and increased firm value, particularly in large banks using a broad sample of US financial institutions from year 2001 to year 2008.

2.5.1.4 Board Meeting Frequency and Bank Risk-Taking

The effectiveness of a board of directors could be indicated by board meetings and frequency thereof (Conger *et al*., 1998; Vafeas, 1999; Lipton & Lorsch, 1992). Although the time set aside for holding board meetings by different organizations differ, Vafeas (1999) establishes the various advantages and disadvantages meeting frequency accrued by a firm and is estimated as the number of times board meetings are held. Meeting by the board relates to various costs which include managerial time, transport expenditure and director’s meeting fees. On the other hand, several benefits

are attached to board meetings such as more time for directors to convene, come up with strategies and monitoring of management. Hence, dedicating adequate time is key in ensuring that benefits of more meetings outweigh the attached costs.

Frequent meetings held by the board are crucial since they offer a solution to coping with the challenges which a firm sometimes experiences. Vafeas (1999) and Ntim (2009) in their research found the more frequent the board held its meetings, the more effective the management and the quality of supervision resulting in positive effect on performance of businesses. Mangena and Tauringana (2008) indicated that meeting by board members can provide managers with an opportunity to understand the challenges facing their firms and aid in urgent solutions required to solve the upcoming challenges. Organizations that are capable of setting a suitable frequency of board meetings could minimize associated costs and experience maximization of economic effectiveness (Vafeas, 1999).

In the study of Conger *et al*., (1998), the indication is that the importance of board meetings cannot be assumed when adding value to the effectiveness of the board. In addition, this research explored the possibility of spill- over effect of previous board meetings on the firm performance of subsequent period. The operational strategies for organizations in the short- run and in the long- run are established during the board meetings. Enough time should be allocated to board members to put across their strategies and ideas during such meetings hence, giving a chance to the members to determine the extent that results will be borne by the firm in the coming periods (Vafeas, 1999).

Nevertheless, emphasis is on utilization of available time within the board room (Conger *et al*., 1998). This argument is based on optimization of board meeting time

when it comes to deliberation of outstanding issues, resulting in improved monitoring and organizational performance (Carcello *et al*., 2002). Additionally, Lipton and Lorsch (1992) opine that maintaining the frequency and duration of meetings leads to their success and improves board oversight undertakings. The argument lies in taking in the suitable and sufficient team representing the diligence of the board in implementation of its activities therefore, emphasizing its effectiveness

A key indicator for establishing the strength and efficacy of corporate functions involving to monitor and discipline is the board meeting frequency (Jensen, 1993; Vefeas, 1999). Conversely, De Andres and Vallelado (2008) propose that these conventions could offer board of directors with that chance of coming together to discuss and further provide a platform for exchanging ideas on monitoring managers and setting the strategies of the bank. Therefore, the more the meetings are held frequently, the nearer the control over managers resulting in the relevance of the advisory role of the board. Besides, banking business is characterized by complexities therefore, the relevance of information adds to the importance the advisory role of the board more so during strained market conditions. Board meeting frequency needs to ensure a well- timed and detailed review of banks' strategies and risk profile and further, discussion of any corrective action that could be deemed important for the board to effectively perform its role. Again, with the prevailing extremities in market conditions, it is expected that more frequent board meetings could be important in guaranteeing quick feedback of the board tom the prevailing market conditions hence the expectation that such meetings lead to reduced tail and systemic risk.

Younas *et al.,* (2019) did a study to find the effect that the composition of the board and their features have on excessive firm risk taking among German and United

States of America (USA) listed firms. The sample data was based on Thomson Reuters DataStream and the sample of data was composed of five hundred and sixty four (564) United States listed corporations and fifty seven (57) German companies within areas of manufacturing, utility and industrial sectors for the period 2004 to 2015. Further, fixed and random effects regression modelling was applied in trying to establish the corporate governance- risk – taking relationship. The standard deviation of daily stock returns measured risk taking as the annual number of meetings by members of board indicated the board activity. Based on the results, board activity showed a positively significant effect on risk taking.

Eling and Marek (2014) conducted study in the United Kingdom and Germany to determine the impact of aspects related to corporate governance (such as compensation, monitoring, and ownership structure) on risk taking. Data was drawn from an unbalanced panel set which were three hundred and seven (307) for the period 1997 – 2010 producing one hundred and eighty five (185) observations from the insurance firms in Germany and one hundred and twenty two (122) United Kingdom insurance institutions which were considered for further analysis. In the measurement of financial risk, the natural logarithm of total investments to total shareholder equity was used and to measure the frequency of meetings by the board members, the number times board members in the supervisory committee held their meetings per year was considered. The effect of board meeting frequency on risk taking of insurance firms was significant and positive as indicated by the research findings.

Abate Zeleke (2014) carried out research with the intention of finding establishing the how corporate governance mechanisms influences the management of risk within

Ethiopian commercial banks based on a panel of nine commercial banks in Ethiopia for the period 2005 to 2011. Risk taking was measured by credit risk and liquidity risk while annual number of board meetings measured board activity. There was a negatively significant influence of board activity on risk taking from the study findings.

Research done by Ayadi and Boujèlbène (2012) comprising of thirty European commercial banks to establish the impact of board of directors' attributes and the compensation of the person in charge of risk taking. The period under study was from 2004 to 2019 (six years). Z score was employed in measuring risk taking; annual number of meetings held by board members provided the measurement for board meeting frequency. The findings of the study indicate that the association between board activity and insolvency was negative and statistically significant supporting the need for frequent board meetings as a way of curbing excessive risk taking among firms. The outcome of this analysis further show that the impact of compensation of the leader on insolvency risk and the effect of accumulation of the functions of the CEO and chairperson in one man on insolvency risk both yielded negative and statistically significant relationships.

In a study done by (Elamer *et al.,* 2018) in the United Kingdom (UK) to evaluate the extent to which internal corporate governance instruments influence risk taking of insurance companies found that, there was a negative and significant relationship between board meeting frequency and risk taking pointing to the fact that board meetings that were focused reduced risk taking hence the importance for such frequent meetings. This study employed a panel data set of all listed insurance firms

for the years ranging from 2005 tom 2015. Risk taking measure was Z score while board meetings were quantified as the annual number of board meetings.

In a study done by Isa & Lee (2020) which sought to find out the effect of Shariah committee in Islamic banks on bank risk taking behaviour and performance showed that board meeting frequency and risk taking had no relationship. The study took in to consideration 15 Malaysian Islamic banks for the period ranging from 2007 to 2016. The measurement for board activity was the number of board meetings were held annually while three measures of risk were taken in to account viz; non-performing loan ratio, Z score and portfolio risk. From the findings of the study, board meeting frequency has no relationship with risk taking. Moreover, board meeting frequency also showed no association with performance of the Islamic banks that formed the sample for the study. This study's implication points to the role played by the regulator in setting standards that relate to the number of meetings held by the board and the roles they play during such meetings in order to have access to maximum benefits in relation to the value of the shareholders and firm performance.

In the study of Chaudhary (2020) on the association between board structure, activities, institutional investors and risk taking, findings indicate that stock return volatility is influenced by institutional investors and precisely investors who are not sensitive to (pressure- insensitive (PI) investors). Further, non-linear relationship between stock return volatility and institutional investors exists within Indian firms. For the period 2011 tom 2019, the firms operating outside financial sector and forming part of the NSE- 500 index were considered for the study where board activity was taken as the approximate annual number of board meetings attended in different committees where board members held positions in the organization and the

average number of director positions in other firms other than the ones in consideration. To measure firm risk taking, annual stock return volatility is taken with findings showing that the is no significant impact of board activity on risk taking within firms among Indian firms

2.6 CEO Power, Corporate Governance and Bank Risk-Taking

Corporate governance studies show that CEO power affects a firm's corporate governance mechanisms (Hermalin & Weisbach, 1998; Adams, Almeida, & Ferreira, 2005). Normally, most empirical studies capture power of the CEO by utilizing the number of positions that a CEO holds (particularly, if the CEO is also the board chairman or otherwise), the tenure of a CEO, or performance compared to others in a similar position (Lacker *et al.,* 2007). In any circumstance, board independence is hindered by powerful CEO's if they influence the decision making process of the board hence preventing the board from efficiency in monitoring function. In one study, Adams *et al*., (2005) indicate that organizations with CEOs that are have more power tend have variability in terms of performance insinuating that CEOs who are powerful tend to take on policies that support outcomes that are risky. This implies that powerful CEOs tend to impact board decisions in a direction that encourages riskier policies.

Pathan and Skully (2010) argue that CEO power can be advantageous or a disadvantage to a bank. The bank with high monitoring costs may benefit from the all-knowing CEO of a complex firm. However, they also argue that the roles should be separated to ensure board independence and that the CEO receives no extra benefits. According to Larcker *et al.,* (2007), CEO power indicates weak corporate governance and reduces the board's independence. Faleye and Krishnan (2010)

examined the relationship between BHCs boards of directors and their borrowers. They found that increasing the size of the board or the CEO's power increases the bank's risk; that is, their borrowers' credit ratings go down. According to ElSaid & Davidson, 2009; Davidson *et al.*, 2008), there are many factors that influence the source of CEO and board power among them; whether the new CEO is a named heir, whether the preceding CEO was compelled to step down, and whether the successor CEO comes from within or outside the company. The extent of power of the CEO is evidenced by his dominance. In a statement made by Brockmann *et al.*, (2004) it shows that two types of executive power are in existence: first, there is the formal power which comes about as a result of the CEO acting as the chairman of the Board of Directors, and informal power which is in reference with the prestige, social status, and network upheld between the CEO and other associates.

On the area of CEO power and bank risk-taking, in accordance with agency theory, the clash between the investors and managers may be brought about by bank managers who always prefer lower risks. In the contrary, shareholders of a bank have a preference for excessive risk with the aim of increasing their returns from asset creation. (Pathan, 2009) argues that, the wealth belonging to bank managers is composed of a portfolio of tangible, financial assets, and human capital. According to May (1995) hence, the investors have the leeway of diversifying their portfolio risk in the capital market Therefore, the management of a form tend to safeguard the human capital in their possession by taking on projects that are considered safe or engaging in diversity in investments that are only done at the firm level (May, 1995).

Nonetheless, Chief Executive Officers (CEOs) who have higher levels of company level decision making authority could also have the power to influence the investors

and board members, demonstrating high levels of CEO power which affects their risk taking behaviour directly. The findings of a research done by Pathan (2009) using a sample of two hundred and twelve (212) USA banks that are considered large shows evidence that the ability of CEOs' to control decisions made by the board, an indicator of CEO power, affected risk taking by banks significantly and negatively therefore upholding the notion of existence of agency conflicts. In the case where CEOs are powerful, lower risks are taken by the firm. (May. 1995; Pathan, 2009; Mollah & Liljblom, 2016). However, as in individualistic societies, managers tend to be overly optimistic, underestimate uncertainty, and engage in risky ventures (Chui *et al*., 2010; Li *et al*., 2013; Breuer *et al*., 2014), it appears credible that individualism reduces the negative association existent between CEO power and risk taking among banks.

Evidence reveals that in the United States, smaller and boards with fewer restrictions positively connect to bank risk-taking and adversely associated with CEO power (Pathan, 2009). The idea for a negative link between CEO authority and risk aversion is based on CEO risk aversion. The belief that larger corporations have larger boards of directors is a proxy for the 'too big to fail' problem, which leads to banks taking on more risk. Large boards, on the other hand, may have the resources and technical knowledge (in the form of a dedicated risk board) to effectively analyze the risk of bank activities. The risk-averse manager's viewpoint extends to remuneration concerns as well.

Pathan (2009) posits that when the management is affixed to a given pay, they tend to lack the motivation to take on risks. Also, Prestige and reputation may sometimes be the main focus of the CEO. Nonetheless, other reasons motivating risk taking apart from the aforementioned exist which may include the monitoring aspect of the board

of directors. Hypothetically, to accomplish the monitoring role, the board members require the ideal skill, time and environmental conditions. Studies done by (Ferris, Jagannathan & Pritchard, 2003; Harris & Shimizu, 2004) argue that directors who are busy may not find the requisite time in their disposal to check over the firm's activities while aged board members may not have the motivation and strength needed to carry on the oversight role therefore, having lesser board meetings could deter their capacity to practice oversight role over the activities of a company. Findings of research studies by Torres and Augusto (2017) show that experiential learning theory (ELT) could yield varied views relating to expertise of busy board members. Moreover, old persons tend to tolerate lower levels of risk since they exhibit outstanding knowledge and expertise unlike their younger counterparts (Grable, McGill & Britt, 2009; Sahm, 2007).

Adams *et al*., (2005) also examine the relationship between CEO power and stock return variability; they find a positive association. Their study, however, ignores Bank Holding Companies (BHCs). Pathan (2009) finds that CEO power decreases the BHC's risk. Thus, there is no consensus in the literature.

In a study done by (David *et al.,*1999*)* with an aim of determining the effect of corporate governance, CEO attributes and risk taking among banks findings indicate that the separating ownership and control has led to possible misunderstanding and conflicting interests between agents and principals. This conflict of interest is more The conflicts are severe in risk- taking decisions among banks due to the long term nature of banking business coupled with extensive uncertainties.

The study findings of (Gils *et al*., 2008) reveal that as tenure is prolonged, CEOs tend to become more powerful hence gaining the confidence of the shareholders and other

stakeholders. The CEOs end up becoming committed to the psychological paradigm that previously produced results and reduce the sources of information. Furthermore, they gain bravery and tend to become less motivated to enact changes within and without the firm's operational environment leading to the notion that a CEO with longer tenure tend to become slow in terms of knowledge, growth and development (Audia *et al*., 2000).

Ghosh *et al*., (2007) studies how board diligence affected risk taking among Indian firms found an ever increasing relationship between insider ownership and bank risk taking. In this study, a piece wise linear regression of investment on insider ownership is estimated estimating break points of 7% and 38% found in the value-ownership relation. Further, results indicate that the R&D investment level increases with increase in insider ownership up to 7%, and it reduces when insider ownership increases from 7% to 38%, with no effect of insider ownership beyond 38%.

Most studies have argued that combining the positions of CEO and board chairman in one person distorts the monitoring ability of a board's effectiveness (Lehn & Zhao, 2006). In the event that the CEO also chairs the board, both the making of decisions and monitoring of the same is the responsibility of one and the same person, then the CEO is deemed powerful enough to exert dominance on the board hence challenging board independence and the ability to efficiently monitor and discipline the management. Therefore, such a dominant CEO gives leeway to the managers to accept without difficulty the projects supported by the CEO even if they are not aligned with shareholder's interests. Hence, in order to enhance the independence of the board, separation of duties between being a CEO and board chairman is recommended. Also, separation of the duties facilitates Commitment in R&D

investment, limits opportunistic behaviour of managers leading to better firm performance in the future.

2.7 Control Variables

The study controlled for firm age and firm size to isolate the effect of the predictor variable on risk taking. Large and old firms prove to be more productive than small and younger ones and as firms grow old, they stabilize in their processes, resource acquisition, market power and routines which may affect risk taking and ultimately performance (Wales, Patel & Lumpkin, 2013).

2.7.1 Firm Age and Risk Taking

Empirical literature on the firm age and risk taking shows mixed findings. Some studies find positive relationship (Su, Wan & Song, 2018: Lee 2020), others find negative relationship (Yung & Chen, 2018): Li & Tang, 2010: Lee, Chae & Lee, 2018) while others find no relationship (Muslih and Marbun, 2020).

A study by Li and Tang (2010) that considered a sample of CEOs of 2,790 manufacturing Chinese firm reported a positively significant relationship between firm age and risk taking. Firm age was measured as for the period

In a study done to examine the relationship among pyramidal layers and risk taking among local state- owned enterprises (SOEs) in China, firm age and risk-taking are significantly and positively related (Su, Wan & Song, 2018). Data sample was drawn from all enterprises that are owned by state in Shanghai and Shenzhen Stock Exchange markets for the period 2004 tom 2012 with firm age measured as natural logarithms of years of operation plus 1.

In a study done by Lee (2020) on firm age and risk taking among Taiwanese property and liability Insurance firms found a positive and significant effect of firm age on risk taking. Data was collected from fifteen property and liability insurance firms for the period 2001 to 2014 giving a total of 210 firm- year observations. Firm age was measured as the number of years since an insurer was established.

Lee, Chae and Lee (2018) studied how firm age was related risk taking among manufacturing companies listed on the Korea Exchange (KRX). Data sample was taken for the period 1995 and 2014. Firm age was measured as the natural logarithm of firm age. The findings show a negative and significant relationship between firm age and risk taking.

In the study of Li and Tang, (2010) in their study on firm age and risk taking find a negative and significant effect of firm age on risk taking. Considering data for the period August to October 2000 among Chinese entrepreneurs funded by the Chinese government, firm age was measured as the number of years the firm has been operating since its foundation up to the year 2000.

Yung and Chen (2018) in their study on firm age and risk taking among all firms on compustat between the year 1980 and 2014 excluding depository receipts in China establish a significantly negative connection between firm age and risk taking. Firm age was measured as the natural logarithm of one plus the number of years since public listing.

Muslih and Marbun, (2020) in their study on how risk management, firm age and firm size impact performance of banking companies registered in Indonesian stock exchange for the period 2013 to 2018 found no significant effect of firm age on risk

taking and performance. To form the sample, data was collected datastream and worldscope and firm age was measured as the natural logarithm of the number of years a firm has been in operation.

2.7.2 Firm Size and Risk Taking

The too big to fail hypothesis has been used to describe the effect of firm size and risk-taking (Stern & Feldman, 2004; Moosa, 2010). Big banks may consider themselves, and be perceived by others, to be "too big to fail" owing to their systemic significance hence, have the expectation that the government will bail them out in the incidence that they find themselves in financial distress. In view of this, they may take excessive levels of risk. Theoretical and empirical reinforcement regarding either positive or negative association between bank size and risk exists.

Bhagat, Bolton and Lu (2015) investigated the association between firm size and risk-taking among financial institutions during the period of 2002 to 2012 and find firm size is positively correlated with measures of risk-taking. Firm size was measured as total assets as a binary of too big to fail banks.

Rahman, Zheng and Ashraf (2015) in their study on bank size and risk taking in Bangladesh assessed the relationship between firm size and risk taking using a sample of 30 Bangladeshi banks for the period 2008-2012. Using the natural logarithm of annual bank's total assets as a measure of bank size, findings show negative and significant relationship between firm size and bank risk taking that implying that large banks hold lower amount of capital and take higher level of risk.

Ferris, Javakhadze and Rajkovic, (2019) in their study on firm age and risk taking find negative and significant relationship between firm size and risk taking among listed

firms around the world. Data was collected for 12,000 sample firms from BoardEx data, Datastream and Worldscope for the period 1999 to 2012. Firm size was measured as the natural logarithm of the total assets of a firm.

In a research done by (Su, Wan & Song, 2018), firm size proxied by the natural log of total assets of a firm, yielded significant and negative relationship between firm size and risk taking. The research was done among listed local state – owned Enterprises (SOEs) in the Shanghai and Shenzhen Markets in China for the period 2004 to 2012.

Ebrahimi *et al.*,(2018) in their study find no significant effect of firm size on risk taking. The study was done among manufacturing firms listed in Indonesian Stock Exchange (ISE) for the period ranging from 2013 to 2016. The sample size was composed of 32 samples drawn from a population of 138 firms that met the set criteria. Board size was measured as total assets of a company.

2.8 Conceptual Framework

Based on theoretical and literature review, the study develops a conceptual framework which is a diagrammatical presentation of the interaction between independent variables (board independence, board ownership, board financial expertise and board meeting frequency), moderator (CEO power) and dependent variable (risk –taking).

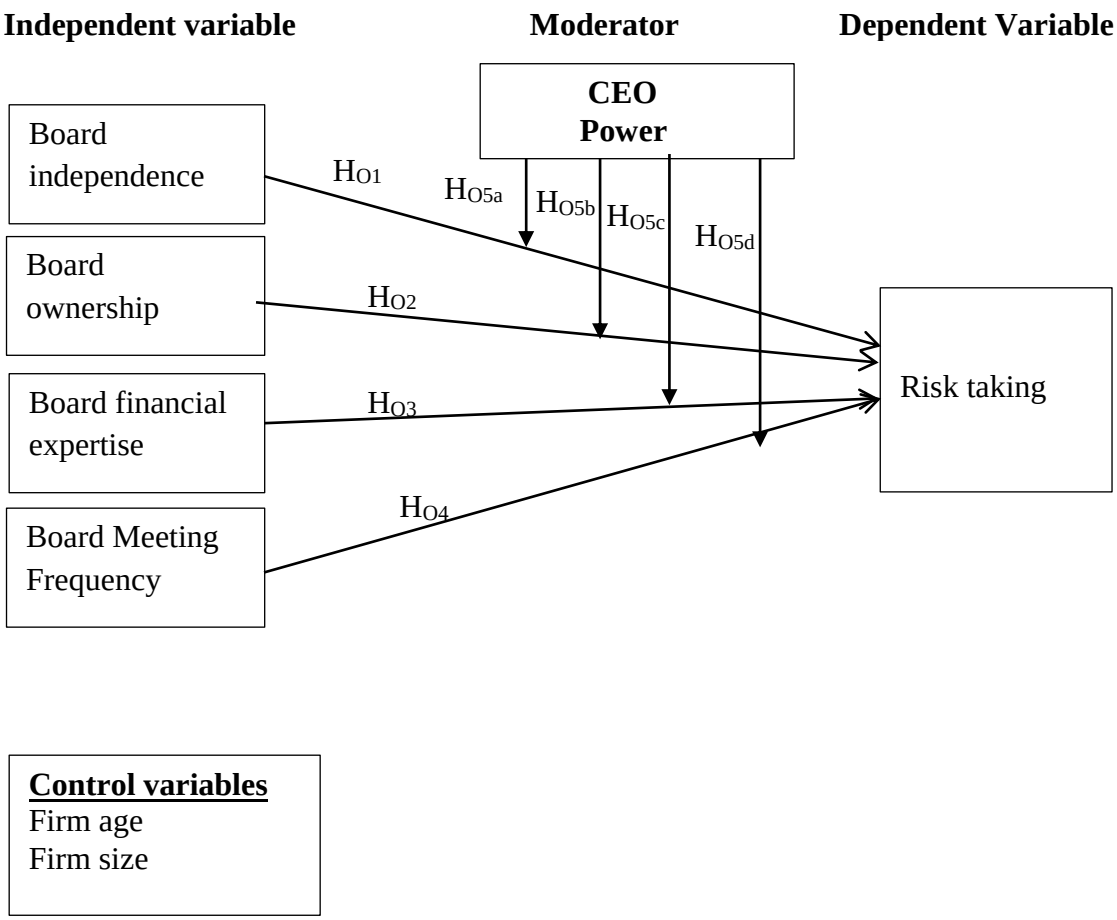

Figure 2.1: Conceptual Framework

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This section explains the study paradigm, research design, target population, data collection methods, and data analysis technique.

3.2 Research Paradigm

A research paradigm is a philosophical assumption, belief or an idea through which underlying social phenomena is established (Mugenda & Mugenda, 2012). According to Saunders, Lewis and Thornhill (2015), Philosophy in research entails the beliefs and assumptions that dictate how people view the world. According to Saunders, Lewis and Thornhill (2015) research philosophy can be described as the basis of knowledge, and the characteristic of the said knowledge comprises of crucial assumptions regarding how researchers view the world. Research paradigms are classified as either post-positivism, positivism, interpretivism or pragmatism (Sefotho, 2015). Proponents of positivism believe in scientific investigation of research problems and that reality is to be studied, captured, understood and approximated (Guba, 1990; Rahi, 2017). Post positivists on the other hand, argue that there is imperfection in reality and that truth is just a probability and not obvious hence no need for experimentation or hypothesis testing on observations (Kivunja & Kuyini, 2017). Therefore, post positivism allows for observations without experimentation or formulation of hypotheses. Additionally, pragmatism holds that there is a reasonable and logical way of doing things or of thinking about problems that is; a practical way of dealing with specific situations instead of scientific inquiries and application of theories (Kivunja & Kuyini, 2017). Rahi (2017), add that according to pragmatists, the problem is more important than the methodology. The Interpretivism paradigm is

grounded on having a deeper understanding of a concept and coming up with a subjective meaning towards an object (Kivunja & Kuyini, 2017). As a result, interpretivists think that true knowledge can only be gained by a thorough understanding of the subject (Rahi, 2017).

This study entails establishing causal relationship between variables using quantitative techniques upon which generalizations can be made. Furthermore, theoretical foundations form the basis on which hypotheses are derived and quantitative data and methods are used for logic and evidence testing among the variables of interest. Based on the nature of this study, this study grounded on positivism research paradigm is deemed suitable since it adopts scientific methods to conduct research. Further, the paradigm uses a reductionist approach where the ideas are reduced into small, discrete and numeric sets to enable testing using hypotheses (Mack, 2010). Moreover, positivist view of a deductive approach whereby quantifiable observations lead to statistical analyses and focuses on uncovering truth and presenting it by empirical means (Crowther & Lancaster, 2008; Henning, Van Rensburg & Smit, 2004). The positivism paradigm also allows for the application of highly structured methodology that enables replication of research studies (Creswell, 2009; Gill & Johnson 2002).

3.3 Research Design

The criteria used to evaluate business research is referred to as research design; it provides a platform for gathering and analyzing data (Bryman & Bell, 2007). This study adopted both explanatory and longitudinal research design. An explanatory design assists in finding out factors that affect a given phenomenon by explaining or clarifying a problem in the form of causal relationships. This design gives the

researcher a chance to revisit a problem with the aim of building, elaborating, extending or testing a theory by identifying important variables in the problem under consideration quantitatively (Cohen *et al.,* 2015). According to Taris (2000), a longitudinal research design is a framework that entails the measurement of every subject or experimental unit (or observation) on numerous occasions over a time period. In this study, data is collected for 36 banks from 2008 to 2018.

3.4 Target Population

The population that was targeted comprised of Kenyan commercial banks that had been registered by the CBK for the years 2008 – 2018. Central Bank of Kenya reports indicate that the country had fourty two commercial banks that were registered and a single Mortgage firm documented as a bank considering the period 2008 to 2018. Nevertheless, application of inclusion and exclusion criteria left thirty six banks as eligible for carrying out analysis. The basis to be included or excluded depended on if the bank was fully operational in conducting the banking business for the entire study period, data availability of the banks and the banks that did not undergo major reorganizational changes that impair their financial reporting. CBK's annual financial reports and individual banks' financial reports confirmed whether a bank had undergone major reorganizations.

3.5 Data Types and Sources

The study used quantitative data mainly drawn from secondary sources. The source of data for this research involved extraction of relevant figures from individual banks' annual audited financial reports and CBK banks' annual supervisory reports. Data analysis involves analyzing data that had previously been gathered separately by someone for an alternative principal use with the advantage that making use of the

existing data gives a feasible alternative for scholars with restricted time and resources at their disposal, need opportunity for longitudinal analysis and need for reanalysis which may offer new interpretations (Johnston, 2014).

3.6 Measurement of Variables

Measurement involves attaching a quantifiable unit to an observation. In this case, corporate governance, CEO power and risk taking all assumed a numeric value for their constructs to enable further analysis.

3.6.1 Dependent Variable

Risk taking is the outcome variable and was estimated using default risk as it is the measure commonly applied in risk taking studies since it measures the distance from insolvency that a bank is (Laeven & Levine, 2008). Considered a good measure of default risk, Z shows the frequency of standard deviations that banks' returns on assets have to fall below the values expected for equity to be depleted (Kuranchie-Pong, Bokpin & Andoh, 2016). Extensive literature (Das, 2012; Erkens *et al.*,; Belratti & Stultz, 2012), have used Z-score as a measure of default risk.

$$Z - score = \frac{ROA+E/A}{\sigma ROA}$$

Where; ROA and E/A are returns on asset and capital to asset ratio calculated as the mean over three years (rolling standard deviation –the present year and the past two years), and σ(ROA) is the standard deviation of return on assets, calculated over a similar time window (Laeven and Levine, 2009; Houston, Lin, Lin, & Ma, 2010). Additionally, zscore underwent transformation to arrive at its natural logarithm owing to its skewness in nature (Bley, Saad & Samet, 2019).

3.6.1.1 Board Independence (BI)

Board independence is the fraction of non-executive directors in relation to the board size (Nor, Nawawi & Salin, 2017). The fraction of non- executive directors represented board independence.

$$BI = \frac{NED}{BS}$$

Where: NED is number of non-executive directors; BS is board size (Ma and Tian, 2009; Simpson and Gleason 1999; Taillard and Williamson, 2012)

3.6.1.2 Board Ownership (BO)

Board ownership refers to the percentage stock ownership by inside directors (Ozbek & Boyd, 2020). Board ownership is expressed as directors' shareholding relative to total number of outstanding shares.

$$BO = \frac{DS}{TS}$$

Where: DS is directors' shares; TS is total shares (Simpson and Gleason, 1999)

3.6.1.3 Board Financial Expertise (BFE)

Board financial expertise refers to experience from past employment in accounting or finance, essential certificate in accounting profession or other comparable financial background or experience (Asogwa, Ofoegbu & Modum, 2020). Financial expertise among board members was measured by board members possessing a financial background to board size.

$$BFE = \frac{FE}{BS}$$

Where: FB is financial background of directors (academic, professional or work experience); BS is board size (Taillard and Williamson, 2012; Aebi. *et al.*, 2011)

3.6.1.4 Board meeting frequency (BMF)

Board meeting frequency denotes how many times board members hod their meetings per year. The frequency of board meeting is measured by the logarithm of the actual annual number of meetings held (Vafeas, 1999; Ma & Tian; 2009; Chen *et al*., 2006)

$$BMF = Annual\ number\ of\ board\ meetings$$

3.6.2 Moderating Variable (CEO Power)

Barron and Kenny (1986), a moderator is a variable that has an effect on the strength and/or direction of the association between a resultant and predictor variable.

Various studies have given several measures for CEO power. According to Hambrick (1981) and Mintzberg (1983) there are three sources of CEO power which includes structural power, ownership power and expert power. Finkelstein (1992) further identifies four sources of CEO power namely: Ownership, expert, structural and prestige. Since prestige power, as compared to other measures, lacks a proximal measure prior studies exclude it in measurements including the other dimensions (Han, Nanda & Silveri, 2016; Tang ***et al.,*** 2011). This study extended previous measures of CEO power (Voordeckers, Gils & Heuvel, 2007) to encompass CEO tenure, CEO experience, and CEO age and then measured a composite index of CEO power based on tenure, experience, age. This study used real values to indicate CEO tenure, experience and age with the code of CEO power '1' if the observation is above the sample median and '0' otherwise (Lisic *et al*., 2011). Then, the values of all the indicator variables were summed up to create a CEO power index to measure overall

CEO power. Since CEO power index equals the sum of each of the indicator variables considered, the value thus ranges from 0 to 3 with a higher value indicating greater CEO power and vice versa.

3.6.3 Firm Size and Firm Age (Control Variables)

Some variables were controlled for in this study. Firm size was calculated by natural logarithm of total assets to account for the fact that bigger organizations have many branches and bigger networks of branch offices hence difficult to manage (Eriki, 2015). The proxy for firm age was the natural logarithm of the number of years a firm has been in operation since registration considering 2008 and 2018 as the reference point (Laeven *et al.*, 2014).

Table 3.1: Measurement of Variables

Variables	Symbols	Measurement		Empirical Studies
Risk-taking	RT	Default risk	RT=Z-score=(ROA+E/A)/σ(ROA)	Erkens *et al.*, (2012), Belratti and Stulz, (2012), IMF, (2014)
Board independence	BI	Number of non- executive directors to board size	BI = NED/BS	Ma S and Tian G., (2009), Simpson W. and Gleason A. (1999) Taillard J. and Williamson R. (2012)
Board ownership	BO	Number of shares held by directors to total shares	BO = DS/TS	Simpson W. and Gleason A. (1999)
Board financial expertise	BFE	Number of members with financial background to board size	BFE = FB/BS	Taillard J. and Williamson R. (2012), Aebi V. *et al.*, (2011)
Board meeting frequency	BMF	Number of meetings held per year	BMF = BMF/YR	Vafeas N. (1999), Ma S. and Tian G. (2009), Chen *et al.*,(2006)
CEO power	CP	index of CEO power based on tenure, experience, age	code of CEO power '1' if the observation is above the sample median and '0' otherwise)	Gupta, (2018)
Firm Age	FA	Natural logarithm of the number of years a bank has been in operation since registration by CBK	FA=lnYears of operation	Eriki (2015)
Firm Size	FS	natural log of total assets	FS=lnTA	Laeven *et al* (2014)

3.7 Regression Assumptions and Diagnostic Tests

3.7.1 Multicollinearity

According to Gujarati (2003), multicollinearity implies that a perfect or precise linear relationship exists among particular or the total number of explanatory variables within a regression model. When some or all of predictor variables have a high correlation leading to some model problems more so, in getting to understand the

importance of the particular independent variables in the regression model, then multicollinearity is deemed to be present.

In this study, the correlation matrix of independent variables where, the coefficient of correlation between two explanatory variables must not exceed 0.8 and variance inflation factor (VIF) should be less than 10 in quantifying the extent of multicollinearity in OLS analysis. As a general rule, the VIF of an indicator must be less than 10 for the research to assume that multicollinearity has no effect on the outputs of the regression model. In case of presence of multicollinearity, highly correlated predictors will be removed.

3.7.2 Heteroscedasticity

Whenever an error term lacks a variance that is not constant, then heteroscedasticity is said to occur. Heteroscedasticity can be described as the variation in the errors that lack a constant variance (Brooks 2008). Alternatively, the assumption of heteroscedasticity could be experienced when the variance of the error terms are different across observations. It is vital to test for this assumption as Gujarati (2003) cautions that the presence of heteroscedasticity could lead to incorrect standard errors; thus, the resultant interpretations made could be deceptive. The violation of these assumptions of the classical OLS leads to estimates that are unbiased and consistent but inefficient. This study used the White's test for homoscedasticity test to test for heteroskedasticity where the null hypothesis states that the error term is homoscedastic. For heteroscedasticity to be confirmed, $p>0.05$. In cases where heteroscedasticity is confirmed, the model is rebuilt by adding new predictors.

3.7.3 Normality Test

The normality assumption states that prediction mistakes are distributed uniformly. In view of Park (2002), to check for null hypotheses and to ensure that data was drawn from a population that is normally distributed, the Skewness-Kurtosis, Shapiro Wilk, Shapiro-Francia tests, in addition to QQ plot of residuals and Jarcque-Bera (JB) statistics are often used. Park (2008) defines skewness as the extent to which a distribution is asymmetrical. Hence, a data set with values greater than zero is skewed to the right suggesting that more observations fall on the left side and vice versa. Likewise, Kurtosis is based on the fourth central moment and is described as the degree to which variables are concentrated around a data distribution (Martínez *et al.*, 2021) hence; it approximates how thin the tail of distribution is. Shapiro and Wilk (1965) also proposed the Shapiro-Wilk as another test for normal distribution of a series with emphasis of basis on the ratio of the best estimator of the variance to the usual corrected sum of squares estimator of the variance. This test was further improved by Shapiro and Wilk (1972) and Royston (1983) to Shapiro-Francia W test, which approximates normality by modifying the Shapiro-Wilk W.

This study used Jacque –Bera test to test for normality since in comparison with other measures, this test estimates distributions characterized by medium to long tails and it also accommodates skewness that is slight among distributions which contain long tails. Jacque-Bera test calculates the coefficients of skewness and kurtosis of OLS residuals (Gujarti and Porter, 2010). As a rule of thumb, a normally distributed variable has a skewness of zero and kurtosis of 3. In case of violation of this assumption, studies check for outliers and remove them.

3.7.4 Autocorrelation

If residuals are correlated when a variable is regressed on one or more variables; if this is the case, the regression is said to be serially correlated. The calculated coefficients of the regression may be linear, unbiased, consistent, and asymptotically normally distributed in the presence of serial correlation, but they are inefficient. They don't have a minimal variance, in other words. This study tested for the presence of autocorrelation using the Wooldridge test for autocorrelation. Typically, in the event that there is detection of serial correlation, adjustment of the lag order could be used to ensure that the final lag takes in to account sequential correlation as a whole in the residuals to ensure that a minimum variance exists.

3.7.5 Linearity

Linear regression analyses are based on the assumption of linearity. Deviation from this assumption is usually accommodated through variable transformation. The log transformation is the commonly used transformation technique. Similarly, basic examination of scatterplots could be an important non-statistical technique of evaluating if there is non- linear relationship. It is expected that all the transformed variables will be linear. To ensure that the assumption of linearity holds, all the independent variables were log transformed. Besides, the dependent variable was measured in its natural logarithm (Ekwaru, & Veugelers, 2018).

3.7.6 Stationarity

As stated by Gujarati (2005), the assumption that the variables are stationary or non-dependent of time is used in the estimation and testing of hypotheses using time series data. The value of the covariance between the two time periods depends only on the gap between the two time periods, not the actual time at which the actual time is

derived, thus the series is considered to be stationary if its mean and variance are constant across time. Non-stationarity can greatly affect the behavior and characteristics of the series, so that the tests about the regression parameters fail to be validated (Sarbapriya, 2012). Non-stationarity leads to spurious results and biased estimated coefficients.

Stationarity of the data will be tested using Levin-Lin-Chu, Harris, Tzavalis and Breitung tests for unit root. For instance, Levin-lin-Chu test and Breitung test work well in observations that lie between 10 and 250 with time ranging between 5 and 250 years only that Breeitung excludes deterministic terms (Baltagi, Bresson & Pirotte, 2007). On the other hand, Harris and Tzavalis test statistics are applied even for shorter periods of time and larger values of servations (Harris, R. D., & Tzavalis, E. (1999). Hence, the three tests are applied together since they complement each other.

3.8 Data Analysis and Presentation

Data analysis is a process which involves bringing reasonable sequence, coming up with a model and attachment of meaning to the data collected. The raw data collected was cleaned (removal of outliers) then fitted to the indicators they represent using the chosen formula. Then, data was analysed using descriptive (mean, standard deviation, minimum and maximum) and inferential statistics (correlation and hierarchical regression). Hypotheses were tested and the probability values and beta coefficients interpreted the findings.

3.8.1 Descriptive Statistics

To give comparisons and contrasts, descriptive statistical procedures such as cross-tabulations and frequency distributions was used. Descriptive analysis described the frequency and percentage of the sample Variables in the form of tables and written

explanations as well as central tendency measurements of constructs that include mean and standard deviation, minimum, maximum.

3.8.2 Regression Analysis

The researcher used panel regression techniques. Panel data, according to Vong et al., (2009), are often utilized because they provide more information because they are inclusive of information that captures both cross-sectional (which captures individual variability) and time series (which captures dynamic adjustment). Models in panel regression recognize features that are common among groups while, similarly, takes in to account the heterogeneity of distinct units. Furthermore, numerous data points are employed in panel data modeling, which increases the degrees of freedom. Collinearity among explanatory variables is also minimized, resulting in increased economic estimation efficiency.

3.8.3 Testing for the moderating effect

To test for moderation, hierarchical moderated linear regression was used. In this method, variables are entered each at a time with correlation of Y, the criterion variable with the current set of the independent variables estimated and evaluated. Leech *et al.,* (2011) states that the choice of this method is guided by the premise that the prediction of the independent variables, a moderator, and interactions of the independent variables and a moderator will improve the prediction. At each stage, the calculated R2 indicates the change in variance taken in to account by Y with the addition of a new predictor.

The first block consisted of the control variables, followed by controls and the independent variables. The third model consisted of the controls, independents and the moderator while the fourth consisted of the addition of the first interaction term.

The fifth, sixth and seventh models have in addition of the aforementioned variables, the addition of the second, and third and fourth interaction terms respectively. Moderation was tested by checking the significance of the interaction terms and was further supported when the addition of the interaction term provided a significant change in variance (R2) associated with board independence, board ownership, board financial expertise and board meeting frequency, on the dependent variable beyond the variance accounted for by the main effects (Cohen *et al*., 2015)

3.9 Model Specification

Hierarchical regression model was used to examine whether CEO power showed a moderating effect on association between corporate governance and bank risk taking. The initial model estimated the effect of control variables on risk taking. The second model tested for effect of corporate governance on risk taking while the third, fourth, fifth, sixth and seventh model tested for the effect of CEO power on the link between corporate governance and risk taking.

$$y_{it} = \beta_{0it} + \beta_{1it} fa_{it} + \beta_{2it} fs_{it} + \varepsilon_1 \quad (1)$$

$$y_{it} = \beta_{0it} + \beta_{1it} fa_{it} + \beta_{2it} fs_{it} + \beta_{3it} bi_{it} + \beta_{4it} bo_{it} + \beta_{5it} bfe_{it} + \beta_{6it} bmf_{it} + \varepsilon_i \quad (2)$$

$$y_{it} = \beta_{0it} + \beta_{1it} fa_{it} + \beta_{2it} fs_{it} + \beta_{3it} bi_{it} + \beta_{4it} bo_{it} + \beta_{5it} bfe_{it} + \beta_{6it} bmf_{it} + \beta_7 CP_{it} + \varepsilon_3 \quad (3)$$

$$y_{it} = \beta_{0it} + \beta_{1it} fa_{it} + \beta_{2it} fs_{it} + \beta_{3it} bi_{it} + \beta_{4it} bo_{it} + \beta_{5it} bfe_{it} + \beta_{6it} bmf_{it} + \beta_7 CP_{it} + \beta_{8a} bi_{it} * CP_{it} + \varepsilon_4 \quad (4)$$

$$y_{it} = \beta_{0it} + \beta_{1it} fa_{it} + \beta_{2it} fs_{it} + \beta_{3it} bi_{it} + \beta_{4it} bo_{it} + \beta_{5it} bfe_{it} + \beta_{6it} bmf_{it} + \beta_7 CP_{it} + \beta_{8a} bi_{it} * CP_{it} + \beta_{8b} bo_{it} * CP_{it} + \varepsilon_5 \quad (5)$$

$$y_{it} = \beta_{0it} + \beta_{1it} fa_{it} + \beta_{2it} fs_{it} + \beta_{3it} bi_{it} + \beta_{4it} bo_{it} + \beta_{5it} bfe_{it} + \beta_{6it} bmf_{it} + \beta_7 CP_{it} + \beta_{8a} bi_{it} * CP_{it} + \beta_{8b} bo_{it} * CP_{it} + \beta_{8c} bfe_{it} * CP + \varepsilon_6 \quad (6)$$

$$y_{it} = \beta_{0it} + \beta_{1it} fa_{it} + \beta_{2it} fs_{it} + \beta_{3it} bi_{it} + \beta_{4it} bo_{it} + \beta_{5it} bfe_{it} + \beta_{6it} bmf_{it} + \beta_7 CP_{it} + \beta_{8a} bi_{it} * CP_{it} + \beta_{8b} bo_{it} * CP_{it} + \beta_{8c} bfe_{it} * CP + \beta_{8d} bmf_{it} * CP_{it} + \varepsilon_7 \quad (7)$$

Where;

y = the measure of bank risk taking

β_0 = constant of the equation

fa = Firm age

fs = Firm size

bi = Board independence

bo = Board ownership

bfe = Board financial expertise

bmf = Board meeting frequency

CP = CEO power

ε = error term

3.10 Fixed and Random Effect

The fixed effect model or the random effect model can be used to estimate a panel data model.

3.10.1 Fixed Effect Model

The fixed effects model permits partial regression coefficients to be shared across cross-sectional units, but the regression model's intercepts are supposedly unique to individual bank. Fixed effects model is often employed when a study needs to control for missing variables that vary between individuals yet they are constant over time. The fixed effects model is a restricted version of the random effects model (in which the variance of the random effects is shrunk to zero). This may suggest that the random effects specification is preferable (since it is more general). The larger number of parameters in the random effect specification can however result in a loss of efficiency, particularly when the additional variability implied by these random effects is not supported by the data. Therefore, it is recommended to test the random effect against the fixed effect. Due to the nested structure of the two models this can be done via Hausman test.

3.10.2 Random Effect Model

The random effect model is grounded on the assumption that there exists a common mean value for intercepts the error term is a reflection of the cross-sectional differences in the intercept values of each bank. If some missing variables are constant over time but vary between individuals, while others are fixed between individuals but fluctuate over time, a random effects model can assist account for both types. Because the individual impact term might be a random outcome rather than a

set parameter, the random effects model is acceptable when data represents a sample instead of the whole population.

The key difference between the two cases lies in the individual effects that are non-observable and their effects encompasses correlated features with the regressors in the model, and not if these outcomes are non- stationary/ stochastic (Greene, 2008). The rationale behind the random effects model, according to Kohler and Kreuter (2005), is that, unlike the fixed effects model, variation between entities is believed to be random and uncorrelated with the predictor or independent variables in the model. The unobserved heterogeneity should not be correlated with the independent variables, which is a crucial assumption for using random-effect estimation.

3.10.3 Hausman Test

This is a robustness test meaning, it is the process of verifying correctness or degree to which a model can function properly in the presence or absence of invalid. Fixed and random effects models were estimated to determine the model that best suits the study. Both the fixed effects and random effects models are considered upgraded versions of the Ordinary Least Squares (OLS) where preference of one model over the other is based on Hausman test (Baltagi, 2001). Normally, the decision criteria is based on the test statistic giving (Prob>Chi2=0.0000) less than 0.05, random model is preferred otherwise fixed effect is preferred as the suitable model for regression analysis.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

Data analysis is presented in this chapter as well as the findings of the study based on the study objectives. The data was summarized and presented using tables. The collected data was analysed and interpreted in accordance with the objectives of the study. This research employed different statistical techniques aided by Stata to analyze the data. This chapter also describes the data analysis, presentation and interpretation of the findings. The findings relate to the objectives that guided the study.

4.2 Summary of Descriptive Statistics

Table 4.1 presents the raw summary descriptive statistics relating to research variables under study for the period 2008-2018.

The table indicates that z score had a mean of 1.922 (std. dev. =0.829; Minimum=-1.827; Maximum=3.617). Given that a high Z score suggests reduced risk and a low number indicates higher risk, it may be argued that the selected institutions take comparatively bigger risks. Furthermore, the large difference between the minimum and maximum number indicates significant variation in risk taking levels among institutions, with high standard deviation level. The mean board independence is 0.749 (standard deviation =0.114; Minimum=0.429; Maximum=1.429). This indicates that the firms have more independent board members hence the monitoring function is more effective.

The mean board ownership value is 7.635% (standard deviation =9.854; Minimum=0.001; Maximum=36.2). This shows that there is less board ownership in

the selected banks. Therefore, there is a high chance of agency problem as the interests of the board could be less aligned with those of shareholders. Further, there is a high variability in board ownership as shown by an elevated standard deviation.

The mean board financial expertise value is 0.459 (standard deviation =0.18; Minimum = 0.071; Maximum = 1.333). This shows that nearly half of board members are financial experts therefore, the board has the capacity to make risk related decisions and to monitor managers.

Board meeting frequency had a mean of 5.576 (standard deviation =1.812; Minimum=2.000; Maximum=9.000). The implication of these findings is that the members of the board held an approximate of six meetings annually. A large number of board meetings lead to effectiveness in internal controls. In addition, it gives a chance to the members of board in having an enhanced understanding of an organization and to assess the making of decisions that entail the risk taking of a firm.

Moreover, table 4.1 shows that CEO power had a mean of 1.970 (standard deviation =0.933; Minimum=1.000; Maximum=3.000) implying that CEO power is relative to the average. This means that the CEO may influence risk taking decisions.

The mean value of firm age is 3.425 with reference to years from 2008 to 2018 (standard deviation = 0.504; Minimum= 1.946; Maximum= 4.635). The implication is that some of the banks under study indicated existence for over 31 years (e^3.425)

The mean firm size is 10.513 considering the period 2008 to 2018 as the key points of reference (standard deviation = 1.326; Minimum = 21.507; Maximum = 27.156). This implies that on average, the banking institutions under study hold assets worth Ksh. 30.489 billion (e^24.141)

Table 4.1: Descriptive characteristics of Exogenous and Endogenous Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Z-SCORE	396	1.922	0.829	-1.827	3.617
BI	396	0.749	0.114	0.429	1.429
BO	396	7.636	9.854	0.001	36.200
BFE	396	0.459	0.190	0.071	1.333
BA	396	5.576	1.812	2.000	9.000
CP	396	1.970	0.933	1.000	3.000
FA	396	3.425	0.504	1.946	4.635
FS	396	24.141	1.326	21.507	27.156

Key; BI = Board Independence, BO = Board ownership, BFE = Board Financial Expertise, BMF = Board meeting frequency, CP = CEO Power
Source (Field data, 2020)

4.3 Regression Assumptions and Diagnostic Tests

Before the model was run, the sets of data had to be subjected to tests of the classical linear regression assumptions of a model. According to Brooks (2008), there exist five crucial assumptions to be fulfilled before making use of OLS estimation with the intention of validating hypotheses testing estimation of the coefficients. Following are the assumptions of the classical linear regression model including the diagnostic tests.

4.3.1 The Assumption Heteroscedasticity.

The assumption of Heteroscedasticity is founded on the belief that the variance of the errors is supposedly constant. To check this assumption White test is conducted for the model (See table 4.2). From the table, the model lacks heteroscedasticity challenge meaning that, the variance of the error term is constant as shown by an insignificant p- value (p-value is 0.1570 which is greater than 0.05). Accordingly, the null hypothesis failed to be rejected since the error variance is constant.

Table 4.2: White's Test for Homoscedasticity

White's test for Ho: homoscedasticity			
against Ha: unrestricted heteroskedasticity			
chi2(35) = 90.22			
Prob > chi2 = 0.1568			
Cameron & Trivedi's decomposition of IM-test			
Source	chi2	df	P
Heteroskedasticity	90.24	35	0.157
Skewness	16.71	7	0.001
Kurtosis	4.89	1	0.008
Total	**111.84**	**43**	**0.001**

Source (Field data, 2020)

4.3.2 Normality

To assess normality, Jarque-Bera Test was used; a lower p-value when compared with Chi (2) value concludes that the null hypothesis could not be rejected. Based on skewness and kurtosis, there was a normal distribution of the residuals. Table 4.3 shows that the p value of chi (2) is 0.357 whose value is larger than 0.05 denoting that the null hypothesis cannot be rejected. This implies that the violation of the normal distribution assumption is non- existent. The Null hypothesis (Ho) of Jarque-Bera test is expressed as “residuals of variables are normally distributed” While the alternative hypothesis (H0) posits that “residuals are not normally distributed”. Jarque-Bera test P-value yields a parameter of 0 .3818 which happens to be greater than 0.05. The implication of this is that it is insignificant hence, null hypothesis fails to be rejected; null hypothesis indicates that there is a normal distribution of the residuals.

Table 4.3: Jarque-Bera normality

Skewness/Kurtosis tests for Normality					**------- joint ------**	
Variable	**Obs**	**Pr(Skewness)**	**Pr(Kurtosis)**	**Adj**	**chi2(2)**	**Prob>chi2**
Myresiduals	396	0.361	0.272		2.060	0.357
Jarque-Bera normality test: 1.926 Chi (2) .3818						
Jarque-Bera test for Ho: normality:						

Source (Field data, 2020)

4.3.3 Unit Root Test

As stated by (Gujarati, 2004), time- series data achieves stationarity if the mean and variance associated with it is constant over a period of time. Hence, due to the limit set by the variance, the drift in the data series tend to play around its mean. The nature of the series could be stochastic (randomly determined) or deterministic (displaying a trend). Studenmund (2011) states that a non- stationary time–series or a random walk model is one in which the mean and variance persistently changes over time and contains a simple correlation coefficient between the *X* variable and its lagged variable which is affected by other factors other than exclusively the length of the lag between the two time periods. In the economic and finance fields, time related or seasonal shocks in single-time period may have a robust influence over subsequent period of time. The study applies Levin-Lin-Chu, Harris-Tzavalis and Breitung unit-root tests. The following hypothesis was considered for this test.

Levin-Lin-Chu unit-root test

Ho: Panels contain unit roots

Hopotheses:

Ha: Panels are stationary

Harris-Tzavalis unit-root test
Ho: Panels contain unit roots
Ha: Panels are stationary
Breitung unit-root test
Ho: All panels contain unit roots
Ha: Some panels are stationary

The *p*-values in table 4.4 presents rejection of the null hypothesis meaning that the data analyzed lacks unit root. The implication of this is that the variances and means

of the data are not dependent on time; therefore, the application of Ordinary Least Squares (OLS) can produce results with meaning (Gujarati, 2012).

Table 4.4: Unit Root Test

	Levin-Lin-Chu unit-root test		Harris-Tzavalis unit-root test		Breitung unit-root test	
	Statistic	**p-value**	**Rho**	**p-value**	**Statistics**	**p-value**
Zscore	-15.339	0.000	-13.069	0.000	-4.621	0.000
BI	-26.393	0.002	-15.658	0.000	-4.785	0.000
BO	-10.078	0.000	-14.911	0.000	-6.789	0.000
BFE	-13.689	0.000	-13.594	0.000	-5.352	0.000
BMF	-11.100	0.000	-11.477	0.000	-4.406	0.000
CP	-14.799	0.000	-21.212	0.000	-6.963	0.000
FS	-8.008	0.001	-6.877	0.000	-2.690	0.004
FA	-14.891	0.000	-9.496	0.000	-7.226	0.000

Source (Field data, 2020)

4.3.4 Autocorrelation

The degree of similarity between a particular time series and a lagged version of itself over subsequent time intervals is known as autocorrelation. (Makkhan *et al.,* 2020). Autocorrelation tests the association between the current values of a variable as compared to its previous values. Wooldridge test statistic is used to estimate autocorrelation in the residuals from a statistical regression analysis. The Wooldridge test statistic null hypothesis state that “no first –order autocorrelation”. According to the study results (Table 4.5), the Prob>F = 0.124 was more than 0.05 indicting Ho hypothesis is not rejected and that there was no first order. Therefore, the study findings express a non- significant auto correlated relationship between all the predictor variables and bank risk taking. The implication of the results is non-violation of the assumption of autocorrelation.

Table 4.5: Wooldridge Test for Autocorrelation

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F(1, 35) = 2.484
Prob > F = 0.124

Source (Field data, 2020)

4.3.5 Multicollinearity

When two or more explanatory variables in a regression model are significantly connected, this is referred to as multicollinearity. It's a situation in which independent variables have a high degree of correlation. It often happens in a multiple regression model in the event of high correlation existence between these independent variables prompting questionable assessments of the coefficients of regression. This causes strange outcomes when attempts are made to decide the extent to which explanatory variables describe the changes in the outcome variable (Creswell, 2014). Brooks (2008), states that in any realistic setting, a non- zero result between predictor variables in correlation test is expected, however, it will nearly always be non-harmful in the sense that there will almost always be a moderate degree of correlation between explanatory factors, but it will not cause too much concern. accuracy loss. Nevertheless, it becomes problematic when the predictor variables show a high level of correlation amongst themselves. The challenge in question is what is termed multicollinearity. Hence, it becomes critical to estimate multicollinearity. To test for multicollinearity, this study employed the coefficients of correlation and Variance Inflation Factor (VIF), which is consistent with the literature. (Ho & Wong 2001; Eng & Mak 2003; Cerbioni & Parbonetti 2007;; Haniffa & Cooke 2005; Haniffa & Cooke 2002).

The outcome of multicollinearity is expanded standard errors of evaluations of the Betas, which means diminished reliability quality and results that are misleading. The test of multicollinearity was employed to check if high degrees of correlation were present between single or multiple variables in the study with one or more of the other independent variables. The variance inflation factor (VIF) calculated the inflated variances due to linear dependence with other explanatory factors by measuring the correlation level between the predictor variables. A general rule is that VIFs of 10 or higher (conservatively over 5) points to severe multi-collinearity (Newbert, 2008). The results of the VIF test ranged between 1.21 and 2.54 (Table 4.6). It raises concern when the VIF value exceeds 10 when testing for multicollinearity and tolerance more than .20 (Dielman 2001; Gujarati 2003). As a result, from the standpoint of the VIF, there is no possible difficulty with this study. As a consequence of the diagnostic testing, it has been determined that there is no issue associated with multicollinearity.

Table 4.1: VIF test for Multicollinearity

Variable	VIF	SQRT VIF	Tolerance	R-Squared
BI	1.11	1.05	0.9021	0.0979
BO	1.25	1.12	0.7997	0.2003
BFE	1.14	1.07	0.8779	0.1221
BMF	1.43	1.19	0.7009	0.2991
CP	1.14	1.07	0.8798	0.1202
FS	1.67	1.29	0.5982	0.4018
FA	1.50	1.22	0.6680	0.3320
Mean VIF	**1.32**			

Source (Field data, 2020)

4.4 Correlation

The results of correlation are presented in table 4.7 in a summarized form. The correlation between distinct independent variables is examined because it could result in a high standard error, a low t-statistic, and unexpected changes in the signs or magnitudes of coefficients despite a high R-squared. Despite the fact that STATA

drops completely collinear independent variables during regression, multicollinearity may need to be investigated utilizing pair-wise correlation and Tolerance and Variance Inflation Factor (VIF) approaches. The independent variables' pair-wise correlation matrix reveals that there are no pairs of variables with extremely high collinearity (more than 0.80 in Table 4.7). The empirical model is designed so that the pairs are not used in the same equation for each version of the model by design; so that multicollinearity is not a problem.

Results in table 4.7 show that board independence is positively related with risk-taking ($r = 0.3315$, $p < 0.05$). Consequently the more the board is independent, the more likely a firm will take additional risks. Results further show that board ownership is negatively related with risk-taking ($r = -0.2360$, $p < 0.05$). Therefore, the higher the directors' ownership, the lower the risk-taking rate indicating that since directors have an interest in the company, they avoid exposing the firm to additional risks. Additionally, the correlation results indicate that board financial expertise is negatively related to risk-taking ($r = -0\ .4849$, $p < 0.05$). Thus, an increase of financial expertise of company's directors leads to a decrease in risk-taking. Further, board meeting frequency also show a positive relationship with risk-taking ($r = 0.6519$, $p < 0.05$). Thus, increase in directors' engagement in the daily running of the company results in an increased risk-taking level. The correlation results further indicate that CEO power is negatively related with risk-taking ($r = -0\ .3876$, $p < 0.05$). Therefore, increased levels of CEO's power lead to a decrease in risk-taking. Moreover, firm size ($r=0.5947$, $p<0.05$) and firm age ($r=0.4188$, $p<0.05$) are positively related with risk-taking meaning, the old and large firms are more likely to take higher risks.

Table 4.2: Correlation Results

	Z-SCORE	BI	BO	BFE	BMF	CP	FA	FS
Z-SCORE	1.0000							
BI	0.3315*	1.0000						
BO	-0.2360*	0.0302	1.0000					
BFE	-0.4849*	-0.2282*	0.0674	1.0000				
BMF	0.6519*	0.2123*	-0.2235*	-0.3273*	1.0000			
CP	-0.3876*	-0.1186*	-0.0327	0.1852*	-0.3477*	1.0000		
FA	0.4188*	0.2129*	0.0119	-0.1794*	0.2997*	-0.1384*	1.0000	
FS	0.5947*	0.1601*	-0.1926*	-0.2484*	0.4602*	-0.2497*	0.5035*	1.0000

Note: * 5% significance level

Source (Field data, 2020)

4.5 Test for the Control Variables effect on risk taking

The study had two control variable; firm age and firm size and the regression results for the fixed effect and the random effect are presented in table 4.8 and table 4.9 respectively.

Table 4. 3: Fixed Effect- Control Variables

Fixed-effects (within) regression	Number of obs	=	396
Group variable: firm id	Number of groups	=	36
R-sq: within = 0.3117	Obs per group: min	=	11
between = 0.5550	Avg	=	11.0
overall = 0.3486	Max	=	11
	F(2,358)	=	81.05
corr(u_i, Xb) = -0.6314	Prob > F	=	0.0000

Zscore	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
FA	.3898261	.0563732	6.92	0.000	.2789619	.5006903
FS	.4292047	.0548929	7.82	0.000	.3212516	.5371578
_cons	-2.529224	.2592038	-9.76	0.000	-3.038978	-2.019471
sigma_u	.21383664					
sigma_e	.28233132					
Rho	.36453421	(fraction of variance due to u_i)				

F test that all u_i=0: F(35, 358) = 3.28 Prob > F = 0.0000

Source (Field data, 2020)

Table 4.4. Random Effect- Control Variables

Random-effects GLS regression	Number of obs	=	396
Group variable: firmid	Number of groups	=	36
R-sq: within = 0.3005	Obs per group: min	=	11
between = 0.6193	Avg	=	11.0
overall = 0.3689	Max	=	11
	Wald chi2(2)	=	189.30
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0000

Zscore	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
FA	.1976051	.0424838	4.65	0.000	.1143383	.2808718
FS	.3873269	.041266	9.39	0.000	.3064471	.4682068
_cons	-1.682226	.1773765	-9.48	0.000	-2.029877	-1.334575
sigma_u	.09635233					
sigma_e	.28233132					
Rho	.1043182	(fraction of variance due to u_i)				

Source (Field data, 2020)

Based on the results of the Hausman test (Prob>chi2 = 0.00) presented in Appendix iv, the regression results of the control variables are interpreted using the fixed effect model. Table 4.8 shows that firm age has a significant and positive effect on risk taking (β= 0.390, ρ<0.05), and the results contradict Li and Tang (2010). In the face of organizational inertia, decreasing performance and competition, aged companies look for fresh growth prospects, and managers are more ready to take risks. The results also show that firm size has a significant and positive effect on risk taking, and the findings are consistent with those of Li and Tang (2010), Audia and Greve (2006) posit that because large companies have greater resources, they tend to be more prone to take more risks than smaller companies. Furthermore, because large companies focus on more investment in R&D, they are more likely to take greater risks in order to acquire high-end and novel technology.

4.6 Testing the Effect of Corporate Governance on Risk Taking

4.6.1 Random Effect

The coefficients are estimated using the random effect model, which assumes that individual or group effects are uncorrelated with other independent variables. Table 4.10 provides an illustration of random model regression results. The random model indicated that board independence, board ownership, board financial expertise, board meeting frequency firm size and firm age explained 59.06% variation of risk-taking. Board independence showed a significantly positive effect on risk-taking (β= 0.879, ρ<0.05) (Table 4.10). A unit increment in board independence increases risk taking by 0.879 units.

Board ownership showed a negative and significant effect on risks-taking (β= -0.051, ρ<0.05). Therefore, a unit increase in board ownership leads to a 0.051 unit decrease in risk-taking. Additionally, board financial expertise showed a negative and significant impact on risk-taking (β= -0.476, ρ<0.05). Therefore, unitary increment in board financial expertise decreases risk-taking by 0.476 units.

Moreover, table 4.10 shows that board meeting frequency had a significant and positive effect on risk-taking (β= 0.760, ρ<0.05). Specifically, a unit increase in board meeting frequency leads to a 0.760 increase in risk-taking by the same unit.

Table 4.50 Random-Effects GLS Regression Model

Random-effects GLS regression		Number of obs	=	396
Group variable: firmid		Number of groups	=	36
R-sq: within = 0.5478		Obs per group: min	=	11
between = 0.7702		Avg	=	11.0
overall = 0.5906		Max	=	11
		Wald chi2(6)	=	519.52
corr(u_i, X) = 0 (assumed)		Prob > chi2	=	0.0000

Zscore	**Coef.**	**Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
FA	.129	.033	3.84	0.000	.063	.195
FS	.212	.034	6.17	0.000	.144	.279
BI	.878	.195	4.51	0.000	.497	1.261
BO	-.051	.013	-3.84	0.000	-.077	-.025
BFE	-.476	.067	-7.06	0.000	-.608	-.345
BMF	.760	.999	7.61	0.000	.564	.956
_cons	-1.282	.147	-8.71	0.000	-1.569	-.993
sigma_u	.053					
sigma_e	.216					
Rho	.056	(fraction of variance due to _i)				

Source (Field data, 2020)

4.6.2 Fixed Effect Model

Fixed effect model takes in to consideration the non- dependence of every bank or a cross-sectional unit incorporated within the sampled data giving room for to vary in each firm at the same time assuming that the coefficients' slope is stable inside the banks. Table 4.11 shows the regression results in relation to fixed effect model. The study findings showed that 37.71% variability in risk-taking is described by board independence, board ownership, board financial expertise, board meeting frequency, firm size and firm age. Board independence showed a significantly positive impact on risk taking (β= 0.5662, ρ<0.05) (Table 4.11). Precisely, a unitary change in board independence leads to a 0.566 unit change in risk-taking. Further, the relationship

between board ownership and risk taking is negative and significant (β= -0.379, ρ<0.05) (Table 4.11). Consequently, a unit increase in board ownership leads to a 0.379 decrease in risk-taking.

Furthermore, board financial expertise showed a negative and significant impact on risk-taking (β= -0.416, ρ<0.05). Consequently, increase of board financial expertise by one unit leads to a 0.416 decrease in risk-taking. In addition, board meeting frequency revealed a significant and positive impact on risk-taking (β= 0.904, ρ<0.05). Precisely, a unit increment in board meeting frequency leads to 0.904 unit increase in risk-taking.

Table 4.61: Fixed-Effects (within) Regression

Fixed-effects (within) regression	Number of obs	=	396		
Group variable: firmid	Number of groups	=	36		
R-sq: within = 0.6022	Obs per group: min	=	11		
between = 0.4912	Avg	=	11.0		
overall = 0.3771	Max	=	11		
	F(6,354)	=	89.33		
corr(u_i, Xb) = -0.8631	Prob > F	=	0.0000		

Zscore	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
FA	.264	.044	6.01	0.000	.178	.351
FS	.180	.045	4.02	0.000	.092	.268
BI	.566	.194	2.92	0.004	.185	.947
BO	-.379	.059	-6.47	0.000	-.494	-.264
BFE	-.416	.068	-6.12	0.000	-.550	-.283
BMF	.904	.107	8.43	0.000	.693	1.115
_cons	-1.709	.219	-7.81	0.000	-2.140	-1.280
sigma_u	.462					
sigma_e	.216					
Rho	.821	(fraction of variance due to u_i)				

F test that all u_i=0: F(35, 354) = 4.88 Prob > F = 0.0000

Source (Field data, 2020)

4.6.3 Hausman Test- Direct Effect

Fixed or random effects can be assessed using Hausman test in which the null hypothesis has a preference for random effects model compared to the fixed effects (see Greene, 2008). The null hypothesis is that unique mistakes (u i) are not linked with the regressors; the alternative hypothesis is that they are. The Hausman Specification test (Hausman, 1978) is carried out to make a selection that favours either fixed or random effect estimator. The null hypothesis approximates the panel data using random effect estimator, while the alternative is the fixed effect model which is the appropriate estimator. Rejecting the null (p-value < 0.05) is an indication that the fixed effect model is to be utilized.

Panel data modeling allows a researcher to use either the fixed effect models or random effect models when estimating the variables in relation to dependence, at the same time taking in to account the issue of omitted/ missing variables. To arrive at the decision of using either fixed effect or random effect models was arrived at based on the outcome of Hausman test (Table 4.12).

The Hausman test table 4.12 shows a summary of the results. It also shows the null hypothesis of “difference in coefficients not systematic” as well as determinants of risk-taking that should be rejected since the chi-square value of 125.18 was significant, p-value = 0.000. Therefore, the study’s hypotheses are tested using the fixed effects model.

4.7 Hierarchical Regression Model

The hypotheses for this study based its test on hierarchical regression analysis, where the models put in in successive blocks (4.12). Hence, Model I (which is the baseline

model) contains the control variables only which are; age of the firm (FA) and size of the firm (FS).

Model 2 entails, apart from the control variables, all other independent variables introduced in block, which are, the board independence (BI), board ownership (BO), board financial expertise (BFE) and board meeting frequency (BMF).

Model 3 additionally includes moderating variable (CEO POWER (CP).

Model 4 to Model 7 further includes an interaction term between the variables CEO POWER (CP) and board independence on the bank risk taking – called "BI*CP", board ownership on the bank risk taking – called "BO*CP, board financial expertise on the bank risk taking – called "BFE*CP" and board meeting frequency on the bank risk taking – called "BMF*CP". Moderation exists if the Beta values are either increasing or decreasing, there is a change in R^2 or the relationship between the interaction term and the outcome is significant (Barron & Kenny, 1986).

Model 7 is the overall model that tested for moderation. From the model, the moderating effect of CEO power on the relationship between board independence and risk taking (BI*CP) exists since the beta value decreased from 0.57 to 0.03, an R^2 of 0.01 was recorded and the interaction term was significant at 0.05% level. The implication is that in the presence of a powerful CEO, the effectiveness of non-executive board members in decision making is reduced. This could be attributed to the absence of the non-executive directors in the daily operations of the bank hence reliance on CEO and his reports in decision making.

Further, the moderating effect of CEO power on the relationship between board ownership and risk taking (BO*CP) exists since the beta value increased from -0.38 to

0.04, an R^2 of 0.04 reported and the interaction term was significant at 0.05% level. This is an indication that in the presence of a powerful CEO, even board members with stake in the banks they represent are influenced hence putting their risk taking decisions in jeopardy in order to suit the interest of the all- powerful CEO.

Additionally, CEO power moderates the relationship between board financial expertise and risk taking (BFE*CP) since the beta value increased from -0.42 to 0.03. Also, there is an R^2 of 0.05 and the interaction term being significant at 0.05% level suggesting that, a powerful CEO has the ability to exert his will on the financial experts within the board. That, even with its experience and knowledge in financial matters, a powerful CEO is able to affect the direction of board decisions as regards risk taking.

Finally, as a moderator, CEO power affects the relationship between board meeting frequency and risk taking (BFE*CP). The beta value decreased from 0.90 to -0.03 with an R^2 of 0.01 and the interaction term significant at 0.05% level. The change in direction of the relationship is a pointer to the strength the CEO possesses in influencing the efficiency of a board in making its decisions regarding risk taking no matter the number of times the board holds its meetings. In this case, the results are suggestive of a CEO who is able to influence the agenda to match his risk taking preference. Furthermore, such a powerful executive could just be using the board members as rubberstamp to his pre-determined level of risk taking.

Table 4.7 Hierarchical Regression Model

Zscore	**Model 1 Coef.(Se)**	**Model 2 Coef.(Se)**	**Model 3 Coef.(Se)**	**Model 4 Coef.(Se)**	**Model 5 Coef.(Se)**	**Model 6 Coef.(Se)**	**Model 7 Coef.(Se)**
_cons	-2.53 (0.26)**	-1.71(0.22)**	-1.59(0.22)**	-1.50(0.22)**	-1.47(0.22)**	-1.43(0.21)**	-1.41(0.20)**
FS	0.43 (0.05)*	0.18(0.04)**	0.18(0.04)**	0.18(0.04)**	0.18(0.04)**	0.18(0.04)**	0.18(0.04)**
FA	0.39(0.56)*	0.26(0.04)**	0.27(0.04)**	0.24(0.04)**	0.24(0.04)**	0.22(0.04)**	0.21(0.04)**
BI		0.57(0.19)**	0.54(0.19)**	0.40(0.20)**	0.42(0.19)**	0.38(0.18)**	0.36(0.18)**
BO		-0.38(0.06)**	-0.35(0.06)**	-0.34(0.06)**	-0.29(0.06)**	-0.25(0.06)**	-0.25(0.06)**
BFE		-0.42(0.07)**	-0.39(0.07)**	-0.37(0.07)**	-0.36(0.07)**	-0.30(0.06)**	-0.28(0.06)**
BMF		0.90(0.11)**	0.82(0.11)**	0.77(0.11)**	0.74(0.11)**	0.65(0.10)**	0.65(0.10)**
CP			-0.28(0.06)**	-0.20 (0.06)**	-0.21(0.06)**	0.18(0.08)**	0.17(0.08)**
BI*CP				0.03(0.01)**	0.01(0.01)**	0.03(0.01)**	0.03(0.01)**
BO*CP					0.04(0.01)*	0.05(0.01)**	0.04(0.01)**
BFE*CP						0.03(0.00)**	0.03(0.00)**
BMF*CP							-0.03(0.01)**
R-sq:	*0.35*	*0.38*	*0.41*	*0.42*	*0.46*	*0.51*	*0.52*
R-sq∆		*0.03*	*0.03*	*0.01*	*0.04*	*0.05*	*0.01*
F- value	*81.05*	*89.33*	*81.18*	*73.23*	*66.88*	*71.29*	*66.20*
Prob > chi2	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
sigma_u	*0.21*	*0.46*	*0.42*	*0.41*	*0.36*	*0.32*	*0.32*
sigma_e	*0.28*	*0.22*	*0.21*	*0.21*	*0.21*	*0.20*	*0.20*
Rho	*0.36*	*0.82*	*0.80*	*0.79*	*0.75*	*0.73*	*0.73*
Hausman test							
chi2	30.99	125.18	78.71	130.3	357.01	256.49	76.75
Prob>chi2	0.00	0.000	0.00	0.00	0.00	0.00	0.00

**p<.05

4.8 Modgraphs for Moderating Effect of CEO Power

Given that a significant interaction was obtained, at this point it is worth investigating the nature of the moderator (Aiken & West, 1991). Thus, development of a line graph (Graph 1) used Modgraph as suggested by Jose, (2013). Modgraph is a moderation tool, according to Jose (2008), that allows researchers visualize the moderating relationship of the third variable on two variables. Modgraph allows one to enter statistical data from multiple regression outputs in order to compute the equations that generate cell means, which are required for displaying statistical interactions graphically. Jose's ModGraph application was used to enter the data from the regression analysis. The Jose's software calculated the +SD (Standard Deviation) and -1 SD (Standard Deviation) values of averages of predictor and continuous moderator variables. These values were categorized into three groups: high, medium, and low, and were used in program analysis. The figures that were developed are helpful in deciphering the theoretical significance of the statistical interaction that was discovered. The regression analysis output provided the input data. This application is used in earlier research as well (Lindsay, Sharma & Rashad, 2017).

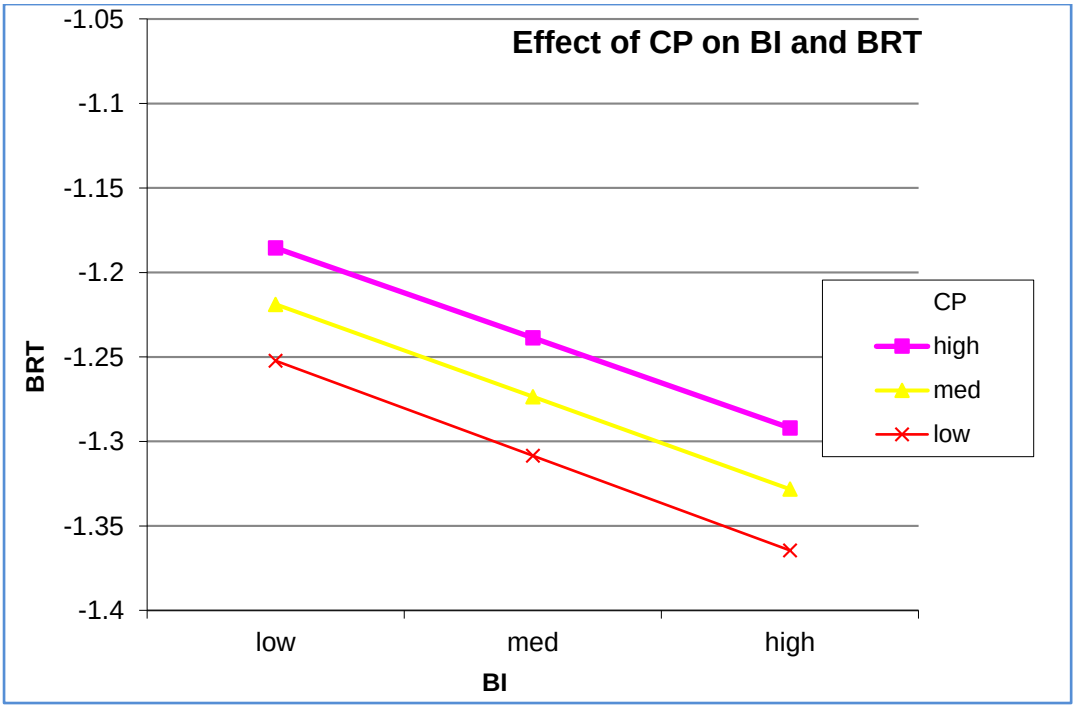

Figure 4.1: Moderating Effect of CEO Power on Effect of Board Independence on Bank Risk Taking

According to figure 4.1, the study reports a buffering moderating effect which occurs when the moderator variable (CEO power) weakens the effect of board independence (independent variable) on bank risk taking (dependent variable). This means that, increasing CEO power would decrease the effect of board independence on bank risk taking. This shows that at higher levels of CEO power and high board independence, banks take less risks. These findings indicate that the CEO could be so powerful that he is able to compromise the autonomy in risk taking decisions made by the independent directors. Furthermore, appointment of the independent directors could be influenced by the all controlling CEO and therefore eroding board independence.

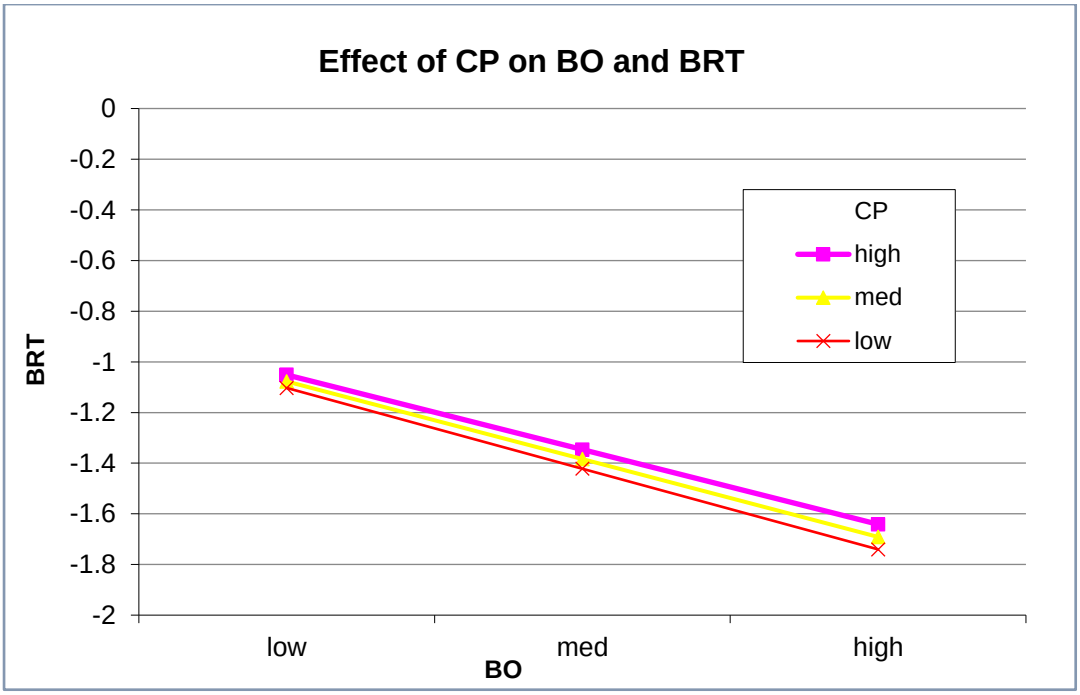

Figure 4.2: Moderating Effect of CEO Power on Effect of Board Ownership on Bank Risk Taking

Figure 4.2 shows a buffering moderating effect implying that the moderating variable (CEO power) weakens the effect of board ownership ((independent variable) on bank risk taking (dependent variable).This means that, an increase in the moderating variable (CEO power) would lead to a decrease in the impact of board ownership on bank risk taking. Although the essence of board ownership is the alignment of interest of the board and investors' interests, a powerful CEO may determine the extent the board can own equity and the level of firm risk taking.

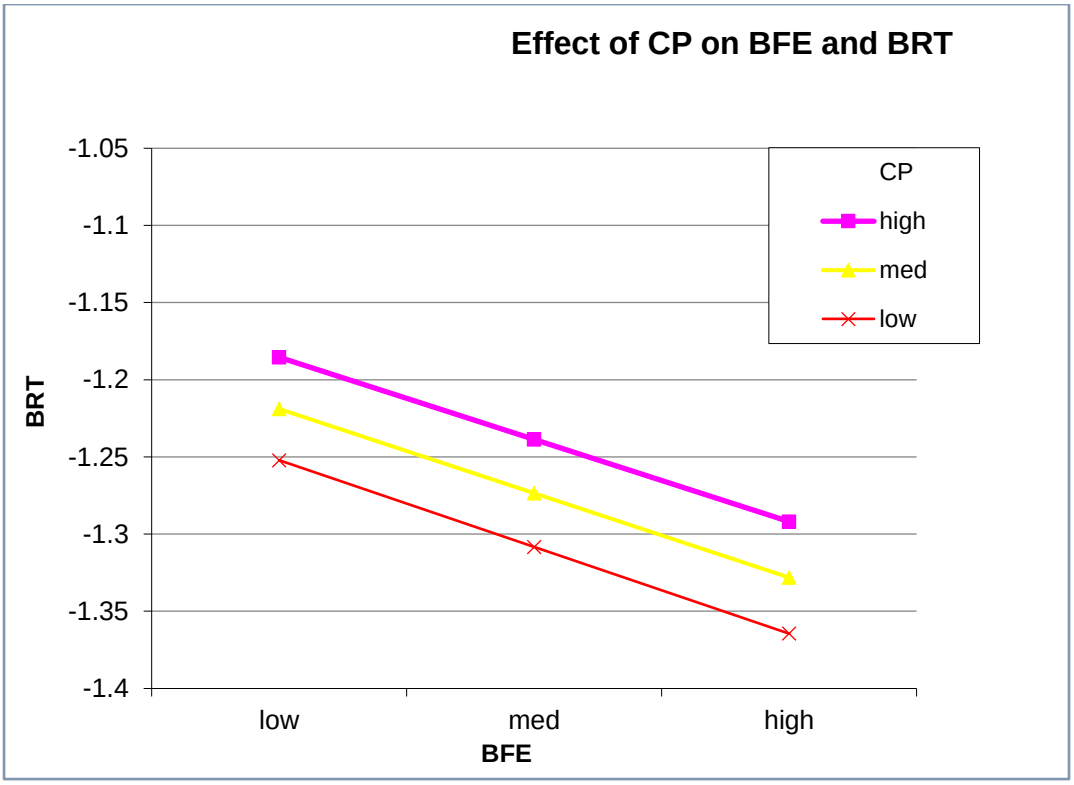

Figure 4.3: Moderating Effect of CEO Power on Effect of Board Financial Expertise on Bank Risk Taking

Figure 4.2 shows a buffering moderating effect implying that the moderating variable (CEO power) lowers the effect of board financial expertize (independent variable) on bank risk taking (dependent variable).Board members with financial expertize possess the knowledge and have the ability to calculate the optimal risk for a given firm. Nevertheless, a powerful CEO is likely to exert pressure on these board members to take CEO's preferred risk level.

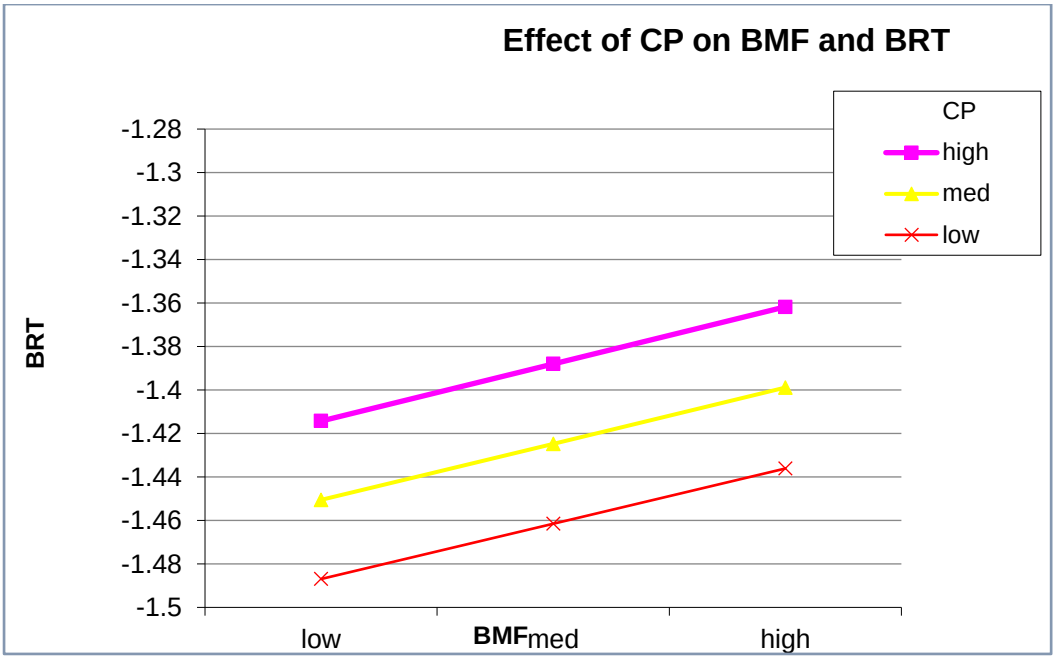

Figure 4.4: Moderating Effect of CEO Power on Effect of Board meeting frequency on Bank Risk Taking

Figure 4.1 presents an enhancing moderating effect of CEO power on the effect of board meeting frequency on bank risk-taking. In the presence of a powerful CEO, board meeting frequency increases bank risk taking. Though high board meeting frequency is expected to lower bank risk taking, a powerful CEO determines the agenda of the board meetings which implies that no matter the number of meetings, the focus may not necessarily focus on risk taking thus giving the CEO more latitude to determine the firm's risk-taking level.

4.9 Testing of Hypotheses

With basis on the Hausman test, this studys' hypotheses were tested using fixed effect model. Consequently, the fixed effect model findings were employed in the final analysis to counter the deficiencies associated with the random effect model. As Kohler and Kreuter (2009) contend, the fixed- effect estimate offers better handling of models comprising of variables that do not vary with time which are otherwise

omitted by the random effects model. The findings of the fixed effect presented in table 4.13 shows that the model's overall R-squared is 0.3771 suggesting that the predictor variables explain 37.71% variation in the outcome variable. The model specifications, F(6,354) = 89.333 and Prob > F= 0.000, also indicate that it is statistically significant.

H_{01}: *Board independence has no significant effect on risk-taking by commercial banks*

Based on the findings (β_1 =0.566, p=.000<0.05), hypothesis 1 was rejected; and the study concluded that board independence increases risk-taking by commercial banks in Kenya. The findings are supported by previous studies (Fakhrunnas & Ramly, 2017; Weir & Laing, 2000) but contradict those of Akbar, Kharabsheh, Poletti-Hughes and Shah (2017) and Pathan (2009) who found a negative relationship and concluded that directors who are independent feel that they are tasked with the role of striking a balance between shareholders' interests and those of other stakeholders with relative importance in banks not excluding depositors and regulators. Positive association expressed in board independence and risk taking relationship could be spelt out by the fact that independent directors generally have limited knowledge of the company they represent and are time constrained to monitor managers in addition to complications in understanding the firm's technicalities.

H_{02}: *Board ownership has no significant effect on risk-taking by commercial banks in Kenya*

The above hypothesis was rejected based on the findings from fixed effect model which showed that board ownership expressed a negative and significant effect on

risk-taking by commercial banks in Kenya(β_2 = -0.379, p=.000<.05). These findings are supported by Jiraporn, Chatjuthamard, Tong and Kim (2015) but contradict those of Mathew (2013) which shows a positive relationship. Executive directors are compensated in terms of equity and salary whereas non-executive directors are compensated with director fees for their work and they may as well be compensated with firm equity. Therefore, board ownership as an incentive aligns directors' interests well as the stockholders' interests, as outlined by the agency theory.

H_{03}: Board financial expertise has no significant effect on commercial banks in Kenya.

Table 4.13 shows that the above hypothesis **(H_{04})** was rejected (β_1 -0.416, p=0.000<0.05) and the conclusion is that board financial expertise has a negative and significant effect on risk taking.

These findings are supported by Younas *et al.,* (2019), however they contradict Minton, Taillard and Williamson's (2011) study which found that board financial experts was related to more risk taking. Financial knowledge is required to comprehend the firm's complicated operations and the dangers linked with its policies. Financial knowledge also enables board members to assess risky strategies that may be beneficial to investors. Therefore, having board members with financial expertise is an effective strategy of mitigating excessive corporate risk-taking by the managers.

H_{04}: Board meeting frequency has no significant effect on risk-taking of commercial banks in Kenya.

The study established that board meeting frequency had positive and significant effect on risk-taking (β_3 = 0.903, p<.05); thus hypothesis H_{03} was rejected. The results propose that commercial banks characterized by high degree of board activities have the likelihood of taking more risks. The results correlate with the findings of Younas *et al.,* (2019) though they conflict those of Battaglia and Gallo (2017). The frequency of board meetings fails to satisfy a number of objectives since the time that board members sit together indicate that there isn't always a lot of actual dialogue that is meaningful to risk taking. Again, when they meet they might not consider the firm's risks management strategies as a priority.

H05a: CEO power does not significantly moderate the relationship between Board independence and firm risk-taking among commercial banks

Table 4.13 revealed that CEO Power significantly expresses its moderating role in the board independence - bank risk- taking relationship (β=0.03; ρ<0.05) and R-sqΔ of 0.01). The modgraph for the relationship shows a buffering moderating effect where CEO power weakens the effect of board independence on risk taking. Therefore, $H_0$5a was rejected. A powerful CEO is a threat to the independence of the board and can as well influence the appointment of non-independent directors ultimately affecting risk taking.

$H_{05b:}$ *CEO power does not significantly moderate the relationship between Board ownership and firm risk-taking among commercial banks*

Results also indicated CEO power significantly moderated the association between board ownership and risk-taking (β= 0.04; ρ<0.05). Findings also indicate that after introducing an interaction term of board ownership and CEO power, there was a 0.04 R-sqΔ. Additionally, introduction of the interaction term changed the direction of the direct relationship from negative to positive meaning that in the presence of a powerful CEO, risk taking could be increased by the board. Further, the modgraph for the relationship shows a buffering moderating effect where CEO power weakens the effect of board ownership on risk taking. Therefore, the hypothesis is rejected. A powerful CEO can influence a firm's board ownership structure including the extent to which the board can own shares

$H_{05c:}$ *CEO power does not significantly moderate the relationship between Board financial expertise and firm risk-taking among commercial banks*

CEO power proves to be a significant moderator in the relationship between financial expertise of the board and risk-taking (β= 0.03; ρ<0.05).In addition, there is a 0.01 R-sqΔ after introducing an interaction term of board financial expertise and risk taking. Moreover, introduction of the moderator, CEO power, changed the direction of the direct effect from negative to positive an indication that a powerful CEO affect the risk taking decisions of the financial experts among the board within the firm. The modgraph for the relationship shows a buffering moderating effect where CEO power weakens the effect of board financial expertise on risk taking. Hence, $H_0$5c is rejected. The directors could be swayed by a powerful CEO who is able to influence risk taking

decisions in order to satisfy firm's risk appetite with the notion that a higher risk taking could lead to a higher return.

$H_{05d:}$ *CEO power does not significantly moderate the relationship between Board meeting frequency and firm risk-taking among commercial banks*

CEO power had a moderating and significant influence on the association that exists between board meeting frequency and risk-taking (β= -.03; ρ<0.05). More findings show that introduction of an interaction term between board meeting frequency and risk taking resulted in 0.05 R-sqΔ. Introduction of the interaction term led to change in the direction of the relationship in the direct effect such that the positive effect on the direct model is changed to negative relationship in the presence of a powerful CEO. Moreover, the modgraph for the relationship shows an enhancing moderating effect where CEO power strengthens the impact of board activity on risk taking. Hence, hypothesis $H_0$5d is rejected. Board meetings could increase risk taking as the meetings are not necessarily fully focused on risk management strategies however; a powerful CEO can influence and manipulate board meetings in pursuit of his personal interests.

Table 4.13: Summary Results of Hypotheses Tests

Hypotheses	β	P<5%	Decision
$H_{01:}$Board independence has no significant effect on risk taking	0.566	0.000	Rejected
$H_{02:}$Board ownership has no significant effect on risk taking	-0.379	0.000	Rejected
$H_{03:}$Board financial expertise has no significant effect on risk taking	-0.416	0.000	Rejected
$H_{04:}$Board meeting frequency has no significant effect on risk taking	0.903	0.000	Rejected
$H_{05a:}$CEO power does not significantly moderate the relationship between board independence and risk taking	0.030	0.000	Rejected
$H_{05b:}$CEO power does not significantly moderate the relationship between board ownership and risk taking	0.040	0.000	Rejected
$H_{05c:}$ CEO power does not significantly moderate the relationship between board financial expertise and risk taking	0.030	0.000	Rejected
$H_{05d:}$CEO power does not significantly moderate the relationship between board meeting frequency and risk taking	-0.030	0.000	Rejected

4.10 Summary of Theories

Agency theory defends the rationality of decision makers based on their individual characteristics, and ownership. Board independence, board ownership, board financial expertise and board meeting frequency jointly lead to logical decision making on risk taking issues. The association between corporate governance and risk taking captures asymmetric information challenge and conflict of interest among stakeholders as a factor affecting such a relationship by introducing CEO power which affects the quality of decisions. Therefore, Agency theory informed the study though, governance factors alone are insufficient in supporting managerial risk preference. Aspects of decision situations as captured in "problem-framing" suggested by prospect theory contribute to corporate governance models of risk choice behaviour.

Prospect theory, (Khaneman & Tversky, 1979) posit that risk is taken based on a reference point, gains or losses, hence decisions are based on probabilities rather than certainties. Decision makers are risk averse when gains are made and risk seekers during periods of loss. Hence, this argument of prospect theory is applied in the study to suggest that decision makers decide on the level of risk based on the target returns (reference point). The study findings show that corporate governance encouraged higher risk taking. From a prospect theory perspective, banks could be making risk taking decisions based on the losses they made. However, prospect theory fails to give an elaborate framework of identifying whether decision makers are operating from a loss or a gain hence, decision making bias (irrationality) which pose a limitation of this theory (Holmes *et al*., 2011). Also, the role played by the CEO in risk taking decisions is not explained by prospect theory in this study.

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The summary of previous chapter's findings, the research conclusion, recommendations, and areas for further research are presented in this chapter.

5.2 Study Findings Summary

The dynamic and unpredictable nature of bank risk-taking and how corporate governance affects it aroused interest in studying this relationship and how power could moderate it. Therefore, this study's general objective was to establish the moderating effect of CEO power on the relationship between corporate governance and risk-taking among commercial banks in Kenya. Following is the summary of the findings with reference to table 4.11 (Fixed-effects regression).

5.2.1 Effect of Board Independence on Risk-taking

Being the first specific objective, the measurement for the independence of the board was the percentage of non-independent directors to board size presented as a ratio. The results of the fixed effect regression indicated that board independence showed a statistically significant and positive impact on bank risk-taking ($\beta = 0.566$ $\rho<0.05$). These findings of this study are similar to those of (De Vita, & Luo, 2018; Olson, B., Parayitam, Skousen & Skousen, 2018; Fakhrunnas & Ramly, 2017) but contrast those of (Elamer, AlHares, Ntim, & Benyazid, 2018; Hunjra, Hanif, Mehmood, & Nguyen, 2020; Te Brick & Chidambaran, 2010; Pathan 2009) which could indicate the autonomy of board independence function in firms under consideration. Some studies find no effect of board independence on firm risk-taking (Cheng et al., 2010; Zhang, Cheong & Rasiah, 2018).

Thus, maintaining non-executive directors on board would enhance monitoring of a firm and protect minority shareholders' rights by engaging in proper risk management strategy formulation that promotes value creation (Sarker & Sarker, 2009). Moreover, independent directors are deemed to possess diverse skills that can contribute towards proper decision-making regarding optimal firm risk-taking level (Kor & Misangyi, 2008).

5.2.2 Effect of Board Ownership on Risk-Taking

Board ownership denotes the proportion of shares the board of directors owns in a company and approximated by the percentage of director shares ownership to total shares expressed as a ratio. The results from the fixed effect regression results indicated that board ownership had a negative and statistically significant impact on bank risk-taking (β = -0.379 $\rho<0.05$). These findings from this study are similar to those of (De Vita, & Luo, 2018; Olson, B., Parayitam, Skousen & Skousen, 2018; Fakhrunnas & Ramly, 2017) but contrast those of (Elamer, AlHares, Ntim, & Benyazid, 2018; Hunjra, Hanif, Mehmood, & Nguyen, 2020; Te Brick & Chidambaran, 2010; Pathan 2009) which could indicate the autonomy of board ownership function in firms under consideration. Some studies find no effect of board ownership on firm risk-taking (Cheng et al., 2010; Zhang, Cheong & Rasiah, 2018).

Board equity ownership prompts board members to align their interests with other investors leading to greater effectiveness in monitoring and oversight of crucial corporate decisions (Chatterjee, 2009).

5.2.3 Effect of Board meeting frequency on Risk-Taking

The frequency of board meeting frequency represents the number of board meetings held annually by a firm. The most commonly used measure of board meeting

frequency is the number of meetings held per year. Findings from fixed effect regression results indicate a statistically positive and significant relationship between the frequency of board meetings and risk-taking (β=0.904 ρ<0.05). This association proposes that the more the board meetings are held, the higher the risk-taking, which points out to the meetings' main agenda, meaning that the meetings could not necessarily hold risk-taking as the main agenda. There is also a possibility of more risk-taking, translating to higher returns. These findings are supported by previous literature (Younas, Klein, Trabert, & Zwergel, 2019; Pathan, 2009).In contrast, a number of findings show a negative relationship between board meeting frequency and bank risk-taking (Vafeas, 1999; Brick & Chidambaran, 2010; Abbas, Alam & Hafeez, 2020), while (Chaudhary, 2020) found no significant effect.

5.2.4 Effect of Board Financial Expertise on Risk-Taking

Objective number four sought to determine the impact of the board members' financial expertise among bank risk-taking. The study operationalized board financial expertise as the number of board members with a financial background, academic, professional, or work experience. Having such caliber on board could result in quality risk-taking decisions that yield high returns. From this study, the findings of board financial expertise effect on risk-taking is significantly negative (β=-0.416 ρ<0.05). Empirical literature supports these findings (García-Sánchez, García-Meca & Cuadrado-Ballesteros, 2017; Hau and Thum, 2009), others diverge from these findings (IMF, 2014; Minton et al., 2014; Taillard, & Williamson, 2012) while others are indifferent (Ittner & Keusch, 2015).

Financial expertise is a crucial determinant of risk-taking level in firms. Given financial expertise, Lanfranconi and Robertson (2002) highlighted and presented that

the business scandals of Enron and WorldCom were primarily caused by the absence of financial experts on the companies' boards. In Enron's case, the board members lacked the required knowledge to distinguish the complex financial planning arrangements used for special entities. Moreover, the importance of finance experts within the board of directors could not be assumed in the case of WorldCom, as the company's woes were caused by the non-existence of board members in possession of fundamental accounting expertise and knowledge. Hence, the importance of board financial expertise is obvious and a requirement in controlling risk-taking.

5.2.5 Moderating Effect of CEO Power on the relationship between corporate governance and Risk taking

CEO power moderated the association existent on board independence - risk-taking relationship (β=0.03; ρ<0.05). Results further reveal a buffering impact of CEO power on the relationship between board independence and risk-taking, indicating that the impact of board independence on risk-taking is reduced by increasing CEO power. According to Larcker *et al.* (2007), increased CEO power shows weak corporate governance and reduces the board's independence.

Furthermore, the findings showed a moderating and significant effect of CEO power on the association between board ownership and risk-taking of commercial banks (β= 0.04; ρ<0.05). The findings further point to buffering effect of CEO power on the existing relationship. By increasing CEO power, board ownership increases risk-taking. This is not always the case, as board ownership is expected to reduce risk-taking due to the company's interest.

Moreover, CEO power exhibited a significant and buffering moderation on the association between board financial expertise and risk-taking of commercial banks in

Kenya (β= 0.03; ρ<0.05). Board financial expertise, therefore, increases risk-taking in the presence of a powerful CEO. In the absence of a CEO possessing power, financial expertise would significantly reduce risk-taking due to the knowledge and experience of the risk-taking realm.

Finally, CEO power had a significant moderating effect on the relationship between board meeting frequency and risk-taking of commercial banks in Kenya (β= -0.03; ρ>0.05). Results further indicate an enhancing effect of CEO power in the direct relationship, meaning that, by increasing the CEO power of a firm, the impact of board meeting frequency on risk-taking is increased. This could be explained by the manipulative power of the CEO, who could either not put risk-taking on the agenda or convince the board members to pass decisions regarding additional risk-taking.

5.2.6 The Control variables (bank age and bank size) and risk taking

This study findings indicate that bank age is positively and significantly (β =0.39, ρ<0.05) related to bank risk taking suggesting that banks that have been operational for some time are well established hence, they tend to take higher risks (Su, Wan & Song, 2018: Lee 2020). Conversely, (Ahmad & Azhari, 2020), posit that well established firms are less prone to risk taking while young and growing firms prefer investments with high risk because they tend to be more aggressive leading to high risk taking with focus on fast growth rate.

The research findings of this study expressed a significant and positive (β =0.43, ρ<0.05) effect of bank size on risk taking. These findings support earlier studies of (Aslam & Haron, 2021: Francis *et al.,* 2012). This implies that when banks have accumulated assets and grown big, they tend to support and undertake riskier financing.

5.3 Conclusion

A conceptual framework for this study was developed by conducting a thorough assessment of literature to generate the research hypotheses. Emphasis was based on the moderation role of CEO power on the association between corporate governance and risk-taking among commercial banks in Kenya. Data was extracted from the Central Bank of Kenya's annual supervisory reports and individual banks' audited yearly financial reports.

In line with Prospect Theory, board independence and board meeting frequency positively and significantly affected risk-taking. In contrast, board ownership and board financial expertise had a negative and significant impact on the outcome variable. The fixed-effect model projected that 37.71% variation in risk-taking is explained by board independence, board ownership, board financial expertise, board meeting frequency, firm size, and firm age. Remarkably, board independence, board ownership, board financial expertise, and board meeting frequency

Additionally, the findings show that CEO power moderated the relationship between all corporate governance indicators (Board independence, board ownership, board financial expertise, and board meeting frequency) and bank risk-taking. These results suggest that a powerful CEO impacts the direction and effect of corporate governance on risk-taking.

In conclusion, this study finding proved the moderating effect of CEO power and empirically supported studies on corporate governance and risk-taking relationship. Scholars, policymakers, and practitioners will benefit from this study.

5.4 Recommendations

5.4.1 Managerial Contribution

Based on the findings, board independence and board meeting frequency had a positive effect on bank risk-taking. In contrast, board ownership and board financial expertise had a negative impact on bank risk-taking. Corporate governance mechanisms affect risk-taking. The major managerial implication from this study is that banking firms should seek to balance between the non-executive Directors and executives because a large fraction of independent members of the board is associated with higher risks. Additionally, independent directors usually have less information about a firm and the limiting time factor for monitoring managers and knowing firm complexities. Though board meetings frequency is an indicator of the board's effectiveness in making strategic decisions and monitoring managers risk-taking behaviours, the findings show that board meeting frequency is linked to excessive risk takings; hence there is a need for the board to hold focused meetings and consider the firm's operating context as well as firm risk optimal level.

Board ownership reduces risk-taking in banks. Findings show that there is less risk-taking where there is increased board ownership, implying that board ownership ensures that the interests of both directors and shareholders are aligned. Therefore by encouraging board ownership, Directors' risk-taking decisions will be pegged on their equity stake; thus, the firm will maintain an optimal risk level that guarantees superior returns.

Financial solid expertise among independent directors reduces risk-taking. Poor or lack of financial knowledge by board members is often a reason behind the closure of many firms; risk-taking in banks is low with more financial expertise among its board

members. These findings give more insight into banks in ensuring board members are well qualified in financial matters, which is likely to discourage risk with adverse effects among banks. This study recommends that banks have financially knowledgeable board members since this will enable the board to have a better understanding regarding the technicalities of some financial transactions and the risks that are associated herein, thus, improving the financial stability of banks.

5.4.2 Policy Contribution

The study recommends that policymakers set corporate governance measures that would lessen excessive risk-taking. First, there is a need to balance the independent and dependent board of directors with respect to board independence. Second, for ownership, firm directors should hold a substantial equity stake which ensures that the board aligns its decisions to a risk-return tradeoff for the benefit of shareholders. Third, regarding board financial expertise, there is a need for a mandatory number of directors with financial expertise, enabling the board to evaluate and take calculated risks. Finally, there is a need for a policy requirement that the board considers the firm's risks during board meetings, and the report on the same be presented in the director’s report.

5.4.3 Theoretical Contribution

The research tested the moderating effect of CEO power on the association concerning corporate governance and bank risk-taking from 2008 to 2018. The findings of this study thus offer the theoretical rationale of how board independence, board ownership, board financial expertise, and board activities could determine bank risk-taking in the Kenyan banking sector. Further, the study provides theoretical support to agency theory that under powerful CEO, non-executive directors, directors

with shares in the company, and directors with financial expertise are likely to have influenced risk-taking behaviors, unlike conventional expectation. The CEO from the research findings compromises the decisions made by the board. For instance, board financial expertise reduced risk-taking in the absence of a powerful CEO but the direction changes in the presence of a powerful CEO.

This research makes a double input in the studies relating to corporate governance on firms' risk taking. To begin with, while previous studies have carried out research on the role played by a particular characteristic among many corporate governance features, this particular research goes beyond the existing literature by incorporating a detailed group of features of corporate governance which is comprised of; board ownership, board meeting frequency, board independence, and board financial expertise. Secondly, this research spreads out literature to an environment that can be termed less favourable to risk taking by the management yet previously, studies took in to consideration organizations surrounded by organizations that favour risk taking by managers. Kenya is characterized by capital markets that are still developing, weakened take- over market and moderately less frequent application of performance based compensation due to be paid to executives. Hence, this research extends the existing debate that focuses on the appropriate characteristics of corporate governance that encourages risk taking by managers in such an environment. Findings from this study indicate that the features of the board and equity ownership by board members affect risk taking which brings about contrasting evidence with results of similar research undertaken in developed countries for instance, United States of America. Therefore, important implication for the regulators, the management and policy makers, more so in capital markets that are not well developed with regimes characterized by weak take over procedures and compensation for managers that is

not based on performance. From the results of the study, it is evident that firms are in a position to utilize specific fractions of corporate governance with the view of encouraging managerial risk taking. Additionally, in the case where a CEO is powerful, risk taking at firm level is in jeopardy. Hence, this study findings make sense in that, powerful CEOs are dominant in Kenyan banks.

This study's results backs agency theory contention that concentration of power for a CEO points to a behaviour in managers that encourages opportunism, adding on to taking of risks tendency by board members. CEO power could therefore ensure that the interests of the board of directors and those of the investors are aligned in order to induce managerial behaviour and activities that support maximization of investor's returns. Likewise, the study results also supports holding of several board meetings per year with a focused agenda in banks with powerful CEOs since findings show reduced risk-taking in such a scenario.

5.5 The Study Limitations and Further Research Recommendations

The research encompassed Kenyan banks only; hence, future studies could incorporate other countries so that the findings provide a regional status of adoption and application of corporate governance codes to risk-taking. Further, there is a need to consider different sectors of the economy because the banking sector adheres to strict corporate governance guidelines more- so in risk-taking. This might shed more light on the corporate governance and risk-taking relationship. Literature shows that other measures of risk-taking exist among them, non-performing loans (NPL). It could be interesting to find out the similarity or contradiction of results of this study using NPL as a measure of risk-taking. Also, there is a need to study other non-bank entities such as SACCOs, Insurance, and MFIs to establish how corporate governance

affects how firms in the sector of finance take risks. Finally, future studies could incorporate different dimensions of corporate governance, which could encompass board gender, board age, and CEO compensation, in studying the “corporate governance- risk-taking relationships”.

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APPENDICES

Appendix I: Summary of Prior Literature on Bank Governance and Risk-taking

Study	Governance Measure	Summary
Board Attributes		
Beltratti and Stulz(2012)	Shareholder-friendly board index collected by Institutional Shareholder Services (ISS)	Risk Measures: Default Risk (Z-score); Equity Risk (Idiosyncratic component of Stock Volatility); Leverage Risk (Equity minus Tangible Assets scaled by Assets); Portfolio Risk (Fraction of Loan Writedowns to Assets)
		Key Findings: Shareholder-friendly boards are positively associated with default risk, although this relationship is not entirely robust to different risk measures
Erkens *et al*. (2012)	Independent Directors	Risk Measures: Default Risk (Expected Default Frequency); Equity Risk (Stock Volatility); Leverage Risk (Amount of Equity Capital raised)
		Key Findings: No significant relationship between independent directors and default risk or equity risk. Banks with a higher fraction of independent directors reduced leverage risk by raising equity during the financial crisis.
Minton *et al*. (2014)	Demographics of Executive directors (Age, Educational Qualification, and Gender)	Risk Measures: Portfolio Risk (Asset Density, Loan Portfolio Concentration)
		Key Findings: Portfolio risk is positively associated with younger executives and female directors. Portfolio risk is negatively associated with the fraction of directors with doctorate.
Berger *et al*. (2014)	Financial expertise of independent directors	Risk Measures: Equity risk (Stock Volatility); Leverage risk (Risk-weighted Capital Ratio); Portfolio risk (Fraction of Loans secured by Real Estate)
		Key Findings: Boards consisting of higher amount of financial experts were positively associated with bank risk
IMF Report (2014)	Board Size	Risk Measures: Default Risk (Z-score and Distance-to-default); Equity Risk (Systematic component of Stock Volatility); Tail Risk (Expected Shortfall, Marginal Expected Shortfall, and Systemic risk)
	Independent directors	Key Findings: Higher fraction of independent directors is associated with lower bank risk, although boards that have more financial experts are associated with higher risk.
Hagendorff and Vallascas (2011)	Executive Pay	Risk Measures: Default Risk (Merton's distance-to-default)
	CEO pay-risk sensitivity or Vega	Key Findings: High vega banks pursue acquisitions that result in increasing default risk
DeYoung *et*	CEO pay-risk sensitivity	Risk Measures: Equity risk (Stock Volatility)

al. (2013)	or Vega CEO pay-performance sensitivity or Delta	
		Key Findings: Higher Vega is associated with an increase in equity risk. Higher Vega results in shifting the business model of banks to non-traditional activities, i.e. a greater fraction of income from non-interest bearing activities and derivatives investment.
IMF Report (2014)	Fraction of equity- based pay	Risk Measures: Default Risk (Z-score and Distance-to-default); Equity Risk (Systematic component of Stock Volatility); Tail Risk (Expected Shortfall, Marginal Expected Shortfall, and Systemic Risk)
		• Key Findings: Higher equity-based pay is associated with lower bank risk
Bennett *et al*. (2015)	CEO debt-based compensation	• Risk Measures: Default risk (Expected Default Frequency)
		• Key Findings: Higher inside debt is associated with lower default risk during the crisis
Bekkum (2015)	Fraction of CEO debt-based compensation	Risk Measures: Tail Risk (Value-at-Risk, Expected Shortfall, Covariance); Equity Risk(Stock Volatility)
		• Key Findings: Inside debt is negatively associated with different measures of bank risk
Bolton *et al*. (2015)	CEO inside debt to equity-based compensation	Risk Measures: Announcement effect on CDS spreads
		• Key Findings: Announcement of CEO inside debt holdings is associated with lower CDS spreads
Cheng *et al*. (2015)	Residual compensation	• Risk Measures: Equity risk (Stock Volatility)
		• Key Findings: Residual compensation is positively associated with equity risk Risk Management
Keys *et al*. (2009)	Risk Manager Power	• Risk Measures: Portfolio Risk (Default rates on subprime loans)
Fahlenbrach *et al*. (2012)	Risk culture, as proxied by bank performance during the 1998 Russian crisis Strength and independence of risk management function	Risk Measures: Default Risk (Bank Failures during the 2007-08 period)
		Key Findings: Banks with persistent risk-taking culture performed poorly and were more likely to fail during the 2007-08 financial crisis

Appendix II: Documentary Guide

	1	2	3	4	5	6	7	8	9	10	11	12
Company in Kenya	Net Profit	Total Equity	Total Asset	Years since incorporation	Number of Directors	Non-executive	Director financial expertise	Number of board meetings	Total board shareholding	CEO Age	CEO Experience	CEO Tenure
1. ABC Bank (Kenya)												
2. Bank of Africa												
3. Bank of Baroda												
4. Bank of India												
5. Barclays Bank of Kenya												
6. CfC Stanbic Holdings												
7. Citibank												
8. Commercial Bank of Africa (NCBA)												
9. Consolidated Bank of Kenya												
10. Cooperative Bank of Kenya												
11. Credit Bank												
12. Development Bank of Kenya												
13. Diamond Trust Bank												
14. Ecobank Kenya												
15. Equatorial Commercial Bank (Spire)												
16. Equity Bank												
17. Family Bank												
18. Fidelity Commercial Bank Limited (SBM)												
19. First Community Bank												
20. Giro Commercial Bank												
21. Guardian Bank												
22. Gulf African Bank												

23. Habib Bank												
24. Housing Finance Company of Kenya												
25. I&M Bank												
26. Kenya Commercial Bank												
27. Middle East Bank Kenya												
28. National Bank of Kenya												
29. NIC Bank												
30. Oriental Commercial Bank (M'oriental)												
31. Paramount Universal Bank												
32. Prime Bank (Kenya)												
33. Sidian Bank (K'rep)												
34. Standard Chartered Kenya												
35. Trans National Bank Kenya(Access)												
36. Victoria Commercial Bank												

	14	15	16	17	18	19	20	21	22	23
Company in Kenya	ROA= (1) / (3)	STD. ROA	Z-score= [(14) +(1/3) /15]	FA= natural log (4)	FS= natural log (3)	BI= (5) / (6)	BFE= (5) / (7)	BA= (8)	BO= (9)	CEO Power= (10) +(11)+(12)+(13)
1. ABC Bank (Kenya)										
2. Bank of Africa										
3. Bank of Baroda										
4. Bank of India										
5. Barclays Bank of Kenya										
6. CfC Stanbic Holdings										
7. Citibank										
8. Commercial Bank of Africa (NCBA)										
9. Consolidated Bank of Kenya										
10. Cooperative Bank of Kenya										
11. Credit Bank										
12. Development Bank of Kenya										
13. Diamond Trust Bank										
14. Ecobank Kenya										
15. Equatorial Commercial Bank (Spire)										
16. Equity Bank										
17. Family Bank										
18. Fidelity Commercial Bank Limited (SBM)										
19. First Community Bank										

20. Giro Commercial Bank										
21. Guardian Bank										
22. Gulf African Bank										
23. Habib Bank										
24. Housing Finance Company of Kenya										
25. I & M Bank										
26. Kenya Commercial Bank										
27. Middle East Bank Kenya										
28. National Bank of Kenya										
29. NIC Bank										
30. Oriental Commercial Bank (M'oriental)										
31. Paramount Universal Bank										
32. Prime Bank (Kenya)										
33. Sidian Bank (K'rep)										
34. Standard Chartered Kenya										
35. Trans National Bank Kenya (Access)										
36. Victoria Commercial Bank										

Appendix III: Regression Output

CONTROL VARIABLES

```
. xtreg  logdv2 FA FS ,fe

Fixed-effects (within) regression               Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.3117                         Obs per group: min =        11
       between = 0.5550                                        avg =      11.0
       overall = 0.3486                                        max =        11

                                                F(2,358)           =     81.05
corr(u_i, Xb)  = -0.6314                        Prob > F           =    0.0000
```

logdv2	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FA	.3898261	.0563732	6.92	0.000	.2789619	.5006903
FS	.4292047	.0548929	7.82	0.000	.3212516	.5371578
_cons	-2.529224	.2592038	-9.76	0.000	-3.038978	-2.019471
sigma_u	.21383664					
sigma_e	.28233132					
rho	.36453421	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(35, 358) =     3.28             Prob > F = 0.0000
```

```
. xtreg  logdv2 FA FS

Random-effects GLS regression                   Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.3005                         Obs per group: min =        11
       between = 0.6193                                        avg =      11.0
       overall = 0.3689                                        max =        11

                                                Wald chi2(2)       =    189.30
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

logdv2	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FA	.1976051	.0424838	4.65	0.000	.1143383	.2808718
FS	.3873269	.041266	9.39	0.000	.3064471	.4682068
_cons	-1.682226	.1773765	-9.48	0.000	-2.029877	-1.334575
sigma_u	.09635233					
sigma_e	.28233132					
rho	.1043182	(fraction of variance due to u_i)				

Direct Effect

```
. xtreg ZSCORE FA FS BI BO BFE BA ,fe

Fixed-effects (within) regression               Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.6022                         Obs per group: min =        11
       between = 0.4912                                        avg =      11.0
       overall = 0.3771                                        max =        11

                                                F(6,354)           =     89.33
corr(u_i, Xb)  = -0.8631                        Prob > F           =    0.0000
```

ZSCORE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FA	.264199	.0439564	6.01	0.000	.1777504	.3506476
FS	.1799043	.0447559	4.02	0.000	.0918833	.2679252
BI	.5662027	.1936318	2.92	0.004	.1853894	.9470159
BO	-.3791747	.0585805	-6.47	0.000	-.4943844	-.2639651
BFE	-.4163739	.068065	-6.12	0.000	-.5502365	-.2825114
BA	.903966	.1072292	8.43	0.000	.6930795	1.114852
_cons	-1.709483	.2187568	-7.81	0.000	-2.139709	-1.279257
sigma_u	.46160308					
sigma_e	.21582915					
rho	.82060275	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(35, 354) =     4.88             Prob > F = 0.0000

. xtreg ZSCORE FA FS BI BO BFE BA

Random-effects GLS regression                   Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.5478                         Obs per group: min =        11
       between = 0.7702                                        avg =      11.0
       overall = 0.5906                                        max =        11

                                                Wald chi2(6)       =    519.52
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ZSCORE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FA	.1293333	.0336408	3.84	0.000	.0633984	.1952681
FS	.2124219	.0344073	6.17	0.000	.1449849	.279859
BI	.8786613	.1949058	4.51	0.000	.4966529	1.26067
BO	-.0510206	.013283	-3.84	0.000	-.0770548	-.0249864
BFE	-.4755753	.0673631	-7.06	0.000	-.6076046	-.343546
BA	.7600691	.0999326	7.61	0.000	.5642047	.9559335
_cons	-1.281567	.147113	-8.71	0.000	-1.569903	-.9932309
sigma_u	.05250843					
sigma_e	.21582915					
rho	.05588104	(fraction of variance due to u_i)				

Moderated effect

```
. xtreg  ZSCORE FA FS BI BO BFE BA CP

Random-effects GLS regression                   Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.5695                         Obs per group: min =        11
       between = 0.7834                                        avg =      11.0
       overall = 0.6145                                        max =        11

                                                Wald chi2(7)       =    570.40
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ZSCORE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FA	.135461	.0329404	4.11	0.000	.070899	.2000229
FS	.1936509	.0338955	5.71	0.000	.1272168	.2600849
BI	.8245583	.1898649	4.34	0.000	.4524298	1.196687
BO	-.051907	.0131139	-3.96	0.000	-.0776096	-.0262043
BFE	-.4472812	.0658295	-6.79	0.000	-.5763047	-.3182577
BA	.6688409	.0995192	6.72	0.000	.4737869	.8638949
CP	-.2829713	.0583556	-4.85	0.000	-.3973462	-.1685964
_cons	-1.079702	.1509163	-7.15	0.000	-1.375493	-.7839117
sigma_u	.05432881					
sigma_e	.21213495					
rho	.06155254	(fraction of variance due to u_i)				

```
. xtreg  ZSCORE FA FS BI BO BFE BA CP,fe

Fixed-effects (within) regression               Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.6168                         Obs per group: min =        11
       between = 0.5197                                        avg =      11.0
       overall = 0.4092                                        max =        11

                                                F(7,353)           =     81.18
corr(u_i, Xb)  = -0.8448                        Prob > F           =    0.0000
```

ZSCORE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FA	.2660664	.0432071	6.16	0.000	.1810907	.351042
FS	.1781841	.0439924	4.05	0.000	.091664	.2647042
BI	.5369573	.1904847	2.82	0.005	.1623298	.9115848
BO	-.347537	.0582212	-5.97	0.000	-.4620409	-.233033
BFE	-.3917443	.0672365	-5.83	0.000	-.5239788	-.2595098
BA	.8189219	.1079172	7.59	0.000	.6066803	1.031163
CP	-.2106714	.0574723	-3.67	0.000	-.3237025	-.0976402
_cons	-1.590928	.2174313	-7.32	0.000	-2.018552	-1.163305
sigma_u	.42172026					
sigma_e	.21213495					
rho	.79806419	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(35, 353) =     4.52                 Prob > F = 0.0000
```

```
. xtreg ZSCORE FA FS BI BO BFE BA CP BIxCP ,fe

Fixed-effects (within) regression               Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.6247                         Obs per group: min =        11
       between = 0.5247                                        avg =      11.0
       overall = 0.4198                                        max =        11

                                                F(8,352)           =     73.23
corr(u_i, Xb)  = -0.8371                        Prob > F           =    0.0000
```

ZSCORE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FA	.2458659	.0434667	5.66	0.000	.1603789	.331353
FS	.1766686	.0436054	4.05	0.000	.0909087	.2624285
BI	.4031806	.1951337	2.07	0.040	.019406	.7869551
BO	-.3383006	.0578047	-5.85	0.000	-.4519867	-.2246145
BFE	-.3677483	.0672247	-5.47	0.000	-.4999608	-.2355358
BA	.7702509	.1084549	7.10	0.000	.5569498	.983552
CP	-.1961218	.0572142	-3.43	0.001	-.3086466	-.083597
BIxCP	.0342564	.0126338	2.71	0.007	.0094092	.0591037
_cons	-1.496789	.2182798	-6.86	0.000	-1.926086	-1.067493
sigma_u	.40920304					
sigma_e	.21025167					
rho	.79114028	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(35, 352) =     4.00                 Prob > F = 0.0000
```

Model 4

```
. xtreg ZSCORE FA FS BI BO BFE BA CP BIxCP

Random-effects GLS regression                   Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.5769                         Obs per group: min =        11
       between = 0.8127                                        avg =      11.0
       overall = 0.6360                                        max =        11

                                                Wald chi2(8)       =    621.06
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ZSCORE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FA	.1138678	.0320422	3.55	0.000	.0510662	.1766694
FS	.1975008	.0327356	6.03	0.000	.1333403	.2616613
BI	.5758571	.1948656	2.96	0.003	.1939275	.9577866
BO	-.0471218	.0125262	-3.76	0.000	-.0716726	-.022571
BFE	-.4087312	.0648171	-6.31	0.000	-.5357704	-.281692
BA	.5937679	.09789	6.07	0.000	.401907	.7856289
CP	-.2499619	.0576004	-4.34	0.000	-.3628567	-.1370672
BIxCP	.0569581	.0130678	4.36	0.000	.0313457	.0825705
_cons	-1.002927	.1460535	-6.87	0.000	-1.289187	-.7166677
sigma_u	.04929659					
sigma_e	.21025167					
rho	.05210906	(fraction of variance due to u_i)				

Model 5

```
. xtreg ZSCORE FA FS BI BO BFE BA CP BIxCP BOxCP,fe

Fixed-effects (within) regression               Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.6316                         Obs per group: min =        11
       between = 0.5676                                        avg =      11.0
       overall = 0.4611                                        max =        11

                                                F(9,351)           =     66.88
corr(u_i, Xb)  = -0.8095                        Prob > F           =    0.0000
```

ZSCORE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FA	.2394086	.0431948	5.54	0.000	.1544553	.3243618
FS	.180216	.0432817	4.16	0.000	.095092	.26534
BI	.4247094	.1937671	2.19	0.029	.0436189	.8058
BO	-.2894541	.0603953	-4.79	0.000	-.4082362	-.1706719
BFE	-.3638862	.0667087	-5.45	0.000	-.4950851	-.2326872
BA	.7405888	.1082087	6.84	0.000	.5277699	.9534077
CP	-.2078512	.0569428	-3.65	0.000	-.3198432	-.0958592
BIxCP	.0295807	.0126642	2.34	0.020	.0046734	.054488
BOxCP	.0362605	.0140645	2.58	0.010	.0085993	.0639217
_cons	-1.47479	.2167178	-6.81	0.000	-1.901019	-1.048561
sigma_u	.35889446					
sigma_e	.20858521					
rho	.74750724	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(35, 351) =     3.79                 Prob > F = 0.0000

. xtreg ZSCORE FA FS BI BO BFE BA CP BIxCP BOxCP

Random-effects GLS regression                   Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.5959                         Obs per group: min =        11
       between = 0.8131                                        avg =      11.0
       overall = 0.6477                                        max =        11

                                                Wald chi2(9)       =    651.72
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ZSCORE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FA	.1054476	.0319658	3.30	0.001	.0427958	.1680994
FS	.198383	.032502	6.10	0.000	.1346802	.2620858
BI	.5745595	.1917265	3.00	0.003	.1987824	.9503366
BO	-.0374902	.0128484	-2.92	0.004	-.0626725	-.0123078
BFE	-.3926361	.0640129	-6.13	0.000	-.5180992	-.2671731
BA	.560263	.0973091	5.76	0.000	.3695408	.7509853
CP	-.2515316	.0566347	-4.44	0.000	-.3625335	-.1405297
BIxCP	.0470588	.0130713	3.60	0.000	.0214395	.0726782
BOxCP	.0504923	.0133713	3.78	0.000	.024285	.0766996
_cons	-.9627055	.1459037	-6.60	0.000	-1.248672	-.6767394
sigma_u	.05226051					
sigma_e	.20858521					
rho	.05906624	(fraction of variance due to u_i)				

Model 6

```
. xtreg ZSCORE FA FS BI BO BFE BA CP BIxCP BOxCP BFExCEO

Random-effects GLS regression                   Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.6388                         Obs per group: min =        11
       between = 0.8633                                        avg =      11.0
       overall = 0.6979                                        max =        11

                                                Wald chi2(10)      =    819.97
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ZSCORE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FA	.0945605	.0292702	3.23	0.001	.0371919	.151929
FS	.1884168	.0297925	6.32	0.000	.1300246	.246809
BI	.4511929	.1793751	2.52	0.012	.0996242	.8027616
BO	-.0236466	.0116734	-2.03	0.043	-.046526	-.0007672
BFE	-.3107064	.06037	-5.15	0.000	-.4290293	-.1923835
BA	.464251	.09055	5.13	0.000	.2867761	.6417258
CP	.2113063	.0799538	2.64	0.008	.0545997	.3680128
BIxCP	.0440077	.012231	3.60	0.000	.0200355	.0679799
BOxCP	.0607335	.0125207	4.85	0.000	.0361934	.0852735
BFExCEO	.0378721	.0049178	7.70	0.000	.0282334	.0475109
_cons	-.9357311	.1331846	-7.03	0.000	-1.196768	-.6746941
sigma_u	.04337805					
sigma_e	.19749202					
rho	.04602341	(fraction of variance due to u_i)				

```
. xtreg ZSCORE FA FS BI BO BFE BA CP BIxCP BOxCP BFExCEO ,fe

Fixed-effects (within) regression               Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.6707                         Obs per group: min =        11
       between = 0.6126                                        avg =      11.0
       overall = 0.5147                                        max =        11

                                                F(10,350)          =     71.29
corr(u_i, Xb)  = -0.7850                        Prob > F           =    0.0000
```

ZSCORE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FA	.2190775	.0410191	5.34	0.000	.1384026	.2997524
FS	.1785394	.0409806	4.36	0.000	.0979401	.2591387
BI	.378669	.183601	2.06	0.040	.017569	.739769
BO	-.2537439	.0574511	-4.42	0.000	-.3667366	-.1407511
BFE	-.297818	.0639873	-4.65	0.000	-.4236661	-.17197
BA	.6525586	.1033602	6.31	0.000	.4492733	.8558438
CP	.1832217	.0811699	2.26	0.025	.0235796	.3428638
BIxCP	.0278776	.0119936	2.32	0.021	.004289	.0514662
BOxCP	.0479024	.0134384	3.56	0.000	.0214722	.0743326
BFExCEO	.0316737	.0049144	6.45	0.000	.0220082	.0413391
_cons	-1.434511	.2052872	-6.99	0.000	-1.838263	-1.03076
sigma_u	.32385921					
sigma_e	.19749202					
rho	.72893412	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(35, 350) =     3.24              Prob > F = 0.0000
```

Model 7

```
. xtreg ZSCORE FA FS BI BO BFE BA CP BIxCP BOxCP ,fe

Fixed-effects (within) regression               Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.6316                         Obs per group: min =        11
       between = 0.5676                                        avg =      11.0
       overall = 0.4611                                        max =        11

                                                F(9,351)           =     66.88
corr(u_i, Xb)  = -0.8095                        Prob > F           =    0.0000
```

ZSCORE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FA	.2394086	.0431948	5.54	0.000	.1544553	.3243618
FS	.180216	.0432817	4.16	0.000	.095092	.26534
BI	.4247094	.1937671	2.19	0.029	.0436189	.8058
BO	-.2894541	.0603953	-4.79	0.000	-.4082362	-.1706719
BFE	-.3638862	.0667087	-5.45	0.000	-.4950851	-.2326872
BA	.7405888	.1082087	6.84	0.000	.5277699	.9534077
CP	-.2078512	.0569428	-3.65	0.000	-.3198432	-.0958592
BIxCP	.0295807	.0126642	2.34	0.020	.0046734	.054488
BOxCP	.0362605	.0140645	2.58	0.010	.0085993	.0639217
_cons	-1.47479	.2167178	-6.81	0.000	-1.901019	-1.048561
sigma_u	.35889446					
sigma_e	.20858521					
rho	.74750724	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(35, 351) =     3.79                 Prob > F = 0.0000
```

```
. xtreg ZSCORE FA FS BI BO BFE BA CP BIxCP BOxCP BFExCEO BAxCP,fe

Fixed-effects (within) regression               Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.6760                         Obs per group: min =        11
       between = 0.6112                                        avg =      11.0
       overall = 0.5159                                        max =        11

                                                F(11,349)          =     66.20
corr(u_i, Xb)  = -0.7858                        Prob > F           =    0.0000
```

ZSCORE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
FA	.2134669	.040815	5.23	0.000	.1331927	.2937412
FS	.1779401	.0407097	4.37	0.000	.0978729	.2580073
BI	.3648518	.1824757	2.00	0.046	.0059614	.7237421
BO	-.2533452	.0570704	-4.44	0.000	-.3655904	-.1411
BFE	-.2782252	.0640918	-4.34	0.000	-.40428	-.1521704
BA	.6525432	.1026749	6.36	0.000	.4506038	.8544827
CP	.1724943	.0807571	2.14	0.033	.0136624	.3313261
BIxCP	.0253076	.0119627	2.12	0.035	.0017795	.0488357
BOxCP	.0399554	.0137589	2.90	0.004	.0128946	.0670163
BFExCEO	.0317603	.0048819	6.51	0.000	.0221586	.0413621
BAxCP	-.0306473	.0128506	-2.38	0.018	-.0559217	-.0053729
_cons	-1.411953	.2041454	-6.92	0.000	-1.813463	-1.010443
sigma_u	.3259424					
sigma_e	.19618262					
rho	.73406574	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(35, 349) =     3.23             Prob > F = 0.0000
```

```
. xtreg ZSCORE FA FS BI BO BFE BA CP BIxCP BOxCP BFExCEO BAxCP

Random-effects GLS regression                   Number of obs      =       396
Group variable: firmid                          Number of groups   =        36

R-sq:  within  = 0.6453                         Obs per group: min =        11
       between = 0.8633                                        avg =      11.0
       overall = 0.7027                                        max =        11

                                                Wald chi2(11)      =    831.14
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ZSCORE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
FA	.094143	.0293944	3.20	0.001	.0365309	.151755
FS	.1809644	.0299979	6.03	0.000	.1221696	.2397592
BI	.4481292	.1782453	2.51	0.012	.0987748	.7974837
BO	-.0210367	.0118803	-1.77	0.077	-.0443216	.0022482
BFE	-.2922805	.0605561	-4.83	0.000	-.4109683	-.1735926
BA	.498446	.0909884	5.48	0.000	.320112	.67678
CP	.2025746	.07949	2.55	0.011	.046777	.3583722
BIxCP	.0407333	.0121804	3.34	0.001	.0168601	.0646065
BOxCP	.0515452	.0129835	3.97	0.000	.026098	.0769925
BFExCEO	.0376814	.0048821	7.72	0.000	.0281127	.0472501
BAxCP	-.0332395	.0130123	-2.55	0.011	-.0587431	-.007736
_cons	-.9249147	.1341075	-6.90	0.000	-1.18776	-.6620689
sigma_u	.04638956					
sigma_e	.19618262					
rho	.05295304	(fraction of variance due to u_i)				

Appendix IV: Hausman Test- Control Variables

	---- Coefficients ----			
	(b)	(B)	(b-B)	Sqrt (diag (V_b-V_B))
	Fe	Re	Difference	S.E.
FA	.3898261	.1976051	.192221	.0370548
FS	.4292047	.3873269	.0418778	.0361988

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 30.99
Prob>chi2 = 0.0000

Source (Field data, 2020)

Hausman Test – Direct Effect

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	Fe	Re	Difference	S.E.
FA	.264199	.1293333	.1348657	.0282924
FS	.1799043	.2124219	-.0325177	.0286222
BI	.5662027	.8786613	-.3124587	.
BO	-.3791747	-.0510206	-.3281542	.0570547
BFE	-.4163739	-.4755753	.0592014	.0097493
BMF	.903966	.7600691	.1438969	.038879

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 125.18
Prob>chi2 = 0.0000
(V_b-V_B is not positive definite)

Source (Field data, 2020)

Appendix V: List of All Commercial Banks

Company in Kenya
1. ABC Bank (Kenya)
2. Bank of Africa (BOA)
3. Bank of Baroda
4. Bank of India (BOI)
5. Barclays Bank of Kenya (Absa)
6. CfC Stanbic Holdings
7. Charter House Bank
8. Chase Bank Kenya
9. Citibank
10. Commercial Bank of Africa (NCBA)
11. Consolidated Bank of Kenya
12. Cooperative Bank of Kenya
13. Credit Bank
14. Development Bank of Kenya
15. Diamond Trust Bank (DTB)
16. Dubai Bank
17. Eco bank Kenya
18. Equatorial Commercial Bank
19. Equity Bank
20. Family Bank
21. Fidelity Commercial Bank Limited
22. First Community Bank
23. Giro Commercial Bank
24. Guardian Bank
25. Gulf African Bank
26. Habib Bank
27. Habib Bank AG Zurich
28. Housing Finance Company of Kenya (HFCK)
29. I&M Bank
30. Imperial Bank Kenya
31. Jamii Bora Bank
32. Kenya Commercial Bank (KCB)
33. Middle East Bank Kenya (MEB)
34. National Bank of Kenya (NBK)
35. NIC Bank
36. Oriental Commercial Bank (M'Oriental)
37. Paramount Universal Bank
38. Prime Bank (Kenya)
39. Sidian Bank (K Rep)
40. Standard Chartered Kenya
41. Trans National Bank Kenya (Access)
42. United Bank for Africa
43. Victoria Commercial Bank

Appendix VI: Research Permit

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