

**THE EFFECT OF CEO EDUCATION ON THE FINANCIAL  
PERFORMANCE OF FIRMS LISTED IN THE NAIROBI SECURITIES  
EXCHANGE: THE MODERATING ROLE OF CEO EXPERIENCE**

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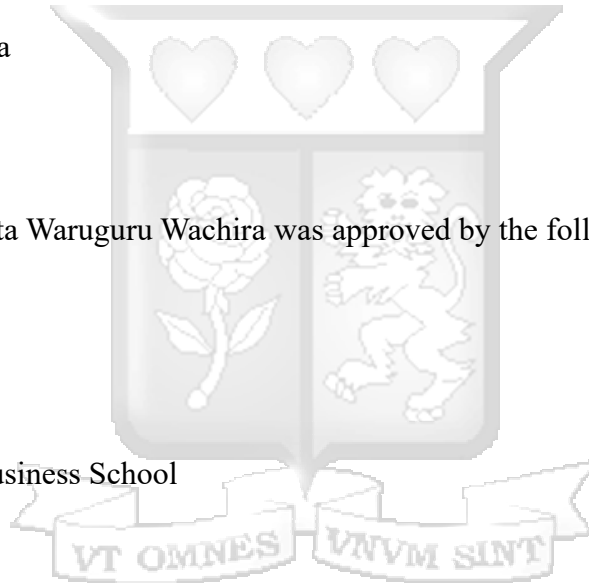
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## ABSTRACT

Companies often ask how to boost their financial performance. Extensive research highlights numerous factors influencing financial performance. One key factor is the education level of the executive directors. This study's main objective was to examine the effect of chief executive officer's (CEO) education on the financial performance of firms listed at the Nairobi Securities Exchange (NSE), with CEO experience as the moderating variable. More specifically, the study sought to examine the effect of the level of education on firm financial performance, the type of education on firm financial performance and the location of the educational institution on firm financial performance. To achieve these objectives, an explanatory research design was adopted in which both primary and secondary data was obtained from a population of 67 firms listed in the Exchange. Since the population was small, a census sampling methodology was applied and all the firms listed were included in the sample. A document review method was used to collect secondary data on the study variables. From the data analysis, there was a statistically significant positive correlation between financial performance as measured by return on assets and the level of education, suggesting that CEOs with higher levels of education are associated with better financial performance. The regression analysis further showed that that the level of education had a significant positive effect on financial performance, indicating that for every unit increase in the level of CEO education, financial performance increased. The analysis further showed a significant but weak negative correlation between the type of education and financial performance. This suggests that where CEO's education was more business oriented, financial performance would slightly decline. Lastly, the correlation and regression analysis showed that the location of the educational institution had a positive but insignificant correlation with financial performance. The location of the educational institution had no significant effect on performance as indicated by the weak regression coefficient. Introducing CEO experience as a moderating variable increased the R-squared value. This indicated that CEO education and experience together explained better the variance in financial performance. The interaction between CEO experience and level of education and type of education showed a significant moderating effect, suggesting that CEO experience enhances the impact of these educational dimensions on financial performance. However, the interaction between the location of the educational institution and financial performance was insignificant. The study therefore concluded that level of CEO education has a positive effect on financial performance. However, the type of education and location of educational institution have no effect on financial performance of NSE listed firms. The study therefore recommends that regulatory bodies such as the Capital Markets Authority (CMA) and NSE should encourage firms to prioritize hiring CEOs with higher levels of education, such as postgraduate qualifications. Firms should incorporate advanced educational qualifications as part of their executive recruitment criteria. Firms should prioritize candidates with MBA, master's, or PhD degrees as part of their leadership pipeline development strategies. This can improve overall firm financial performance and competitiveness.

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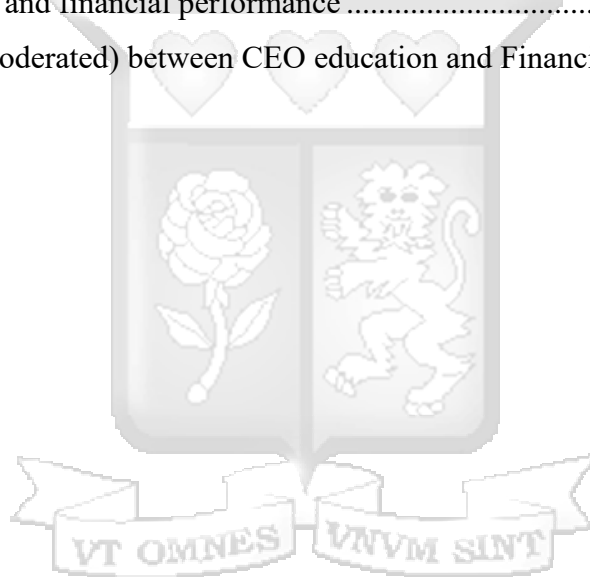
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# CHAPTER ONE

## INTRODUCTION

This chapter introduces the study. It begins with a comprehensive background on firm financial performance and more specifically the role played by Chief Executive Officer (CEO) qualification on firm performance narrowing down the context of the study to the Kenyan-based Nairobi Securities Exchange. The study investigates how a CEO's education level, field of study, and the institution's location impact company performance. In the problem statement, the chapter identifies gaps in literature that inform the current study and narrows down to the general and specific objectives of the study. Finally, the study highlights the contribution that the current study makes within the industry, and its academic contribution.

### 1.1 Background to the study

In the highly competitive environment of today, organizations must be able to assess their objective performance, subjective performance, and set up the necessary actions to achieve their strategies (Haddadi & Yaghoobi, 2014). 'Organization performance' encompasses a range of financial and non-financial metrics that measure how well an organization meets its goals and objectives (Kaplan & Norton, 1992; Bremser & Barsky, 2004; Singh et al., 2016).

Richard et al. (2009) distinguished organizational performance from organizational effectiveness. Organizational performance was defined to include financial results, market performance, and shareholder return, while organizational effectiveness encompassed broader measures like operational efficiency, customer satisfaction, corporate social responsibility, and other non-financial outcomes (Richard et al., 2009). Guided by this distinction, this study seeks to measure organizational performance from a financial perspective. Measures of organizational performance include return on assets, return on investment, total shareholder return, and market share (Jenatabadi, 2015; Richard et al., 2009).

Critics suggest that financial performance stems from effective operations and believe financial success naturally follows when the basics are done right (Kaplan & Norton, 1992). However, objective measures like financial metrics are generally more reliable compared to subjective measures, where managers might be inclined to exaggerate achievements and downplay deficiencies (Björkman & Budhwar, 2007; Singh et al., 2016). Further, empirical evidence suggests a strong correlation between objective and subjective measures (Dess & Robinson, 1984;

Richard et al., 2009). Dess and Robinson (1984) recommend the use of objective measures particularly where economic measurement was being conducted, and where there was availability of accurate data. This study therefore proposes objective measures, specifically financial performance.

Companies often ask how to boost their financial performance. Value creation has become a key measure for assessing firms in a competitive market. This focus on value drives companies to scrutinize their risk management or transfer strategies. Extensive research highlights numerous factors influencing financial performance (Assenga et al., 2018; Boadi & Osarfo, 2019). One key factor is the education level of executive directors (CEOs) (Fernández-Temprano & Tejerina-Gaite, 2020).

Executive managers are crucial in this process, and the company's success or failure is often attributed to them (Fernández-Temprano & Tejerina-Gaite, 2020). Executive managers continuously adapt to spur growth, manage complexity, and control costs. Similarly, recent financial crises have highlighted the importance of corporate governance and the actions of top managers within a company (Bandiera et al., 2020). Executive managers make strategic choices that are essential for the firm's survival. Their responsibilities are increasingly centered on investment decisions aimed at fostering growth and driving significant organizational change, with the goal of creating value. Ultimately, their decisions influence the performance of companies (Ghardallou, Borgi, & Alkhalifah, 2020).

The relationship between CEO education and a firm's financial performance is complex and varies by industry, region, and specific educational background. According to the National Bureau of Economic Research, the impact of CEO education also differs significantly across regions and industries. In lower-income countries, mismatches between CEO qualifications and firm needs can contribute to inefficiencies, accounting for up to 13% of the productivity gap compared to high-income nations (NBER,2023). Additionally, sectors with high research and development intensity and abstract processes tend to benefit more from CEOs with strong educational backgrounds, especially when paired with innovative leadership (NBER,2023).

Studies conducted globally regionally and locally also differ in their findings on CEO education and financial performance of firms. Bhagat et al. (2010) in a study conducted in the US reported that stock market reaction to announcements of appointments of CEOs with stronger educational

credentials is positive and creates significant abnormal returns. Falato et al. (2015) in a study in the UK also established that firms pay a premium to newly appointed CEOs with superior educational credentials. Further, Frydman (2007) and Murphy and Zbojnik (2007) describe the recent growth in business education as reaction to increasing demand for general managerial skills over technical skills. This shift in preference stems from the fact that firms have become considerably larger and more complex because of technological advances and innovations in business practices. In support, Chevalier and Ellison (1999) reported that fund managers who graduated from universities with tougher entry requirements, and managers with MBA awards, generated higher returns.

Regionally, Arumona, Erin, Onmonya, and Omotayo (2019) examined the relationship between board financial education and firm performance of companies operating in the healthcare sector in Nigeria. The result emphasized the relevance of financial education for board members irrespective of their educational background. They therefore recommend that financial literacy should be considered as a primary pre-requisite for appointments to corporate boards. Also, basic financial training should be a top priority for all firms to ensure optimum financial performance. Nashilyo, Nagriwum, and Nti-Kwakye (2024) also examined the influence of CEO education on the accomplishment of a company on corporate social responsibility performance in Namibia establishing that CEO education significantly influences sustainability success.

Locally, Nyakundi (2022) examined CEO characteristics and performance of firms in insurance industry. Contrarily, he established that CEO education had a significant negative effect on the financial performance of insurance companies in Kenya. Muhando, Guyo, and Moronge (2022) in a study of the hospitality industry in Kenya found that CEO attributes such as education had a positive and significant effect on performance of five star hotels. The study concluded that CEO education is significant in explaining performance of five-star hotels in Kenya. The above studies reveal contextual gaps that the current study intended to fill. Global studies such as Falato et al. (2015) and Bhagat et al. (2010) were conducted in advanced economies hence their study findings cannot be generalized to the Kenyan context. Similarly, the studies by Nashilyo, Nagriwum, and Nti-Kwakye (2024) and Arumona, Erin, Onmonya, and Omotayo (2019) were also conducted regionally in Namibia and Nigeria respectively whose findings cannot be applied in the Kenyan context. For the studies done locally, Nyakundi (2022) focused on the insurance sector and

Mhando, Guyo, & Moronge (2022) focused on the hospitality sector. This study hence focused on companies listed on the Nairobi Securities Exchange (NSE), seeking to establish a generalized finding across different sectors in Kenya.

### **1.1.1 Significance of a CEO**

The CEO is regarded as the final decision maker on matters relating to the vision and direction of the firm (Kokeno & Muturi, 2016). This study aims to test how a firm's senior officer's intellectual capacity predicts organizational outcomes. Specifically, this study sought to empirically test the upper echelons theory which proposed observable managerial traits such as education, to be predictors of organizational outcomes (Boyd et al., 2011; Hambrick & Mason, 1984).

### **1.1.2 Significance of education**

Nations and firms have been adjusting to the economic, social, political, and cultural challenges resulting from knowledge-driven markets over the last few decades (Aleixo et al., 2018). This is a confirmation to the knowledge-based view which was developed after observing the role of intellectual capital as a strategic resource for firms to gain competitive advantage (Curado & Bontis, 2006). “The only true lasting competitive advantage is knowledge.” (Nonaka, 2007). This study measured explicit knowledge through education.

The definition of education was guided by the upper echelons theory. Education referred to the formal process through which rich yet complex information was acquired to formulate the CEO's cognitive and skill base (Hambrick & Mason, 1984). Educated managers were found to have better cognitive abilities and could absorb and accept new ideas faster (Hitt & Tyler, 1991). They were more open to adopting new managerial strategies and even drastically change the corporate strategy (Lawrence, 1997).

### **1.1.3 Significance of the Nairobi Securities Exchange**

The NSE serves as a platform for trading financial securities and acts as a repository for audited financial statements of listed companies in Kenya. These financial statements adhere to consistent reporting standards, ensuring uniformity in presentation and data treatment. Consequently, this study utilized these standardized financial statements for a cross-sectional analysis while considering industry-specific effects (Irungu, 2019).

## 1.2 Statement of the Problem

Managerial background characteristics can partially predict organizational outcomes (Hambrick & Mason, 1984). These characteristics can be measured through various demographic proxies, including education, age, and functional background (Boyd et al., 2011). Results on how the characteristics impact financial performance has however been inconclusive (Darmadi, 2013; Kokeno & Muturi, 2016; Lindorff & Prior, 2013; Suherman et al., 2023). The upper-echelons theory proposed that firm performance will vary greatly where the firm's executives have little formal education in management than for firms whose managers are highly educated (Hambrick & Mason, 1984). Existing literature has also shown higher educational qualifications have been associated with higher firm performance. Specifically, CEOs with PhDs were seen to increase firm performance by at least 3.03 percent (Urquhart & Zhang, 2021). Further, CEOs with MBA degrees were linked to short-term improvements in a firm's operating performance (Bhagat et al., 2010). In contrast, other studies have found no strong evidence of a relationship between CEO's level of education and firm performance (Schultz & Pal, 2004; Zandi et al., 2015).

Studies conducted in advanced economies such as the UK and US have examined the relationship between CEO education and firm performance. Hambrick and Mason (1982) established that CEOs with business-related degrees did not perform better than "self-made" executives indicating no relationship between CEO education and firm performance, sentiments supported by Mintzberg (2004) who argued that MBA programs overemphasize the "science", or analysis, dimensions of management instead of the art and craft of management involving reflective practice, context and sharing of experiences. Contrarily, Bhagat et al. (2010) found that the appointment of CEOs with superior educational credentials resulted in significant abnormal stock returns in the United States. Similarly, Falato et al. (2015) identified a premium placed on CEOs with advanced degrees in the United Kingdom, further underscoring the value of formal education in executive leadership. Further, in US-based banks, institutions led by high quality MBA CEOs performed better than those headed by non-MBA CEOs (Lindorff & Prior, 2013). However, these findings may not be directly applicable to emerging economies such as Kenya, where institutional frameworks, economic structures, and industry dynamics differ considerably.

In some developing economies, such as Indonesia, evidence suggested that CEOs with Finance degrees had a negative influence on the firm's value (Darmadi, 2013). This means that there is

inconclusive evidence as to whether formal training from business schools contributes to the performance of a firm. Regional studies in countries like Nigeria (Arumona et al., 2019) and Namibia (Nashilyo et al., 2024) have highlighted the importance of financial literacy and education in enhancing firm performance. Still, these studies cannot be generalized to the Kenyan context due to varying economic and regulatory environments.

Locally, research on the impact of CEO education on firm performance remains inconclusive and specific to certain sectors. For example, Nyakundi (2022) reported a negative relationship between CEO education and financial performance in Kenya's insurance sector, while Muhando, Guyo, and Moronge (2022) found a positive correlation in the hospitality industry. These contradictory findings suggest that the influence of CEO education on firm performance in Kenya is context-dependent and may vary across different sectors. Despite the Nairobi Securities Exchange (NSE) being a critical driver of Kenya's economy, limited research exists on the influence of CEO education on the financial performance of NSE-listed companies. Existing studies have either focused on specific industries or non-financial metrics, leaving a gap in understanding how CEO educational attributes such as level of education, field of study, and institution type affect financial outcomes across different sectors.

This study sought to address these gaps by investigating the relationship between CEO educational qualifications and firm financial performance, specifically focusing on NSE-listed companies in Kenya. By leveraging published financial data and examining sectoral variations, the study's aim was to provide a comprehensive analysis of how CEO education influences key financial metrics, particularly return on assets (ROA), within the Kenyan context. This will offer valuable insights for stakeholders, including investors, corporate boards, and policymakers, on the strategic importance of executive education in enhancing firm performance and driving shareholder value.

### **1.3 Research objectives**

The primary aim of the study was to assess how a CEO's education impacts the financial performance of companies listed on the Nairobi Securities Exchange (NSE) and how CEO experience moderates this relationship.

#### **1.3.1 Specific objectives**

- i. To determine the effect of CEO's level of education on the financial performance of a firm.
- ii. To determine the effect of CEO's type of education on the financial performance of a firm.

- iii. To determine the effect of the location of the CEO's educational institution on the financial performance of a firm.
- iv. To determine the moderating effect of CEO experience on the relationship between CEO education and firm financial performance.

#### **1.4 Research questions**

The general research question was: What is the moderating effect of CEO experience on the relationship between CEO's education and the financial performance of a firms?

Specific research questions investigated were:

- i. What is the effect of CEO's level of education on the financial performance of a firm?
- ii. What is the effect of CEO's type of education on the financial performance of a firm?
- iii. What is the effect of the location of the CEO's educational institution on the financial performance of a firm?
- iv. How does CEO experience moderate the relationship between CEO education and firm financial performance?

#### **1.5 Scope of the study**

The scope of the study was to use empirical data to find the effect of CEO education on the financial performance of firms trading in the NSE. The study leveraged secondary data extracted from corporate websites and annual reports. Further, the study followed existing literature in using multivariate ordinary least squares regression model to establish the causal relationship between CEO's education and a firm's financial performance. This study focused on education as it is established as a determinant of corporative strategic decisions, and hence firm performance. Furthermore, given the important role CEOs perform in defining the strategy of the organization, the scope of this research was limited to the CEO role. This study investigated firms trading in the NSE for the year ended 2022 from which cross-sectional data on the study variables were obtained.

#### **1.6 Significance of the study**

The results of this study could be advantageous to various stakeholders.

##### **1.6.1 Significance to scholars**

The findings from this study will contribute to the body of empirical work testing the propositions made in the upper echelons theory. Specifically, this study will contribute evidence on the extent

to which formal education as a managerial characteristic can influence organizational outcomes as measured by performance levels.

### **1.6.2 Significance to human resources and board nomination committees**

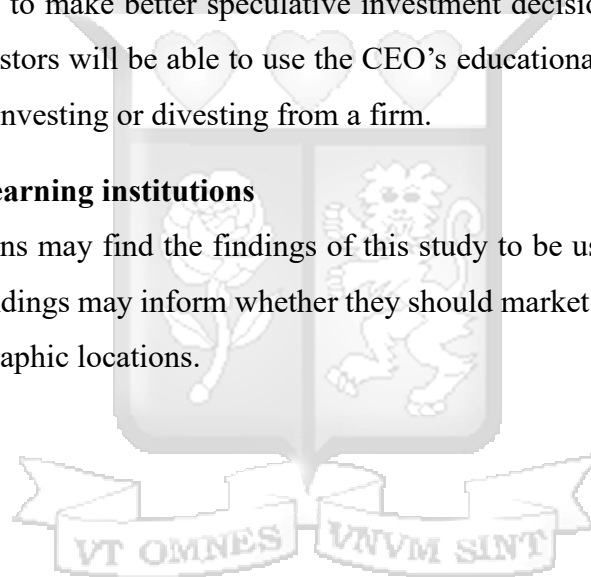
The findings will also be useful to human resources and board nomination committees who may consider intellectual competence prior to appointing a CEO candidate. The findings will be a useful background to justify the level of importance they should place on the educational background of candidates.

### **1.6.3 Significance to investors**

Similarly, investors who are limited by information asymmetry will find the findings of this study useful. They will be able to make better speculative investment decisions based off the findings from this study. The investors will be able to use the CEO's educational background information to guide their reason for investing or divesting from a firm.

### **1.6.4 Significance to learning institutions**

Lastly, learning institutions may find the findings of this study to be useful particularly for their marketing endeavors. Findings may inform whether they should market their programs to specific cadres and specific geographic locations.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter examined the conceptual dimensions and explored the existing theoretical and empirical literature on the relationship between CEO's education and a firm's financial performance. The gap in research is also noted. The chapter also described how to conceptualize and operationalize the research variables.

##### **2.1.1 Role of CEO in steering firm performance**

Strategic leadership is the capability of a seasoned senior leader to craft and implement plans and make significant decisions in a volatile, uncertain, complex, and ambiguous environment (Guillot, 2003).

According to Boal and Hooijberg (2000), there are three principles of strategic leadership: absorptive capacity (Cohen & Levinthal, 1990); adaptive capacity (Black & Boal, 1994); and managerial wisdom (Malan & Kriger, 1998).

Absorptive capacity is the capability to acquire knowledge. Boal and Hooijberg (2000) note that this involves the capability to recognize new information, assimilate it, and implement it. Although knowledge and learning may occur across levels in an organization, it is argued that those who occupy positions at the strategic apex of the organization have the unique ability to alter or reinforce existing action patterns within organizations (Boal & Hooijberg, 2000; Hambrick & Mason, 1984). Adaptive capacity is defined as the ability to change. Strategic flexibility is a necessary prerequisite for innovation and continuous learning that helps businesses adapt to the new competitive landscape while capitalizing on future opportunities (Hitt et al., 1998). For an organization to adapt, its leaders need to possess cognitive and behavioral complexity and flexibility (Boal & Hooijberg, 2000). Managerial wisdom encompasses discernment and Kairos time (Bartunek & Necochea, 2000). Discernment, also often referred to as social intelligence, is hereby defined as the ability understand social actors and their relationships whereas Kairos's time involves the capacity to take the right action at a critical movement (Boal & Hooijberg, 2000).

Guillot (2003) argued that strategic leaders are made, not born. Therefore, to become a strategic leader, a series of sequential steps must be pursued. At the base of these steps is the leader's values,

ethics, and moral standards. Following that would be the leader's basic skills, knowledge, and experience. Following that would be the ability to command responsibility and accountability; then the ability to exercise strategic thinking skills where Guillot (2003) noted that "further education in strategic-thinking skills enhances the officer's competence." The sequential steps are therefore amplified by access to a knowledge base. This therefore gives prominence to the role of a leader's absorptive and adoptive capacities as prerequisites to being a strategic leader.

The CEO is the ultimate authority on matters relating to the vision and direction of the firm (Kokeno & Muturi, 2016). Therefore, cognizant that other members of the top management team partake in strategic decision making, this study limited its scope to the role of a CEO in steering the performance of the firm.

### **2.1.2 Role of education**

Education is widely acknowledged as a key tool for increasing economic growth, competitiveness, and productivity (Benavides et al., 2020). As a result, many countries have sought to increase their knowledge base.

In 2019, Kenya's total university enrolment was 485,734 (KNBS, 2019). This was a 145 percent increment from the previous census conducted in the year 2009. The distribution of the 2019 enrollment was 89.5 percent undergraduate and 9.1 percent postgraduate. Comparatively, the 2009 enrollment was 82.6 percent undergraduate and 17.4 postgraduate (KNBS, 2009). Despite the decline in postgraduate enrolment, Kenya emerged as the top East African country sending students to schools in other countries (icef Monitor, 2023). In 2022, Kenya sent 5,790 students to the United States, 4,700 students to Australia and 2,800 students to the United Kingdom. This represented a 45 percent, 27 percent and 24 percent increment respectively, from the numbers recorded in the year 2019 (icef Monitor, 2023). Global level statistics display similar trends. The average share of 25- to 34-year-old with a tertiary education increased from 27 percent in the year 2000 to 48 percent in the year 2021. The share of international students increased by 70 percent over the same duration to reach 4.4 million (OECD, 2022). This growth in numbers suggests an appreciation for education at the macro level, with a particular upward trend in overseas education.

On a micro level, education serves as an important signaling tool in the job markets (Spence, 1973). When an individual is hired, the employer is unsure of his or her potential for productivity. Employers rely on personal information in the form of perceptible traits and attributes of the

applicant because they have incomplete information about the applicants (Spence, 1973). Education, prior employment, race, sexual orientation, criminal records, as well as a variety of other details, are all provided by the applicant. Some observable, individual characteristics - which together make up the impression a job applicant - are fixed, while others are alterable (Spence, 1973). For example, education is a malleable trait that an individual can control. Spence (1973) implies that a person's education level can reflect inherent traits like their intelligence, dedication, time management abilities, and capacity to follow instructions.

Evidence indicates that shareholders aim to hire highly skilled CEOs with the right qualifications to fulfill their objectives and ensure long-term success (Mukherjee & Sen, 2022). For instance, Bhagat et al. (2010) found that announcements of appointment of CEOs with stronger educational credentials resulted in a positive and significant abnormal stock market returns. However, the level and quality of CEO education has been linked to the performance differentials (Miller et al., 2015).

### **2.1.3 Nairobi Securities Exchange**

The Nairobi Securities Exchange (NSE) in Kenya, established in 1953, is a top African exchange offering products like equities, bonds, Exchange Traded Funds (ETFs), Real Estate Investment Trusts (REITs), derivatives, as well as data and training services for investors (NSE, 2022). The NSE's equities market is divided into four sectors: agriculture, commercial and services, financial, and industrial & allied. The bond market, on the other hand, is split into two categories: treasury bonds issued by the government and corporate bonds issued by companies (NSE, 2022).

NSE plays a key role in progressing Kenya's economy. NSE has linked borrowers to lenders, allowing for circulation of funds in the economy; educated the public on investments; and promoted good management of companies by asking them to provide periodic reports of their performance. As of end of the year 2022, the market capitalization of the NSE was KES 1,986 billion, representing 20.2 percent of the value of the gross domestic product for the same year. This proportion has been on a downward trend since a decade ago when it was 30.4 percent (CBK, 2022; CEIC, 2022).

Regulations in Kenya require all NSE listed firms to publish financial statements (Alfred, 2015; Kenya Law Reports, 2012). Part of the required information disclosures are variables that measure the efficiency of the firm in utilizing its resources to generate a shareholder return. This study therefore leveraged the information disclosed to assess the relationship between management's

education and the firm's efficiency to generate a return. Shareholder return is not the only measure of firm performance. However, "it is the fundamental scorecard for CEOs of public companies. And it is the same scorecard for everyone" (Hansen et al., 2013). This study focused on establishing the influence of CEO's education on shareholder's returns. Accounting returns was used to measure the financial performance of a firm. Specifically, the return-on-assets ratio was used given its variables reflect the internal financial metrics that a CEO can control (Mukherjee & Sen, 2022).

## **2.2 Theoretical Review**

### **2.2.1 Knowledge-based theory of the firm**

The proponents of the knowledge-based view (KBV) of a firm argued that resource and capability-based advantages are likely to derive from superior access to and integration of specialized knowledge (Curado & Bontis, 2006). Further, knowledge is a special strategic asset that does not depreciate over time as other resources would (Curado & Bontis, 2006). The main KBV proponent, Richard Grant, defined intellectual capacity to be the knowledge, skills, and attributes of each individual within an organization multiplied by the person's willingness to work hard (Grant, 1996; Harris, 2000).

Klein and Prusak (1994) argued that intellectual capital is the intellectual material that has been formalized, captured and leveraged to produce a higher-valued asset. Grant (1996) argued that moving employee training from focusing on specialist skills to more cross-training and job rotation is based on the idea that gaining broader knowledge at the cost of some specialist knowledge will improve organizational capabilities. Nonaka (2007) confirms the proposition and argues that the only true lasting competitive advantage is knowledge. To be efficient in today's economy, it is imperative for firms to become a knowledge-based organization (Curado & Bontis, 2006).

KBV is supported by the human capital theory which argues that individuals will seek to acquire knowledge and skills through education and training. This knowledge and skills will in turn improve their productivity at work and subsequently increase their wages (Harris, 2000) and (Marginson, 1989). However, while the education may improve the individual's productivity, it does not necessarily mean the firm's productivity, and hence output has also increased. The micro-macro paradox advances the argument that the impacts of education may differ at the individual level and the national level. (Monastyrenko, 2014a). Even further, signaling theorists assert that

education primarily serves as a means to showcase inherent traits like an individual's intelligence, dedication, time management abilities, and compliance with instructions (Spence, 1973). This does not necessarily translate into increased organizational performance. Lastly, the human capital theory, and KBV by extension, has been critiqued as it views education as a survival tool for businesses operating in uncertain times (Tan, 2014).

Therefore, while acquisition of knowledge and skills have been critiqued as sole contributors to firm performance, their part contribution has not been denied. For this reason, this study focused on the contribution of knowledge in driving firm performance. Following the works of Marginson (1989) and Harris (2000) which argue that knowledge is acquired through education, the concept of knowledge will be measured accordingly. As the concept of knowledge is intangible, it will be tracked using education as its metric. Education, as a metric for knowledge, is further expounded in the second theory underpinning this study, which is the upper-echelons theory. Therefore, in this study, education as a proxy for knowledge, will be tracked as the main variable and its correlation with firm performance. The scope of this study was therefore explicit knowledge which can be written down, and not tacit knowledge, which cannot be written down. The KBV underscores the critical role of knowledge and education in achieving and sustaining a competitive advantage. By applying this theory, the study provides a structured approach to understanding how CEO education contributes to the financial performance of listed companies in Kenya, while also acknowledging the limitations and complementary factors that influence firm performance.

### **2.2.2 Upper-echelons theory**

The upper-echelons theory suggests that the values and cognitive bases of those in management will influence the effectiveness of organizational strategies, and hence the outcomes. Observable managerial characteristics proposed to have an influence on organizational outcome are age, tenure in the organization, functional background, education, socioeconomic roots, and financial position (Hambrick & Mason, 1984; (Neely et al., 2020). Hambrick and Mason (1984) are the main proponents and propose that a person's formal educational background may indicate a person's knowledge, skill base, and to some extent as an indicator of a person's values and cognitive preferences. Hitt and Tyler (1991) recognized that education could determine choice of corporative strategic decision models and hence determine the firm performance.

However, the theory proponents acknowledge the main limitation to be the bypassing of complex psychological issues that would otherwise influence managerial decision making (Hambrick & Mason, 1984). This limitation was later coined into the black box problem, which is the use of demographic indicators such as explicit education leaving one at a loss as to the real psychological and social processes that are driving executive behavior (Lawrence, 1997).

Therefore, in line with this theory, the primary emphasis of this study was on observable managerial characteristics influencing strategic firm decisions. Leveraging the arguments in favour of KBV, and the education-related propositions within the upper-echelons theory, knowledge and skills were the managerial characteristic under investigation. The theory was relevant to this study as it suggests that the education, experience, and other demographic characteristics of CEOs are crucial determinants of their cognitive frameworks and values. These characteristics influence how CEOs perceive opportunities and threats, which in turn affects their strategic choices. In this context, CEO education can be seen as a vital component of their cognitive base, potentially affecting the financial performance of the organization. The Upper-Echelons Theory provided a valuable framework for examining the influence of CEO education on the financial performance of listed companies in Kenya. By linking educational background to cognitive frameworks, strategic decisions, and organizational outcomes, the theory underscored the importance of understanding how demographic characteristics, particularly education, shape executive behavior and impact firm success. This theoretical lens helped the study analyze the extent to which CEO education contributes to financial performance, offering insights into the strategic value of human capital at the executive level.

## **2.3 Empirical literature review**

### **2.3.1 Level of CEO's education and the financial performance of a firm**

Upper echelons theory suggests that better educated CEOs have greater cognitive ability to process information and adapt to sophisticated information. As a result, better strategic choices and hence superior organizational outcomes would be achieved (Hambrick & Mason, 1984). Specific to level of management education, the theory proposes there being no relationship between the amount of formal management education of top management and the average firm's performance measured by profitability or growth (Hambrick & Mason, 1984). Therefore, where the level of general

education may be of significant influence on firm performance, the amount of management education may not be as significant.

Kokeno and Muturi (2016) used an explanatory research design to test Hambrick and Mason's theory by examining the impact of CEO education on return-on-assets (ROA) for companies listed in the NSE from 2008 to 2014. Data was sourced from published annual reports and financial statements. Using a multiple linear regression model without controlling any variables, they found that education levels influenced a firm's financial performance. They recommended those in management to have a broad educational background than a specialist knowledge (Kokeno & Muturi, 2016).

Similar studies from Indonesia, another developing market, demonstrated a significant association between CEO's education and the firm's financial performance. Darmadi (2013) conducted a similar study in the Indonesian Stock Exchange (IDX), but with the addition of board members to the analysis. The study hypothesized that postgraduate degrees held by board members and CEO were positively associated with firm performance. Excluding financial firms due to their unique regulations, and excluding firms with negative book values of equity, Darmadi (2013), analyzed 160 firms listed in the IDX from a population of 383 firms. The study controlled for family control and firm size and used ROA and Tobin's Q as measures of firm performance. The study employed ordinary least squares (OLS) regression models for the analysis. Following previous studies so as to have comparable findings, Darmadi (2013) ran multivariate regressions separately for the CEO. Where level of education was regressed against ROA, a positive and significant relationship was found at a 5 percent confidence level. The study found that CEOs with higher education levels tend to provide firms with market advantages. A postgraduate degree may boost a CEO's strategic capabilities and enhance their social networks, potentially increasing the firm's market value (Belliveau et al., 1996; Darmadi, 2013).

Suherman et al. (2023) conducted a similar study in IDX. The study used balanced firm-level panel data for 203 non-financial companies listed in the IDX between 2010 and 2020. Similar to Darmadi (2013), financial companies were excluded on account of having sector-specific regulations on who can be in management. Similarly, firms with negative book values of equity were excluded. Suherman et al. (2023) further excluded companies who issued financial statements in foreign currencies other than rupiah. ROA, ROE and Tobin's Q were used to measure firm performance.

The data was analyzed using panel data regression analysis. The study found a significant and positive association with Tobin's Q and ROA. They concluded that CEOs with higher education levels performed better than CEOs without postgraduate degrees (Suherman et al., 2023).

Ghardallou et al. (2020) looked at a sample of 120 listed firms on Saudi Arabia's Tadawul stock exchange from 2014 to 2017. Like the studies in the IDX, this study excluded financial firms due to their specific nature in terms of reporting standards. Data on the financial performance of the firms was obtained from annual reports on the Tadawul stock exchange. Education data was collected from the CEO's CVs and social media platforms. This study used a panel model so as to treat unobserved heterogeneity problems (Yasser & Mamun, 2017). The researchers used GMM estimator developed by Arellano and Bond (1991) to estimate the regressions. CEO characteristics were assumed to be exogenous, and all other explanatory variables were assumed to be endogenous. Firm performance was measured by ROA and ROE to measure accounting performance and Tobin's Q to measure market performance. The findings differed based on the measure of financial performance. The study found coefficients associated with postgraduate to not be significant when using ROA and ROE, but positive and significant when using Tobin's Q. This was interpreted to mean that companies with CEOs who held a masters, MBA or PhD would improve the firm value but not the accounting profitability. The study suggests that while investors would perceive high level of CEO's education as a good motivation to invest in the company, the education is no guarantee of managing firms successfully (Ghardallou et al., 2020). These empirical studies evidence findings similar to works of Gottesman & Morey (2010), King et al. (2016) and Naseem et al. (2019).

Studies from developed markets suggested different outcomes on the level of influence education had on firm performance. Research on companies in the British, French, Italian, Spanish, German, and Dutch stock markets revealed that education had little impact on their financial performance (Morresi, 2017). The study which excluded financial firms, followed CEOs from 2006 to 2015. This study had a sample of 612 CEOs who worked across 434 firms in Europe. The dependent variable measure, firm performance, was calculated as a 3-year and 5-year relative change in ROA, ROE, market-to-book ratio, and stock returns, following the appointment of a CEO. Following Bertrand and Schoar (2003), the study assumed a 3- or 5- year period after the CEO appointment to expect changes in performance. Therefore, CEOs whose tenure was less than three years were

excluded from the study. Findings from this developed market shows that having a PhD, MBA, or other graduate degrees doesn't necessarily lead to better managerial skills or higher performance (Morresi, 2017).

Gottesman and Morey (2010) who found no relationship between CEO's education and financial performance of 390 US firms, attempted to give a logical reason for these findings. They proposed that there is a wide time gap between when a CEO attained their education and when they became CEO. Over that time, the CEO will have acquired lifetime skills that qualify him or her to attain that CEO position. CEO education will thereby be only but a small factor to how a firm performs (Gottesman & Morey, 2010). In their study design, Gottesman and Morey (2010) used an out of sample approach. While their sample period was from the year 2000 to 2003, they used CEO data as of the year 2000. Firm performance data, measured by Tobin's Q, was constructed as the annual average for the period between 2000 and 2003. The researchers used this out-of-sample method to evaluate performance over a considerable span of four years (2000 to 2003). They explained that analyzing annual performance by collecting data on all CEOs every year would restrict the evaluation period to a narrow timeframe, which might not be sufficient to precisely gauge a CEO's impact on their firm (Gottesman & Morey, 2010).

Similarly, a study from India sought to evidence the impact of CEO attributes on financial performance, corporate reputation, and corporate sustainable growth. A sample of 200 listed companies was selected and data collected for the years 2010 to 2017. A static panel data technique was used to investigate the impact of CEO education on firm performance as measured by ROA. To account for alternative factors that could influence the financial performance, they controlled four variables, namely: firm leverage, firm size, tangibility, and productivity. The study found no notable association between CEOs with advanced education such as a postgraduate degree or professional degree or PhD education and the financial performance of a firm (Mukherjee & Sen, 2022).

Therefore, literature indicates a consensus on how to measure level of education. Postgraduate degrees have been interpreted to be higher levels of education. This therefore assumes that undergraduate degrees and education below undergraduate level, may be categorized as low level of education (Darmadi, 2013; Ghardallou et al., 2020; Kokeno & Muturi, 2016). There is a varied preference for firm performance measures. While ROA, ROE and Tobin's Q have been utilized

across different studies, ROA has been the most consistently used measure. Lastly, there is somewhat consensus on using point-in-time data to correlate performance to the CEO. Moressi (2017) acknowledges that the effects of a CEO appointment are not immediate. Gottesman and Morey (2010) employs an out-of-sample technique with financial measures averaged financial performance data which was compared to a point in time CEO education data. Moressi (2017) however, similar to Darmadi (2013), utilized a point in time financial measure, to be compared against the point in time CEO education data.

### **2.3.2 Type of CEO's education and the financial performance of a firm**

“Granted, people make their educational decisions at a relatively early age, with incomplete information, and they sometimes later transcend those decisions. But, on average, it could be expected that students enrolled in an English literature curriculum are somewhat different from students enrolled in a business curriculum.” (Hambrick & Mason, 1984).

Bantel and Jackson (1989) observed that educational curriculum choices align with personalities, attitudes, and cognitive styles. Individuals trained in management or economics were found to make informed decisions in complex situations, better accept innovative solutions, and manage difficulties and uncertainties effectively (Bantel & Jackson, 1989; Ghardallou et al., 2020).

King et al. (2016) found evidence to suggest an MBA encourages innovation. They sampled 149 publicly listed US banks between 1992 to 2011. Data was collected from databases and call reports sourced from the Federal Reserve Bank of Chicago. Education was measured as undergraduate, MBA and PhD education. Bank performance was measured with an industry adjusted ROA. The ROA was adjusted to eliminate industry-wide components that are driven by factors beyond the CEO's control. This study controlled for bank specific attributes such as charter value, non-interest income and deposits. This study found that CEOs with higher MBAs performed better than their peers. It was found that MBA CEOs would tend to take on innovative yet riskier projects, thus resulting in superior bank performance of up to 11.4 percent (King et al., 2016).

Subsequent studies narrowed down the discipline into finance and related disciplines. Arumona and Erin (2019) investigated the relationship between board financial education and firm performance of companies operating in the healthcare sector in Nigeria. The sample included six listed firms in Nigeria's healthcare sector between 2011 to 2017. Board education was measured with finance-related degree variables whereas firm performance was measured with ROA. A panel

regression analysis, accounting for firm size, revealed that board members with finance education positively and significantly impact firm performance. More board members with finance degrees led to better performance in Nigerian healthcare companies (Arumona & Erin, 2019).

Ghardallou et al. (2020) sought to understand the role of a business degree on a firm performance. They hypothesized that a CEO with a degree in business administration, economics, finance, or accounting is naturally better equipped to manage a company. Controlling firm size, leverage, sales growth and tangibility, they employed a panel model. With field of study and the independent variable, and ROA, ROE and Tobin's Q as the dependent, equations were tested using a GMM estimator. The study found evidence to suggest that CEOs with degrees in management or economics are better equipped to run a company and hence will likely enhance the firm's performance (Ghardallou et al., 2020).

Similarly, Silvina, Robin and Yuwono (2022) hypothesized that CEOs with majors in economics, management, business, or accounting increase firm performance. The study used secondary data of 180 firms listed in the Index LQ45 IDX between 2017 and 2020. Following Ghardallou et al. (2020) and Lindorff & Prior (2013), this study measured education as either in economic, management, business, or accounting or other fields of study. Firm performance was measured using the Tobin's Q. This study controlled for CEO gender and age. The study found a positive and significant relationship between CEO education in economics, management, business or accounting, with firm performance.

Despite this evidence, business education has been under scrutiny over the past few years (Bennis & O'Toole, 2005; Gosling & Mintzberg, 2004; Pfeffer & Fong, 2002). The main critique has been that the curriculum, particularly for MBA programs, is overly scientific and lacks teaching the softer parts of management and leadership. Mintzberg and Gosling (2004) are the main proponents of this critique arguing that current MBA curriculum is focused on business functions and less on managing practices. In support, Hambrick and Mason noted that because business schools placed a lot of emphasis on complex administrative systems, firms whose top management had substantial formal management education were likely to have thorough formal planning systems, rather than innovative or risk-taking tendencies (Hambrick & Mason, 1984).

Gottesman and Morey (2010) hypothesized that there would be no relationship between a CEO's type of education and a firm's performance. Type of education was measured by MBA versus other

degree variables, whereas firm performance was measured by Tobin's Q. The study observed 390 US firms between 2000 and 2003. The study found no significant relationship to suggest that the type of education influenced firm performance. Specifically, they found that firms with MBA CEOs performed no differently than firms with non-MBA CEOs i.e. those who held non-liberal arts undergraduate degrees, law degrees, or liberal arts undergraduate degrees (Gottesman & Morey, 2010). The authors justified this indifference to time. The period between a CEO earning their degree(s) and becoming a CEO might be long enough to reduce any advantage gained from specific or selective education (Gottesman & Morey, 2010). Furthermore, the authors agreed with Mintzberg, stating that business school programs lack the necessary training for a CEO to improve company performance (Gottesman & Morey, 2010; Mintzberg, 1996; Pfeffer & Fong, 2002).

Lindorff and Prior (2013) sought to find out whether a business degree held by a CEO added value to their firm. The sample of this study consisted of 183 organizations. Firm performance was indicated by return to shareholders as measured by dividend and share price change. The study collected the firm's three-year and five-year return to shareholders from an online database for a point in time, i.e., 30 June 2011. Similarly, CEO education was collected from company websites, and biographical information available on other websites. The CEO's business education was found to have no influence over the firm's financial performance (Lindorff & Prior, 2013). Justifications to the limited influence of business degrees was linked to the fact that one individual's knowledge may not have a significant influence on the overall firm performance; that tacit knowledge influenced management and hence performance; and that other external or unexplained factors may have affected findings (Lindorff & Prior, 2013).

Literature therefore suggests consensus in the distinction of fields of study as business related and non-business-related studies. There is somewhat consensus on how firm performance is measured. Most of the studies utilized either ROA or Tobin's Q. There was also the introduction of new measures such as shareholder return. There is no agreement on whether a CEO's education type significantly affects firm performance. Considering the empirical evidence presented above, this study proposed that business education would not substantially influence a firm's financial performance.

### **2.3.3 Location of CEO's education and the financial performance of a firm**

The quality education predicts career progression (Judge et al., 1995) and career success enhances operational performance (Curtis et al., 2009) and hence organizational success (Judge et al., 1999). King et al. (2016) suggests that the quality of the educational institution, hence its location influences the quality of the academic qualification attained, and hence the CEO skill-sets acquired, leading to different organizational outcomes (Miller et al., 2015).

The concept of quality education is yet to be defined. In their paper on defining Quality, Harvey and Green (1993) noted that the definition was 'stakeholder-relative'. They observed that students and lecturers often emphasize the educational process, whereas employers tend to focus on the outcomes of higher education. Consequently, quality cannot be considered a single, unified concept (Harvey & Green, 1993). Their study provided a heuristic framework that attempted to define quality and based quality on five key aspects which included exception where a set of minimum standards are surpassed, perfection meaning zero defects, fitness for purpose, value for money and transformation means that education is about doing something to the student as opposed to something for the consumer (Harvey & Green, 1993; Kis, 2005). For all these characteristics, the location of the learning institution was critical.

Watty (2003) recommended the removal of perfection citing that there cannot be defect-free graduates. Lomas (2002) conducted a small-scale research with some UK-based senior managers in higher education institutions. The findings from this research were that fitness for purpose and transformation were the most appropriate definitions for quality. Despite this, Vroeijenstijn (1991) as cited in Harvey and Green (1993) said it is a waste of time to try to define quality. Watty (2003) justified this by saying that was an inherent lack of consensus between academics and other stakeholders with regard to what is meant by 'quality' in the context of the current higher education environment. Despite the absence of quorum, researchers agree that superior quality educational experience at universities is acknowledged by a high world ranking (Dill & Soo, 2005; Harvey & Green, 1993; King et al., 2016).

University rankings are marketing tools used to attract candidates in a globally competitive environment, as well as being used as a useful tool for firms to evaluate an applicant's skills. The first national university ranking dates to 1983 when the US News and World Report initiated an annual publication on America's Best Colleges (Morresi, 2017). Two decades later, the first

international university ranking was published to meet the growing needs for foreign studies. This ranking was called the academic Ranking of World Universities from the US and UK were ranked the best in the world, followed by Canada and the far east (Morresi, 2017). These national university rankings have however been criticized on the grounds that they have unreliable data; they do not measure what they claim to measure; and they have no statistical validity (Bowden, 2000). International rankings are limited in a similar manner. Morresi (2017) noted that not only is it hard to compare different university systems, but also that the data is collected via questionnaire thus affecting the objectivity of the responses (Morresi, 2017). They acknowledged that universities would falsify information to get to a better position. Even further, Monastyrenko (2014) found a university's ranking to be irrelevant to a firm's performance.

Literature suggests that for developed economies, university ranking is the commonly used indicator for quality education (Gottesman & Morey, 2010; King et al., 2016; Miller et al., 2015; Monastyrenko, 2014b; Morresi, 2017). Literature from developing economies, however, suggests that a country's economic status is the commonly used indicator for quality education. Global economic categorizations such the International Monetary Fund's (IMF) country classification and the Human Development Index (HDI) (Darmadi, 2013; Silvina et al., 2022) have been used to indicate the quality of education. Following IMF's categorization of the world into two major groups: advanced economies and emerging economies, the assumption used is that countries classified as advanced would provide superior quality education compared to the emerging economies. Therefore, given this study was conducted in Kenya, an emerging economy according to IMF's country classification, and following precedence set by Darmadi (2013) and Silvina et al. (2022), an assumption was made that education acquired from advanced economies would be of higher quality.

To the best of the researcher's knowledge, there was limited evidence from emerging economies measuring the influence of a CEO's foreign education on firm performance. Similar sentiments were observed by Darmadi (2013) and Kokeno and Muturi (2016). Much of the available evidence was from advanced economies who measured quality of education based on university rankings. While the findings from these advanced economies have been mixed, findings from emerging economies, though limited, have shown a significant and positive influence.

Darmadi (2013) hypothesized that academic degrees from developed countries were positively associated with firm performance. The study investigated 160 firms listed in the IDX in 2007. The dependent variables were ROA as a measure for profitability, and Tobin's Q as a measure for firm value. Using an OLS regression model, the hypothesis was tested. The findings were significant and positive, suggesting that firms led by CEOs holding degrees from prestigious universities performed significantly better than those without (Darmadi, 2013).

Similarly, Silvina et al. (2022) conducted the same study on 180 firms listed in the same IDX. This study, however, covered a slightly longer duration of three years, running from 2017 to 2020. Firm performance was measured by Tobin's Q and used location of educational institution as a robust check in the model. When testing for robustness, the model findings suggested that quality education, measured by having graduated overseas, had a significant and positive impact on firm performance (Silvina et al., 2022).

Several authors from advanced economies have conducted similar studies but used university ranking as their indicator for quality education. Morresi (2017), for instance, used the Webometrics Ranking, QS World University Rankings, and Times Higher Education Rankings to measure university quality. It focused on firms listed in British, French, Italian, Spanish, German, and Dutch stock markets. The goal was to see if CEOs from top-ranked universities led to better firm performance. By assessing 3-year and 5-year changes in ROA, ROE, and stock returns, it found no significant link between attending a prestigious university and superior company performance (Morresi, 2017). The author commented that the findings were plausible due to inherent bias limitations of university rankings. Furthermore, that a good university does not imply a better student, and a better student does not imply an excellent manager (Morresi, 2017).

Monastyrenko (2014) established that more prestigious education of CEO, including MBAs, did not have an impact on performance. In this study, prestigious education was identified by global ranking in the Academic Ranking of World Universities. The sample consisted of firms in 18 European countries. Monastyrenko (2014) concluded that the absence of influence was due to the "effort effect". This meant that since graduates of less prestigious universities would be discriminated against, they would work harder and longer, leading to better firm outcomes. The study further added that at some point along the career of a CEO, formal education becomes

insignificant, and social capital and applied skills determine the performance difference (Monastyrenko, 2014b).

These findings were similar to those of Gottesman and Morey (2010) who found no relation between education selectivity and firm performance. High education selectivity was defined as schools with high entrance exam scores. The sample of the study consisted of CEOs managing NYSE listed firms between January 2000 and December 2003. The study rationalized these findings suggesting that CEOs graduating from less selective universities would often overcompensate through superior performance.

Bhagat et al. (2010) argued that educational attainment was a poor proxy for CEO ability. The study sampled 1,500 US firms for a period ranging from 1992 to 2007. The objective was to establish the effect of CEO attending a top 20 undergraduate or master's program on firm performance. The study used the U.S. News & World Report's 2008 ranking for the analysis. They found that while short-term performance measured by ROA may improve, medium to long-term performance as measured by stock return and Tobin's Q is not affected.

Therefore, evidence from advanced economies is mixed. Depending on the proxy used to measure firm performance, the impact of CEO's quality education on firm performance may differ. Accounting metrics to proxy firm performance was found to yield a positive correlation (Bhagat et al., 2010) whereas market based indicators such as the Tobin's Q and stock market performance yielded mixed results (Darmadi, 2013; Morresi, 2017). A significant amount of the present literature is from advanced economies. The contribution of this study would be to add empirical evidence from an emerging market.

#### **2.3.4 Moderating role of CEO experience**

According to Cope (2005), there is no one way that businesses learn; instead, different businesses may use different learning paths and processes. Learning is a cumulative and path-dependent process (Wang, 2008). The notion holds relevance in contemporary businesses due to the CEO's role in enhancing corporate value. CEO education has been proposed to have a major impact on an organization's financial performance based on the theoretical and empirical research mentioned above (Bhagat et al., 2010). However, an individual's level of experience can either limit or boost the impact of education on business performance. According to Hamori and Koyuncu (2015), the association between CEO education and business performance is influenced by the CEO's

experience in the industry. Huang et al. (2023), who found a positive moderating influence of CEO experience on business performance, also corroborate their views. Previous experience indicates that information-based learning in a leadership capacity can help one learn from past errors and steer clear of them in future undertakings (Deakins & Freel, 1998). According to earlier studies, leaders are better able to recognize and seize new possibilities when they possess both superior individual judgment and prior experience (Westhead, & Wright, 2009). Therefore, the number of years of CEO experience was considered as a moderating variable in this study.

## **2.4 Knowledge gaps**

The empirical literature presented above highlights various research gaps that the current study intended to fill. First, a wealth of studies had been done in developing countries on how the level of education of CEO's influence firm performance of firms with varied results. For instance, King et al (2016) in a study in the US established a positive relationship between CEO education and financial performance, results that agreed with those of Darmadi (2013). However, authors such as Morresi (2017) established that education did not influence firm value. These studies present a contextual gap as they were done in the developing countries and hence their results cannot be generalized in the Kenyan context. Secondly, previous studies have adopted different methodologies. For instance, Ghardallou et al. (2020) applied the GMM estimator to establish the causal relationship between CEO education and financial performance establishing a positive causal relationship between the two. This study, in contrast, adopted the multiple linear regression model to determine if similar or different results would be established.

Finally, a conceptual gap had been identified in the literature reviewed with different studies exploring different concepts and variables. For instance, Lindorff and Prior (2013) measured firm performance using dividend and share price of stocks. Gottesman and Morey (2010) and Monastyrenko (2014) focused on firm value measured by Tobin Q as the dependent variable. This study contrarily focused on ROA as a financial metric of performance. The current study sought to bridge these gaps by focusing on listed firms at the Nairobi Securities Exchange and would incorporate leverage and firm size as control variables.

Table 2.1. shows a summary of the knowledge gaps identified from this review of literature.

**Table 2.1. Summary of knowledge gaps**

<b>Study</b>	<b>Focus of study</b>	<b>Findings</b>	<b>Research gap</b>	<b>Focus of current study</b>
(Kokeno & Muturi, 2016). Effects of Chief Executive Officers' characteristics on the financial performance of firms listed at the Nairobi Securities Exchange.	The influence of CEO's age and level of education on financial performance of Companies listed at the NSE.	The level of CEO's education has an influence on firm performance.	Authors did not look at the influence of the type of education and the influence of the place of the educational institution.	This study focused on type of education and the influence of location of education institution on firm performance.
King et al. (2016) What's in an education? Implications of CEO education for bank performance.	The impact of MBA on bank performance.	Banks led by high quality MBA CEOs perform better than the banks headed by non-MBA CEO.	This study only focused on the banking sector based in the USA.	The study looked at all sectors represented in the Nairobi Securities Exchange.
Darmadi, (2013) Board members' education and firm performance: evidence from a developing economy	Whether academic degrees obtained by board members and the CEO from prestigious domestic universities	Firms led by CEOs with qualifications from prestigious universities exhibit significantly higher profitability	The analysis was only focused on Tobin Q as a measure of firm value.	The current study explored a conceptual gap as the financial aspect of performance measured by ROA was explored.

	influence firm performance.	compared to their peers.		
Suherman et al. (2023) CEO characteristics and firm performance: evidence from a Southeast Asian country.	The influence of CEO level of education on firm performance of firms located in Indonesia's stock exchange.	CEOs with higher education levels performed better than CEOs without postgraduate degrees.	The study was carried out in the Indonesia therefore there existed a contextual gap that the current study sought to fill.	This study sought to find out whether the type of education and the influence of location of education institution has an impact on firm performance in the Nairobi Securities Exchange.
Ghardallou et al. (2020) CEO characteristics on performance of firms listed at the Tadawul stock exchange	CEO level of education whether a masters or PhD will improve accounting profitability.	CEOs who held a masters, MBA or PhD improved the firm value but not the accounting profitability	A conceptual gap was explored since the study focused on Tobin Q and ROE as the valuation measure.	The current study focused on ROA as the financial performance measure.
Morresi (2017) How Much is CEO Education Worth to a Firm?	CEO level of education on financial performance measured by	Education did not have a strong influence over a firm's financial performance	The study was carried out in Europe therefore there existed a contextual gap	This study focused only on type of education and the influence of

Evidence from European Firms	ROA, ROE, market to book ratio and stock returns.		that the current study sought to fill.	location of education institution on firm performance in Kenya.
Gottesman and Morey (2010) CEO's education and financial performance of 390 US firms	CEO level of education on firm performance measured by Tobin Q.	No relationship between CEO's education and financial performance.	The study was carried out in the US therefore there existed a contextual gap that the current study sought to fill.	This study focused only on type of education and the influence of location of education institution on firm performance in Kenya.
Mukherjee & Sen (2022) Impact of CEO attributes on financial performance, corporate reputation, and corporate sustainable growth	Impact of CEO education on firm performance as measured by ROA, corporate reputation, and corporate sustainable growth.	The study found no notable association between CEOs advanced education and the financial performance of a firm.	The study was carried out in India therefore there existed a contextual gap that the current study sought to fill.	This study focused only on type of education and the influence of location of education institution on firm performance in Kenya.
Arumona and Erin (2019). The relationship	Focus was on Nigeria's healthcare sector	The study found that board members with a	The study was carried out in Nigeria and	This study focused only on type of

<p>between board financial education and firm performance of companies operating in the healthcare sector in Nigeria</p>	<p>between 2011 to 2017. Board education was measured with finance related degree variables whereas firm performance was measured with ROA</p>	<p>finance educational background had a positive and significant influence on firm performance.</p>	<p>focused on the healthcare sector therefore there existed a contextual gap that the current study sought to fill.</p>	<p>education and the influence of location of education institution on firm performance in Kenya.</p> <p>Further, the study looked at all sectors represented in the Nairobi Securities Exchange.</p>
<p>Ghardallou et al. (2020) the role of a business degree on a firm performance</p>	<p>Focus was on education and performance. Performance was measured using ROA, ROE and Tobin's Q as the dependent, equations.</p>	<p>The study found CEOs with degrees in management or economics enhance the firm's performance.</p>	<p>A methodological gap was explored as the study applied the GMM estimator.</p>	<p>The current study applied the multiple linear regression model to test for the causal relationship.</p>
<p>Silvina, Robin and Yuwono (2022) CEO education and</p>	<p>Focus was on 180 firms listed in the Index LQ45 IDX between 2017</p>	<p>A positive and significant relationship between CEO education in</p>	<p>The study was carried out in US and focused on the healthcare sector therefore</p>	<p>This study focused only on type of education and the influence of</p>

firm performance	and 2020. It looked at CEO education, gender and age against Tobin Q.	economics, management, business or accounting, with firm performance was found.	there exists a contextual gap that the current study sought to fill.	location of education institution on firm performance in Kenya. Further, the study looked at all sectors represented in the Nairobi Securities Exchange.
Lindorff and Prior (2013) Impact of education held by a CEO on firm value.	Focus was on firm performance as indicated by return to shareholders and measured by dividend and share price change.	The CEO's business education was found to have no influence over the firm's financial performance.	A conceptual gap was explored since the study focused on dividend and share price as the valuation measure.	The current study focused on ROA as the financial performance measure.
Gottesman and Morey (2010) CEO's type of education and a firm's performance	Focus of the study was the influence of type of education on overall firm performance as measured by Tobin's Q.	The study found no significant relationship to suggest that the type of education influenced firm performance.	A conceptual gap was explored since the study focused on Tobin Q as the valuation measure.	The current study focused on ROA as the financial performance measure.

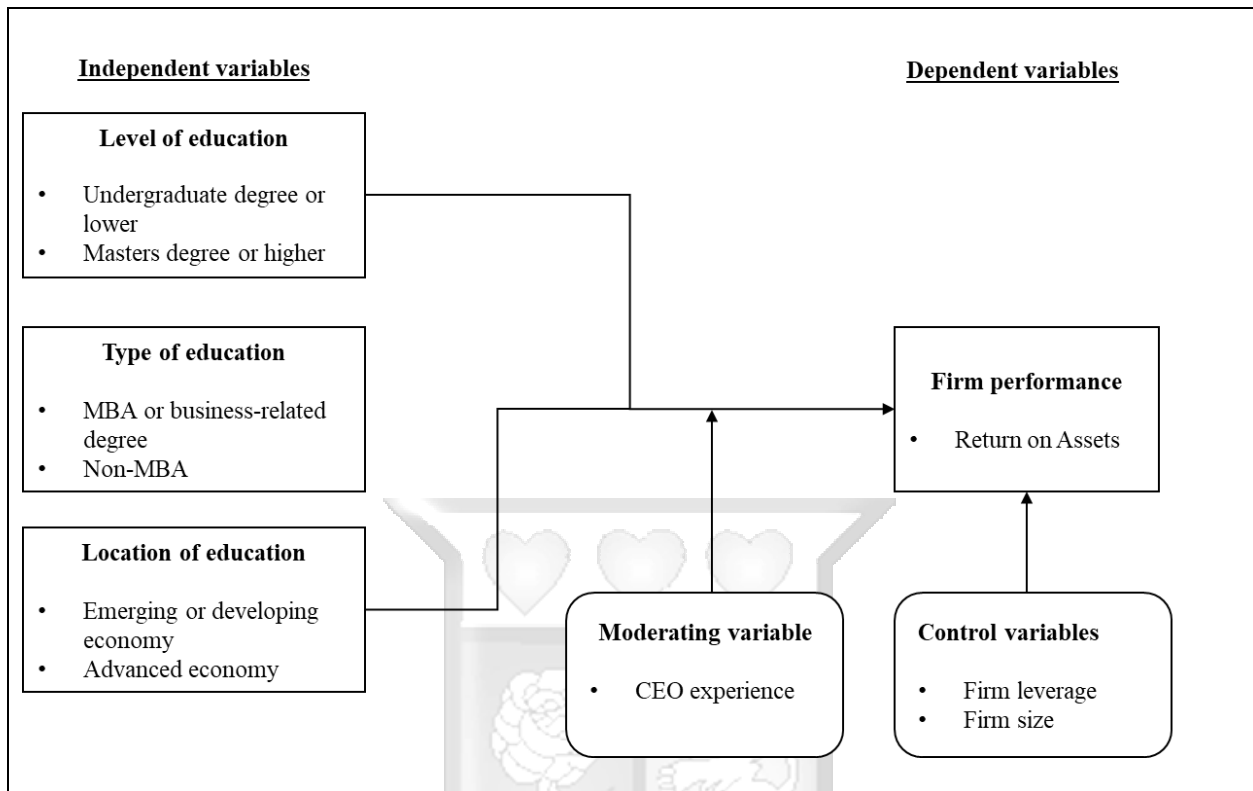
Silvina et al. (2022) Effect of CEO education on performance of 180 firms listed in the same IDX	Focus was on location of study on firm performance measured by Tobin's Q.	Education, measured by having graduated overseas, had a significant and positive impact on firm performance.	The study was carried out in US therefore there exists a contextual gap that the current study sought to fill.	This study focused only on type of education and the influence of location of education institution on firm performance in Kenya.
Monastyrenko (2014) effect of location of study on firm performance	Focus was on general firm performance.	More prestigious education of CEO, including MBAs, did not have an impact on performance.	A conceptual gap was explored as the current study focused on financial performance.	The dependent variable was measured using ROA focusing on the financial aspect of performance.

Source: Author (2024)

**2.5 Conceptual framework**

The researcher's conceptual framework is shown in Figure 2.1. below. It illustrates how independent and dependent variables are related. Diagrams are used to represent the relationship.

**Figure 2.1. Conceptual framework**



**Source: Author (2024)**

The KBV theory argued that knowledge was the only true lasting competitive advantage (Grant, 1996). Marginson (1989) and Harris (2000) further argued that knowledge was acquired through education. This study therefore adopted education as its dependent variable. The upper-echelons theory proposed that the level and type of education would affect the manager’s cognitive capabilities and hence how they process information to drive organizational outcomes (Hambrick & Mason, 1984). The variables in this study as illustrated on Figure 2.1 captured the concept of knowledge proposed by KBV, as education. Further, following the upper echelons theory, the scenarios of education were defined to include the level and type of education. To contribute to the existing pool of literature, this study proposed adding an additional level of educational institution and well as the moderating role of CEO experience.

**2.6 Operationalization and measurement of variables**

Table 2.2 provides definitions and measurements for the study's variables. The variables include dependent variables, independent variables, control variables and the moderating variable.

**Table 2.2. Operationalization and measurement of variables**

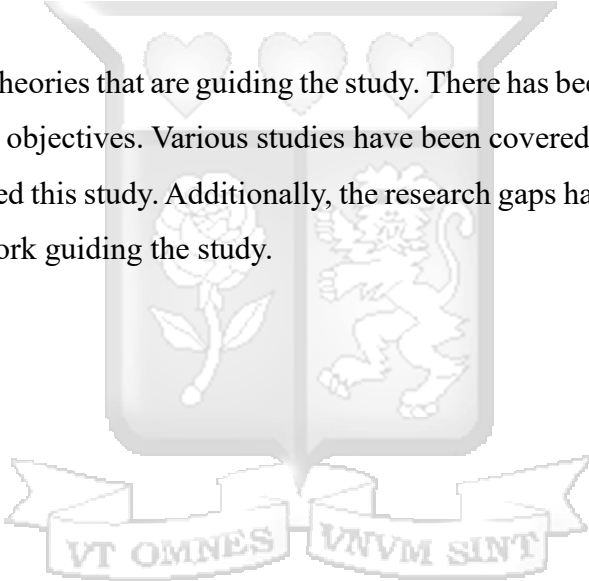
<b>Variable</b>	<b>Description</b>	<b>Measurement indicators</b>	<b>Literature sources</b>	<b>Supporting Theories</b>
Level of education	Refers to the level of education gained by a CEO. This is either an undergraduate, master's degree or PHD level.	<ul style="list-style-type: none"> <li>• Undergraduate</li> <li>• Master's degree</li> <li>• PhD</li> </ul>	Ghardallou et al. (2020)	Upper Echelons Theory
Type of education	Type of education whether its business or non-business related.	<ul style="list-style-type: none"> <li>• Business-related MBA</li> <li>• Non-business-related degree</li> </ul>	Silvina, Robin and Yuwono (2022)	Upper Echelons Theory
Location of Education institution	Tests whether a locally gained degree or a foreign gained degree impacts performance.	<ul style="list-style-type: none"> <li>• Emerging or developing country degree</li> <li>• Advanced economy degree</li> </ul>	Lindorff and Prior (2013)	Upper Echelons Theory
Financial Performance	The financial measure of performance as measured using total assets	<ul style="list-style-type: none"> <li>• ROA</li> </ul>	Ghardallou et al. (2020)	Knowledge-based View Theory
Firm Size	Control variable that was measured using the natural logarithm of total assets	<ul style="list-style-type: none"> <li>• Natural logarithm of Assets</li> </ul>	Arumona and Erin (2019)	Upper Echelons Theory

Firm leverage	The leverage status of the firm measured as total debt over total assets (Leverage ratio)	<ul style="list-style-type: none"> <li>Total debt over total assets</li> </ul>	Arumona and Erin (2019)	Knowledge-based View Theory
CEO Experience	The total number of years held by an individual as a CEO	<ul style="list-style-type: none"> <li>Total number in years</li> </ul>	Huang et al (2023)	Upper Echelons theory

Source: Author (2024)

**2.7 Chapter summary**

The chapter has captured theories that are guiding the study. There has been the capture of literature review based on the study objectives. Various studies have been covered and thus elaborate on the research gaps that prompted this study. Additionally, the research gaps have been discussed as well as the conceptual framework guiding the study.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter outlines the methodology that was applied in executing the research, including data collection processes and the techniques for presenting and analyzing the data.

#### **3.2 Research philosophy**

Research philosophy relates to the development of knowledge and represents important assumptions about the way the researchers view the world (Saunders et al., 2009) . Research philosophy describes the belief regarding how data should be collected, analyzed, and utilized. It explains the specific ways of developing knowledge in a specific field or study. Research philosophy has three main functions: Demystifying, informing, and method facilitating (Kovalainen & Eriksson, 2011). Demystifying involved finding out, criticizing, and explaining research gaps, confusions, inconsistencies, and assumptions in a particular study. This study employed a positivist view which assumes that reality exists, and that the researcher is a spectator of the world (Chia, 2002). Positivists believe that quality research involves accurately recording observations using efficient methods and employing precise terminology and classifications in documentation (Chia, 2002).

The positivism philosophy, which dictates that various phenomenon can be observed and analyzed without interfering with the reality being studied and from an objective viewpoint (Kovalainen & Eriksson, 2011) was applied. The concept allowed the researcher to identify gaps and understand the relationship between the study variables.

#### **3.3 Research design**

A research design is the overall strategy used in research to integrate components of research into a logical manner to tackle the research objectives. It is also a roadmap to collect measure and synthesize data to enable a researcher to answer a set research question or questions (Myers et al., 2013). According to Zikmund (2013), research design is like a compass tool providing direction to the study based on the study objectives, technique and methodology adopted by the researcher. In line with Kokeno and Muturi (2016), this study adopted an explanatory research design. According to Creswell (2012), an explanatory research design is interested with the extent to which two or more variables co-vary. Explanatory research design is also referred to as relational research

design (Kamau et al., 2019). This study therefore used an explanatory design to establish the relationship between CEO's education and a firm's financial performance.

### **3.4 Population**

Population is the total number of objects, people or items to be studied (Willie, 2022). The unit of analysis was listed firms at the NSE as at 31<sup>st</sup> December 2022, and as depicted in Appendix B, there were 67 firms listed in the NSE (NSE, 2023). The study year was selected based on the most recent financial year to ensure relevance of the data and the resulting inferences. The choice of listed firms was on account of their statutory requirement to publish audited financial statements. This therefore means the data was available and reliable. Additionally, because they operate in the same market, the firms have almost identical reporting practices, designs, and minimal disclosure requirements. According to Kothari (2004) a population of study must share traits that meet a predetermined specification. The companies with data were the accessible population.

### **3.5 Sampling**

Similar to Suherman et al. (2023), this study employed a census sampling methodology as the population of the study was small therefore all the listed firms were included in the sample. The sample was the census of companies listed in the NSE as at December 2022 which have consistent data on CEO's educational background and firm financial performance for the period under study (Naseem et al., 2019).

### **3.6 Data collection**

#### **3.6.1 Data collection instruments**

Similar to works of Irungu (2019) and Nyamiobo (2023), secondary data on the study variables was gathered through a document review method. This data was aligned with the constructs specified in the data collection sheet (Appendix A). The data collection sheet underwent testing to ensure its validity and reliability.

Data on educational backgrounds was hand-collected from multiple sources such as online profiles managed by the CEOs (including LinkedIn profiles), company website, NSE handbooks and local newspapers (Ghardallou et al., 2020; Kokeno & Muturi, 2016; Morresi, 2017). Specific data points that were collected included: (a) the level of CEO's education (b) the type of education and (c) the

location of educational institution that awarded them the latest education prior to taking on the position.

Data on the level of latest education prior to the CEO position was coded '1', if the CEO possesses a postgraduate degree (master's or doctorate) and '0' for undergraduate degree or otherwise, including executive education (Darmadi, 2013; Ghardallou et al., 2020; Kokeno & Muturi, 2016; Mukherjee & Sen, 2022). Other types of qualifications lower than undergraduate, such as diploma were labelled '0'. Type of latest education prior to the CEO position was coded '1', if the latest pre-CEO position education is from a business program and '0' for otherwise (Ghardallou et al., 2020; Gottesman & Morey, 2010; Morresi, 2017). Business program education was defined as fields of study in economic, management, business, or accounting (Silvina et al., 2022). Data on the location of educational institution for latest education prior to the CEO position was coded '1', if the latest education pre-CEO position was obtained from an advanced economy and '0' where the latest pre-CEO position education was obtained in Kenya (Morresi, 2017). The list of IMF's advanced economies is provided in Appendix C. Finally, data on financial performance was hand-collected from published annual reports of companies listed in the NSE as at 31<sup>st</sup> December 2022 (Darmadi, 2013; Kokeno & Muturi, 2016; Suherman et al., 2023).

The published annual reports were sourced from the corporates' websites and NSE's website. Specific accounting performance data points that were collected were the annual net income and the value of total assets at the end of the year (Ghardallou et al., 2020; Kokeno & Muturi, 2016; Morresi, 2017). Data on total value of debt and equity was also collected and utilized as control variables (Darmadi, 2013; Mukherjee & Sen, 2022; Saidu, 2019). To ensure accuracy and consistency, the study discarded any observation which was ambiguous or contradictory to observations from other sources (King et al., 2016). Similarly, companies with negative book values of equity were excluded (Darmadi, 2013).

### **3.7 Data analysis**

For analysis, the data collected was coded in Statistical packages for Social Sciences (SPSS) version 28. The data was analyzed through descriptive and inferential analysis techniques. As opined by Nyamiobo (2023), cross-sectional data estimation methods were employed because the observations would have one dimension. Descriptive statistics provided a summarized description of the data collected. These statistics provided the mean, median and percentages for

the study variables. Correlation and regression analysis were used in inferential statistics to identify the relationship between dependent and independent variables.

A multivariate regression analysis was conducted to determine the effect of education on the firm's financial performance. The following ordinary least squares (OLS) regression models were used:

Unmoderated OLS regression model:

$$Y_{i,t} = \alpha + B_1X_1 + B_2X_2 + B_3X_3 + B_4SIZE_4 + B_5LEV_5 + \varepsilon$$

Moderated OLS regression model:

$$Y_{i,t} = \Lambda (\alpha + B_1X_1 + B_2X_2 + B_3X_3 + B_4SIZE_4 + B_5LEV_5 + B_6EXP_6 + B_1 * EXP_6 + B_2 * EXP_6 + B_3 * EXP_6 \varepsilon + \varepsilon)$$

Measurement of firm's financial performance followed existing literature and hence use accounting measure (ROA) (Silvina et al., 2022; Suherman et al., 2023). ROA is an accounting-based performance indicator that illuminates how successful a firm uses its assets (Ghardallou et al., 2020). The rationale for ROA is borrowed from Gibson (1987), cited in Monastyrenko (2014), who surveyed chartered financial analysts and concluded that at least 90 percent of them treated ROA as a primary measure of performance.

$Y_i$  = firm performance as measured by Return on Assets (ROA). This is defined to be net income divided by the book value of assets (Darmadi, 2013). The higher the ROA, the more the company is making with less capital investment (Monastyrenko, 2014b).

$\Lambda$  = is the cumulative distribution function of the regression distribution.

$\alpha$  = constant factor

$B_1$  to  $B_3$  = the slope which represents the degree with which firm performance changes as the independent variable changes by one unit variable.

$X_1$  = CEO level of education.

$X_2$  = CEO type of education.

$X_3$  = place of educational institution.

*SIZE* = control variable. This controls the effects of firm size (Darmadi, 2013; Mukherjee & Sen, 2022; Saidu, 2019).

*LEV* = control variable. This controls the effects of leverage levels at the firm (Ghardallou et al., 2020; Mukherjee & Sen, 2022; Saidu, 2019).

*EXP* = Moderating variable. This variable affects the relationship between the independent and dependent variables (Huang et al., 2023)

$\varepsilon$  = error component

This study followed previous literature to control firm specific effects. The study therefore controlled for firm size and leverage. Firm size was proxied by the log of total assets at year-end (Darmadi, 2013; Mukherjee & Sen, 2022; Saidu, 2019). Firm leverage was proxied by the ratio of total debts to total equity (Ghardallou et al., 2020; Mukherjee & Sen, 2022; Saidu, 2019). CEO experience level was also adopted as the moderating variable which either limits or increases the magnitude of the relationship between the independent and dependent variables (Huang et al., 2023).

### **3.8 Research quality**

#### **3.8.1 Reliability**

Reliability is defined as the extent to which a measuring instrument exhibits variable errors that may be seen consistently over the course of any given measurement endeavor or that stay unchanged each time a specific unit is tested by the same instrument (Mugenda & Mugenda, 2003). If the findings from an investigation can be verified by another study using a comparable approach, the research instrument is regarded as reliable (Mugenda & Mugenda, 2003). If a researcher's results on the same test when taken again are comparable, the measurement is deemed to be trustworthy. Cronbach's alpha coefficients between 0.7 and 0.9 were regarded to be favorable by Kombo and Tromp in 2006. The cut-off for the data collection instrument was a Cronbach alpha of  $> 0.7$ .

#### **3.8.2 Validity**

Validity explains how the study methodology accurately measures the variables it was designed to examine (L. Cohen et al., 2017). Content validity deduces a wide range of items that are equivalent to those on the test from test results. For content validity, the sample population representativeness

is crucial. While assessing the study's validity, the focus is on determining whether the data gathering methods help to answer the research questions. Validity was ascertained through proper definition of variables. The independent and dependent variables were properly defined to ensure they were not subject to multiple interpretations.

### **3.9 Diagnostic tests**

The study performed diagnostic tests to ensure that the regression model assumptions are not violated. These tests were the normality test, multicollinearity test and heteroskedasticity test.

#### **3.9.1 Normality test**

Normality tests check if collected data are normally distributed (Yazici & Yolacan, 2007). Normality test was checked using Shapiro wilk test. A normality test was carried out to see if the residuals of the regression models followed a normal distribution. Because the study anticipates a sample size of  $n > 50$ , it used the Shapiro wilk test to test for normality. Under null hypothesis, data is not normally distributed. A calculated p value  $< 0.05$ , implies data is not normally distributed whereas p value  $> 0.05$  implies data is normally distributed. Parametric tests were employed where data was normally distributed while nonparametric tests were employed in case the study failed the normality test.

#### **3.9.2 Multicollinearity test**

As per Montgomery et al. (2015) and Alin (2010), multicollinearity depicts a phenomenon where the correlation level between research variables is highly correlated. Severe multicollinearity results in inflated standard errors in the model that affect the accuracy and reliability of the regression coefficients. A Variance inflation factor (VIF) of more than 5 signifies presence of severe collinearity while VIF less than 5 implies minimal collinearity (Alin, 2010). VIF was used to determine the extent to which predictor variables were correlated with each other. Variables with a VIF of above 5.0 were eliminated as they indicated the presence of a high level of multicollinearity.

#### **3.9.3 Heteroskedasticity test**

Heteroscedasticity is a statistical phenomenon where residuals in the data are not the same (Cook & Weisberg, 1983). Thus, heteroscedasticity tests were conducted to ascertain if the residuals in the data were homokedastic or heterokedastic. Failure to account for heteroscedasticity would

affect the validity of the model test. If homoscedasticity was present, then the expected variance of the residuals would be identical for all values of the regressors. The Breusch pagan test was used to account for this error.

### **3.10 Ethical considerations**

Ethical approvals were acquired from the pertinent institutional appraisal board before commencing data collection, ensuring adherence to ethical guidelines and gaining informed consent from all participants. Research study authorization was secured from Strathmore University and a research permit from the National Commission on Science Technology and Innovation (NACOSTI), (Appendices D and E). Malhotra (2020) underscores the importance of presenting study results transparently and comprehensively, avoiding any misleading or incomplete representations of the data. Necessary approvals, consent and permits were sought before proceeding to the field to collect data. The study had a very strong stance on ethics and privacy. As such, the researcher submitted applications for research licenses from the Strathmore University Ethical Review Committee and the National Council for Science, Technology, and Innovation (NACOSTI) in Kenya. Moreover, the reporting of results was accurately represented to avoid any form of research misconduct. Addressing these ethical issues required strict adherence and continuous reflection in the entire study process. Once the data had been used for research purposes, it was discarded in line with the university's ethical guidelines on data handling.

### **3.11 Chapter summary**

The chapter presents study methods that were adopted. It outlined the research paradigm that was adopted, research design, the target population and the sampling methods that were employed. Additionally, the chapter outlined the data collection methods and research quality that involved checking the validity and reliability of the tool. Furthermore, data analysis approaches and diagnostic tests have been discussed and the chapter outlined the ethical issues observed during the research process.

## CHAPTER FOUR

### PRESENTATION OF RESEARCH FINDINGS

#### 4.1 Introduction

The objective of the study was to determine the effect of CEO education on the financial performance of listed firms at the NSE, with CEO experience as the moderating variable in the study. The specific objectives were to determine the effect of level of education, the type of education and the location of the educational institution on the financial performance, in which CEO experience was the moderating variable and firm size and leverage were the control variables. This chapter presents the results from the descriptive and inferential statistics.

#### 4.2 Descriptive statistics

Table 4.1 contains summary statistics for the study variables which were essential for understanding the distribution and characteristics of the data. The data was collected for the year 2022 from a total of 67 firms listed at the NSE. The study employed a census sampling methodology as the population of the study was small. Therefore the 67 firms in the sample represented the population. Data was collected using a data collection sheet provided in Appendix A. Data on the independent variables, which was on level of education, type of education and location of educational institution, was obtained from company records websites and publications. Data on the dependent variable, and the control variables which was return on Assets (ROA), leverage and firm size respectively, was obtained from audited annual reports for the year 2022.

**Table 4.1: Descriptive statistics**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
ROA	67	-0.160	0.420	0.09224	0.123163
Level of Education	67	.000	1.000	0.61194	0.490986
Type of Education	67	.000	1.000	0.55224	0.501017
Location of Institution	67	.000	1.000	0.53731	0.502369
Leverage	67	0.046	1.307	0.51473	0.287620
Firm Size	67	6.846	11.577	9.36054	1.248802
CEO Experience	67	1.000	32.000	14.95522	10.635038
Valid N (listwise)	67				

**Source: Research Findings (2024)**

The mean return on assets (ROA) was 0.09224, indicating that, on average, NSE listed firms in Kenya generated a return of approximately 9.224% on their total assets. The minimum ROA observed was -0.160, suggesting that some NSE listed firms experienced losses in the year 2022, while the maximum ROA was 0.420, indicating the highest level of profitability among the NSE listed firms. In examining the level of education, which indicates whether the CEO had a postgraduate degree or a lower qualification, the NSE listed firms had the mean of 0.61194 thus suggesting that on average the CEO's of the NSE listed firms had at least an undergraduate degree. The variability, as indicated by the standard deviation of 0.490986, implies low diversity in the level of education among the chief executive officers of the NSE listed firms.

Regarding assessment of the type of education which was indicated by either an MBA related degree or non-MBA degree, the mean type of education was 0.55224 which indicated that on average, majority of the CEO's of the NSE listed firms had an MBA-related degree. The relatively low standard deviation of 0.501017 implies low variability in the type of education among the CEOs of the different NSE listed firms.

Furthermore, considering the location of the educational institution, reflected in the mean value among the NSE listed firms was 0.5373. This shows that the majority of the CEO's of the NSE listed firms had obtained their education locally. The standard deviation of 0.502369 suggests low degree of variability in the location of the educational institution.

The control variables selected for the study included firm leverage and firm size. The mean values and standard deviations for these variables were also calculated. On the firm leverage, the mean leverage for the NSE listed firms was 0.51473 indicating that on average, the NSE listed firms were on average high leveraged with over 51% of their capital structure composed of debt capital. The standard deviation across the firms was 0.287620 which indicated low variability in the leverage across all NSE listed firms. On firm size, the mean value recorded was 9.36054 indicating that on average, the NSE listed firms are large. The standard deviation was 1.248802 indicating a high variability in size across all NSE listed firms. Finally, the descriptive statistics for CEO experience were calculated. From the results, the average number of years of experience was 14.95522 indicating that on average, the CEO's had 14 years of experience in their positions. The standard deviation for this variable was, however, very high at 10.635038 indicating a significant variability in CEO experience across all NSE listed firms.

In summary, the descriptive results provide a comprehensive overview of the financial performance and CEO education across NSE listed firms in Kenya, highlighting both the average levels and variability across these different metrics. These insights lay the foundation for further analysis to understand the relationships between these factors and their impact on the financial performance of NSE listed firms.

### 4.3 Diagnostic tests

The researcher conducted diagnostic tests to ensure that the assumptions of the statistical tests used in the analysis were met. Diagnostic tests helped to identify potential problems such as outliers, multicollinearity, heteroscedasticity, and normality of residuals, which can influence the validity and reliability of the results. The diagnostic tests conducted are discussed in this section.

#### 4.3.1 Reliability test

Cronbach's alpha was employed in this investigation to assess the reliability of the study variables. Table 4.2 shows the outcomes. If the instrument measures what it is supposed to measure, it is considered reliable. The internal consistency of the instrument, measured by Cronbach's alpha, was used in this study to establish reliability. For the items created in the questionnaire, data gathered through its use was imputed into SPSS and Cronbach's alpha. Items with a Cronbach's alpha greater than 0.7 would attest to the instrument's reliability.

**Table 4.2 Reliability Test Results**

Variables	Cronbach's Alpha	Critical Value	Conclusion
ROA	0.822	0.7	Reliable
Level of Education	0.752	0.7	Reliable
Type of Education	0.701	0.7	Reliable
Location of Institution	0.705	0.7	Reliable
Leverage	0.802	0.7	Reliable
Firm Size	0.811	0.7	Reliable
CEO Experience	0.712	0.7	Reliable

The variables were higher than 0.7 Cronbach alpha, as shown on table 4.2 This was an indication that the research instrument used in the study was very coherent internally.

### 4.3.2 Normality test

The researcher conducted a normality test to assess whether a normal distribution exists among the variables. This was done using the Shapiro Wilk test. The purpose of this test is to establish the magnitude of data normalcy by determining if the data is skewed. The Shapiro-Wilk statistics are between 0 and 1, with a value above 0.05 indicating data normalcy. A value less than 0.05 is indicative of data significantly deviating from a normal distribution. This test was used in the study to confirm normality, and from the findings, all the variables had a p-value above 0.05. The results are in table 4.3 below.

**Table 4.3 Normality Test**

Shapiro Wilk Tests				
Variable	Statistic	df	Significance	
ROA	.149	67	0.059	
Level of Education	.467	67	0.132	
Type of Education	.340	67	0.302	
Location of institution	.466	67	0.403	
Leverage	.516	67	0.223	
Firm Size	.928	67	0.128	
CEO Experience	.922	67	0.112	

From the above table, all variables had a Shapiro wilk statistic above 0.05 which was the minimum threshold for normality distribution. The test confirms a normal distribution of variables across all NSE-listed firms.

### 4.3.3 Multicollinearity Test

Table 4.4 contains statistics related to multicollinearity, which is a condition in regression analysis where two or more independent variables in a model are highly correlated with each other. Multicollinearity can lead to issues in regression analysis, making it difficult to determine the individual impact of each variable on the dependent variable.

**Table 4.4: Multicollinearity Test**

Variable	Collinearity Statistics	
	Tolerance	VIF
ROA	0.601	1.664
Level of Education	0.561	1.782
Type of Education	0.789	1.267
Location of Institution	0.623	1.605
Leverage	0.605	1.653
Firm size	0.580	1.724
CEO Experience	0.592	1.689

**Source: Research Findings (2024)**

The results indicated a moderate degree of correlation between the independent variables in the regression model. While the tolerance values are below 1, suggesting some correlation. However, the VIF values are also below the commonly used threshold of 5, indicating that multicollinearity is not severe for any of the variables.

#### 4.3.4 Heteroskedasticity Test

Table 4.5 shows the results of the Breusch pagan test for heteroscedasticity. The results of the test indicate whether the model's or the variance of the error is different for each observation. The threshold for this test is a value less than 0.05. The results of the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity provide evidence regarding the homoscedasticity assumption in regression analysis. The results are as shown in Table 4.5

**Table 4.5: Heteroscedasticity Test**

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity	
chi2(1)	= 0.3125
Prob > chi2	= 0.1894

**Source: Research Findings (2024)**

A higher p-value, such as the one obtained (0.1894), indicates that there is no strong evidence to reject the null hypothesis, suggesting that heteroscedasticity is not significantly present in the regression model. This implies that the variance of the residuals, or errors, across different levels of the independent variables does not differ significantly, which is a fundamental assumption of linear regression.

#### **4.4 Correlation analysis**

The correlation analysis provides insights into the relationship between financial performance, measured by Return on Assets (ROA), and the independent variables of interest in the study. The results are as shown in Table 4.6.



**Table 4.6 Correlation Analysis**

		ROA	Level of Education	Type of Education	Location of Institution	Firm leverage	Firm Size	CEO Experience
ROA	Pearson Correlation	1						
	Sig. (2-tailed)							
Level of Education	Pearson Correlation	.474**	1					
	Sig. (2-tailed)	.000						
Type of Education	Pearson Correlation	-.058	.399**	1				
	Sig. (2-tailed)	.509	.000					
Location of Institution	Pearson Correlation	.129	-.381	.204	1			
	Sig. (2-tailed)	.141	.000	.019				
Firm Leverage	Pearson Correlation	-.551	-.022	-.402**	.040	1		
	Sig. (2-tailed)	.000	.803	.019	.650			
Firm Size	Pearson Correlation	.632	.052	-.428**	.270**	.834**	1	
	Sig. (2-tailed)	.000	.552	.000	.002	.000		
CEO Experience	Pearson Correlation	.328**	-.334**	.179**	.065	.031	.321**	1
	Sig. (2-tailed)	.000	.000	.000	.209	.055	.003	

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

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

c. Listwise N=380

**Source: Research Findings (2024)**

Firstly, there is a statistically significant positive correlation between ROA and level of education, with a Pearson correlation coefficient of 0.474. This suggests that there is a significant positive relationship between the financial performance of NSE listed firms and the level of education of their CEO's, indicating that for NSE listed firms with CEO's with higher levels of education, their financial performance was positive. This relationship was found to be exceptionally strong.

Secondly, the correlation between ROA and type of education was negligible, with a Pearson correlation coefficient of -0.058. This indicates that there is a negligible linear relationship between the financial performance and type of CEO education therefore suggesting that the type of education does not significantly influence ROA. Moreover, ROA also exhibited a statistically insignificant positive correlation with the location of educational institution with a Pearson correlation coefficient of 0.129. This creates the impression that there is no linear relationship between the financial performance and location of the educational institution of the CEO's education therefore suggesting that location does not significantly influence ROA.

On the control variables there was a statistically significant negative correlation between ROA and firm leverage, with a Pearson correlation coefficient of -0.551. This indicates that there is a moderate negative relationship between the financial performance of NSE listed firms and their leverage. The lower the leverage, the better the performance and vice versa. Firm size also had a moderate positive relationship with financial performance, indicating that the higher the size of the firm, the better the performance. Lastly, CEO experience, which was the moderating variable had a positive relationship with ROA indicating that the higher the number of years of experience, the better the financial performance of the firms.

#### **4.5 Regression analysis**

The study was based on the assumed relationship between CEO education and the financial performance of NSE listed firms which was measured by the ROA. To analyze the relationship between these variables, a simple multiple linear regression analysis was conducted between the independent and dependent variables to determine the individual effects of the independent variables on the dependent variable. This was the first regression analysis which was the unmoderated regression. The Baron and Kenny's (1986) steps for testing the moderating influence were applied:

Step 1 (Model 1) estimates the relationship between the dependent and independent variables. The relationship should be significant.

Step 2 (Model 2) using the regression model and the Hausmann test, the association among the independent, the moderating variable and the dependent variable is tested. The model should be statistically significant.

Step 3 (Model 3) multiply the centered predictor and centered moderator to determine the interaction term.

In step 1 (Model 1), regression analysis estimated the relationship between financial performance and each of the independent variable indicators which included the level of education, the type of education and the location of the educational institution.

**Table 4.7 CEO education and financial performance**

Financial Performance	Coef.	Std. Err.	P>t
Level of Education	.127*	0.093	0.005
Type of Education	-.094*	0.045	0.036
Location of Institution	-.002	0.044	0.943
Firm Leverage	-.062*	0.030	0.003
Firm Size	.020*	0.079	0.005
_cons	-.098	0.115	0.295
<b>Model Summary</b>			
R-squared	0.189		
F(5, 61)	2.835		
	0.003		
Prob > F			
Observations	67		

p<0.05\*

**Source: Research Findings (2024)**

The overall model was statistically significant because the F-test statistic was statistically significant ( $F(5, 61) = 4.99, p < 0.05$ ). The results indicate that level of education, type of education,

location of educational institution, firm leverage and firm size explain better the changes in financial performance. The study findings show that level of education ( $\beta = 0.127, p < 0.05$ ) of CEOs of listed NSE firms moderately predicts financial performance of listed firms, suggesting that for every unit rise in level of education, the financial performance increases by 0.127 units meaning that a higher education level would increase performance of NSE listed firms by 12.7%. The findings also showed that type of education ( $\beta = -0.094, p < 0.05$ ) is a weak predictor of financial performance. This suggests that the more business-oriented the program, the lower the financial performance, which declined by 0.094 units. This can be interpreted to mean that having a business-oriented degree would lower the financial performance of a firm by 9.4%. Lastly, the results showed that the location of educational institutions ( $\beta = -0.002, p > 0.05$ ) is an insignificant predictor of financial performance. The overall regression equation before considering the moderating effect of firm size can therefore be written as follows

$$FP = -0.098 + 0.127X_1 - 0.094X_2 - 0.002X_3 - 0.062X_4 + 0.020X_5$$

Where:

$X_1$  = CEO level of education.

$X_2$  = CEO type of education.

$X_3$  = Place of educational institution.

$X_4$  = Firm leverage

$X_5$  = Firm size

#### 4.6 Moderated regression equation

The final regression model was established after moderation. The results are as shown in Table 4.8 below.

**Table 4.8: Regression (Moderated) between CEO education and Financial Performance**

Financial performance	Coef.	Std. Err.	P>t
Level of Education	.140*	0.094	0.002
Type of Education	-.127	0.070	0.070
Location of Institution	.034	0.069	0.421
Firm Leverage	-.068*	0.043	0.004
Firm Size	.020*	0.082	0.005
LE*CE	.003*	0.009	0.002
TY*CE	.002*	0.005	0.001
LO*CE	.002	0.004	0.189
_cons	-.002*	0.002	0.001
R-squared	0.217		
F(8, 58)	2.011		
Prob > F	0.005		

\* p<0.05

**Source: Research Findings (2024)**

After accounting for the moderation effect of CEO experience on the relationship between the independent and dependent variables, a final regression model was established. From the regressed values, the various elements of CEO education (type, level and location of educational institution) indicated a significant effect on financial performance. From the table value, the R-square value was 0.217. This value was different from the unmoderated value in Table 4.7 which yielded an R-square value of 0.189 or 18.9% which was an overall improvement and further affirming the explanatory power of the model upon inclusion of other variables in the regression equation. On the interaction between level of education and CEO experience, the regression coefficient was weak but significant as shown by the p-value of 0.002 which was less than 0.05 ( $\beta = 0.003, p < 0.05$ ). Type of education on the other hand showed a significant interaction with CEO experience as shown by the co-efficient ( $\beta = 0.002, p < 0.05$ ). The p-value of 0.001, which was lower than 0.05 indicated that CEO experience moderates the relationship between type of education and financial

performance. Finally, the interaction between location of educational institution and CEO experience was also weak but insignificant as indicated by the low coefficient of interaction and the p-value which was greater than 0.05 ( $\beta = 0.002$ ,  $p > 0.05$ ). The results therefore show that CEO experience enhances the relationship between CEO education and firm financial performance. The moderated regression equation generated was as follows

$$FP = -0.002 + 0.003X_1 + 0.002X_2 + 0.002X_3 - 0.068X_4 + 0.020X_5$$

Where:

$X_1$  = CEO level of education.

$X_2$  = CEO type of education.

$X_3$  = Place of educational institution.

$X_4$  = Firm leverage

$X_5$  = Firm size

#### 4.7 Summary of results

The study aimed to determine the impact of CEO education on the financial performance of firms listed on the NSE, with CEO experience as a moderating variable. The study specifically analyzed the influence of three dimensions of CEO education: level of education, type of education, and the location of the educational institution. Firm size and leverage were included as control variables, while the financial performance was measured by Return on Assets (ROA). The descriptive statistics revealed that the average ROA for NSE-listed firms in 2022 was 0.09224, indicating an average return of 9.224% on total assets. There was a wide range in financial performance, with some firms experiencing losses (minimum ROA of -0.160) while others had strong profitability (maximum ROA of 0.420) indicating a significant variability in returns for the different listed firms. Regarding CEO education, the majority had at least an undergraduate degree, with a mean of 0.61 (on a scale where 0 indicates an undergraduate degree and 1 represents postgraduate degrees).

Most CEOs held MBA-related degrees (mean type of education of 0.66), and the majority obtained their degrees from local institutions. Firm leverage had a mean of 0.51473, indicating that over 51% of the capital structure of these firms was composed of debt. The CEO experience averaged 14.95 years, though there was significant variability in this metric across firms. Several diagnostic

tests were conducted to ensure the validity and reliability of the regression models. The Cronbach's alpha for all variables exceeded the threshold of 0.7, confirming internal consistency and reliability. A normality test using the Shapiro-Wilk test indicated that the data was normally distributed, meeting the assumptions of normality for regression analysis. Multicollinearity tests showed that the Variance Inflation Factors (VIF) were below 5, indicating no severe multicollinearity issues among the independent variables. The heteroskedasticity test, using the Breusch-Pagan test, found no evidence of heteroscedasticity, confirming that the residuals were homoscedastic.

The correlation analysis highlighted several important relationships. There was a statistically significant positive correlation between ROA and the level of education ( $r = 0.474$ ), suggesting that CEOs with higher levels of education are associated with better financial performance. However, the type of education had a negligible negative correlation with ROA ( $r = -0.058$ ), indicating no significant impact on financial performance. Similarly, the location of the educational institution showed an insignificant correlation with ROA ( $r = 0.129$ ). Firm leverage was negatively correlated with ROA ( $r = -0.551$ ), showing that firms with higher debt tended to perform worse financially, while firm size had a moderate positive correlation with financial performance ( $r = 0.632$ ). CEO experience also had a positive correlation with ROA, implying that more experienced CEOs contributed to better financial outcomes.

The regression analysis revealed that the level of education had a significant positive effect on financial performance ( $\beta = 0.127$ ,  $p < 0.05$ ), indicating that for every unit increase in the level of CEO education, financial performance increased by 0.127 units. The type of education showed a negative, yet statistically significant, effect on financial performance ( $\beta = -0.094$ ,  $p < 0.05$ ). This suggested that the more business-oriented the education the CEO had, the financial performance would decline by 9.4%. The location of the educational institution had no significant effect on performance ( $\beta = -0.002$ ,  $p > 0.05$ ). Firm leverage had a significant negative impact on financial performance, while firm size positively influenced financial outcomes.

Finally, the moderated regression analysis, incorporating CEO experience, demonstrated an improvement in the overall model. The R-squared value increased from 0.189 to 0.217, indicating that aspects of CEO education and years of relevant work experience together explained 21.7% of the variance in financial performance. The interaction between CEO experience and level of

education ( $\beta= 0.003$ ,  $p<0.05$ ) and type of education ( $\beta= 0.002$ ,  $p<0.05$ ) showed a significant moderating effect, suggesting that CEO experience enhances the impact of these educational dimensions on financial performance. However, the interaction between location of the educational institution and financial performance was insignificant ( $\beta= 0.002$ ,  $p>0.05$ ).



## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter concludes the above study. The chapter discusses the summary of the study, draws a conclusion in relation to the findings and proposes recommendations for policy interventions and for future research based on the outcomes of the objectives of the study. Lastly the chapter discusses the limitations encountered and suggestions for future studies based on these limitations.

#### **5.2 Summary of findings**

The objective of the study was to determine the effect of CEO education on the financial performance of NSE listed firms in Kenya, with CEO experience as the moderating variable. More specifically, the study objective was to determine the effect of level of education, type of education and the location of educational institution on the financial performance of NSE listed firms in Kenya. CEO experience was selected as the study's moderating variable over its influence on the relationship between education and financial performance. The descriptive design was suitable in achieving the study objectives outlined. The study targeted all the 67 firms listed in the NSE, as of December 2022. The analysis yielded both descriptive and inferential statistics including mean scores and standard deviations. For the inferential statistics, Pearson's correlation and regression analysis were applied. Findings indicated a positive correlation between higher education levels and financial performance as measured by return on assets. Findings also indicated a significant but weak negative correlation between business-oriented education and financial performance. Lastly, the findings suggest an insignificant correlation between educational institution location and financial performance. CEO experience enhanced the impact of educational levels and types on financial performance but not the location of education.

#### **5.3 Discussion of results**

##### **5.3.1 Level of education and financial performance**

The theoretical foundation of this study was grounded in the Knowledge-Based View (KBV) and Upper Echelons Theory, both of which provide insights into the relationship between CEO education and firm performance. According to KBV, knowledge is a key resource in organizations that contributes to competitive advantage and firm performance (Curado & Bontis, 2006). Similarly, Upper Echelons Theory asserts that managerial characteristics, including level of

education, influence strategic decision-making, thereby affecting organizational outcomes (Hambrick & Mason, 1984). These theories posit that a CEO's level of education provides essential knowledge and cognitive skills that enable better decision-making and risk management, ultimately leading to enhanced financial performance.

Empirical evidence has also supported these theoretical views. Studies by Kokeno & Muturi (2016) and Darmadi (2013) found a positive relationship between CEO education and financial performance in developing markets, such as Kenya and Indonesia. CEOs with higher levels of education were associated with better financial outcomes, as measured by Return on Assets (ROA) and Tobin's Q. These findings suggest that CEOs with advanced education have broader knowledge, social networks, and strategic skills that can improve firm performance.

The results of this study align with these theoretical and empirical findings. The correlation and regression analyses demonstrated a statistically significant positive relationship between the level of CEO education and firm financial performance. The regression analysis further confirmed that a unit increase in the level of education predicts an increase in financial performance. This supports the argument that higher levels of education equip CEOs with the skills and knowledge necessary to make more effective strategic decisions, thus enhancing financial outcomes.

### **5.3.2 Type of education and financial performance**

Empirical literature and the study findings present a nuanced understanding of the relationship between the type of CEO education and firm financial performance. Studies like those by Bantel and Jackson (1989) suggest that individuals trained in business or management-related disciplines tend to make informed decisions in complex situations, enhancing firm performance. King et al. (2016) found that MBA-trained CEOs in the banking sector promoted innovation, leading to superior firm performance, while Arumona and Erin (2019) revealed that board members with finance-related degrees positively influenced firm outcomes in Nigeria's healthcare sector. Similarly, Ghardallou et al. (2020) and Silvina et al. (2022) also demonstrated a positive relationship between CEOs with business-related education and enhanced firm performance, particularly in contexts such as Tunisia and Indonesia, respectively.

However, the type of education's impact on firm performance remains contested. Gottesman and Morey (2010) and Lindorff and Prior (2013) found no significant relationship between an MBA degree and firm performance, suggesting that the influence of education diminishes over time as

practical experience becomes more relevant. They critique business programs for focusing too much on technical knowledge and not enough on softer management skills, which could explain the varied impact of education on performance. The study findings align more closely with the latter school of thought. Correlation analysis revealed a negative and statistically significant relationship between the type of education and firm financial performance. Regression results confirmed this negative and significant effect. Thus, in line with empirical literature like that of Gottesman and Morey (2010), the study suggests that the type of CEO education, particularly whether it is business-related or not, may not significantly influence firm financial performance of NSE listed firms in Kenya. This invalidates the Knowledge based view which proposes that increasing specialized knowledge, in this case business knowledge, will enhance the organization's capabilities and hence performance.

### **5.3.3 Location of the educational institution and financial performance**

The empirical literature on the location of a CEO's education and firm performance has produced mixed findings. In developed economies, studies suggest that the location or quality of the educational institution may influence CEO skill sets and, consequently, organizational outcomes. For instance, Darmadi (2013) found that CEOs with degrees from prestigious institutions in developed countries significantly enhanced firm performance in Indonesia. Silvina et al. (2022) similarly observed that firms led by CEOs with overseas education performed better in terms of Tobin's Q. King et al. (2016) and Miller et al. (2015) proposed that the quality of education, often linked to the institution's location, enhances leadership skills, which are critical for operational success.

However, literature from advanced economies offers conflicting evidence. Studies like Morresi (2017) and Monastyrenko (2014) found no significant link between prestigious education and firm performance, noting that graduates from less-renowned institutions may compensate through effort, thereby improving firm outcomes. Similarly, Bhagat et al. (2010) and Gottesman and Morey (2010) suggested that formal education's impact diminishes over time, with other factors like social capital and practical experience playing more prominent roles in CEO effectiveness.

The study's findings align with the conclusions from advanced economies. Both the correlation and regression analyses revealed that the location of a CEO's education had no significant effect on financial performance. The weak regression coefficient supports the notion that while education

location might influence initial career opportunities, it is not a strong predictor of long-term firm success. Thus, these results suggest that the location of a CEO's education, particularly in an emerging market like Kenya, may not have a significant impact on a firm's financial performance. This validates the Human Capital Theory which is an extension of the Knowledge-Based View. The theory proposes that while quality education may improve an individual's productivity, it does not necessarily mean the firm's productivity, and hence output will also improve.

#### **5.3.4 Moderating effect of CEO experience**

The study's findings on the moderating effect of CEO experience align with prior empirical literature that explores the interaction between CEO education and experience in influencing firm performance. According to the literature, CEO experience can either enhance or limit the impact of education on business outcomes. Cope (2005) emphasized that learning within organizations is cumulative and path-dependent, meaning that the processes by which CEOs gain knowledge from their experiences can influence how they apply their educational background to improve corporate outcomes. This perspective is further reinforced by Wang (2008), who suggests that businesses learn and grow over time through accumulated experience, particularly in leadership roles.

Hamori and Koyuncu (2015) noted that CEO experience plays a critical role in moderating the impact of education on firm performance, indicating that more experienced CEOs are better equipped to translate their educational qualifications into tangible business results. This view is also supported by Huang et al. (2023), who found that CEO experience positively moderates the relationship between CEO education and firm performance. The experiential learning theory proposed by Deakins and Freel (1998) posits that past mistakes are invaluable lessons that CEOs can learn from, enhancing their decision-making abilities and leadership effectiveness. As a result, experienced CEOs are more adept at recognizing business opportunities and making strategic decisions that lead to improved financial performance (Westhead & Wright, 2009).

In line with these empirical insights, the study's findings demonstrated that CEO experience significantly moderates the relationship between CEO education and financial performance. The regression analysis revealed that CEO experience enhances the impact of both the level of education and the type of education on firm performance. These results suggest that CEOs with more years of experience can better leverage their educational background, whether business-related or non-business-related, to positively affect the financial outcomes of their firms.

However, the interaction between CEO experience and the location of the educational institution was found to be insignificant. This aligns with previous findings by Monastyrenko (2014) and Gottesman & Morey (2010), who argued that the prestige or location of a CEO's educational institution may become less relevant over time as practical experience and accumulated business acumen become more important determinants of firm performance. In conclusion, the study corroborates the notion that while education is important, CEO experience plays a crucial moderating role, particularly in translating educational achievements into firm financial success.

#### **5.4 Conclusion**

This study examined the effects of CEO education on the financial performance of firms listed on the NSE, with a focus on the level of education, type of education, and location of the educational institution. The study also considered the moderating role of CEO experience and controlled for firm size. The findings are grounded in the Knowledge-Based View and Upper Echelons Theory, both of which suggest that CEO education significantly influences firm performance by equipping executives with the knowledge and skills needed for effective decision-making and risk management.

Firstly, the study found a significant positive relationship between the level of CEO education and firm financial performance, in line with theoretical and empirical evidence from Kokeno & Muturi (2016) and Darmadi (2013). The regression analysis revealed that an increase in the level of education led to improved financial performance, supporting the argument that CEOs with higher educational qualifications are better equipped to drive strategic decisions and enhance firm outcomes. This validates the Knowledge-Based View and Upper Echelons Theory.

However, the study's findings on the type of CEO education presented a more nuanced picture. While existing studies found that business-related education positively influences firm performance, the present study revealed a negative but statistically significant relationship between the type of education and financial performance. This invalidates the Knowledge-Based View. The evidence presented in this study supports the proposition in the Upper Echelons Theory which suggests that MBA candidates are likely to be not as innovative or risk-prone compared to their counterparts. This is anchored by Mintzberg (2004) who argued that MBA programs focus too much on the analytical aspects of management and neglect the art and practical experience

involved in reflective practice, context, and sharing experiences that could otherwise boost performance.

Regarding the location of the educational institution, the study found no significant effect on financial performance. This result aligns with findings from advanced economies which suggest that the prestige or location of the educational institution has limited long-term impact on firm performance. The study therefore concludes that while education from prestigious institutions may open initial career opportunities, factors like experience and on-the-job skills become more critical for long-term success. This validates the Human Capital Theory which is an extension of the Knowledge-Based View.

One of the most critical findings of the study was the moderating role of CEO experience. The results showed that CEO experience significantly enhances the impact of both the level and type of education on firm financial performance. This finding is consistent with previous studies which demonstrated that experienced CEOs are better able to leverage their educational background to achieve better firm outcomes. Experience provides CEOs with practical knowledge and insights that complement their formal education, improving their ability to make informed decisions and navigate complex business environments.

In conclusion, while education is an essential factor in determining CEO effectiveness and firm performance, the moderating effect of experience is equally crucial. The study demonstrates that experience enhances the value of education, particularly in the context of developing economies like Kenya. As such, when making leadership appointments, firms should consider not only the educational background of their CEOs, but also their years of experience to maximize firm financial performance.

## **5.5 Recommendations for policy and practice**

### **5.5.1 Recommendations for NSE Listed companies**

NSE listed firms should incorporate advanced educational qualifications as part of their executive recruitment criteria. These firms should prioritize candidates with MBA, master's, or PhD degrees as part of their leadership pipeline development strategies. This can improve overall firm performance and competitiveness. Additionally, firms should evaluate candidates based on both educational background and industry experience. Executive boards and hiring committees should

assess how well a CEO's education is complemented by years of experience, particularly in similar business environments. This approach will ensure that candidates possess the necessary theoretical knowledge as well as practical experience to drive firm performance.

Another recommendation to NSE listed companies is that companies should invest in executive development programs that provide further education and training for their CEOs and senior management. For example, firms can offer access to executive leadership courses, workshops on innovation, risk management, and corporate governance, especially in the face of rapidly changing business environments. This approach can help CEOs stay current with industry trends and maintain their strategic leadership edge. Lastly, NSE listed firms should adopt a more holistic approach to evaluating the educational background of CEO candidates. Instead of focusing on the prestige or location of the educational institution, recruitment should emphasize the quality of the education and the relevance of the degree to the firm's industry and strategic goals.

### **5.5.2 Recommendations for policymakers**

For policymakers, regulatory bodies such as the Capital Markets Authority (CMA) and NSE should encourage firms to prioritize hiring CEOs with higher levels of education, such as postgraduate qualifications. Additionally, corporate governance frameworks covering NSE listed firms should emphasize not only the academic qualifications of CEOs but also their experience in the relevant industry. The study demonstrated that CEO experience moderates the relationship between education and firm performance, enhancing the positive effects of education. Industry regulators and professional bodies could provide guidelines that emphasize the need for a combination of education and experience in executive recruitment practices. Lastly, regulators and industry associations should establish programs that provide ongoing education for CEOs and encourage firms to invest in such initiatives.

### **5.6 Limitations of the study**

The study on the effect of CEO education and experience on the financial performance of firms listed on the NSE faced several limitations. The study focused only on firms listed on the NSE, which may limit the generalizability of the findings to other contexts. While the study provides valuable insights into the Kenyan market, the conclusions may not fully apply to firms operating in different countries, particularly in more developed economies or other emerging markets with

different regulatory and economic environments. The study also used cross-sectional data, specifically focusing on one year (2022), which presents a snapshot of the relationship between CEO education, experience, and financial performance. This limits the study's ability to capture changes over time or to explore the long-term effects of CEO education and experience on financial performance. A longitudinal study would provide a more robust understanding of how these relationships evolve over time. Lastly, the study primarily used ROA as the financial performance metric, which may not fully capture the diverse dimensions of financial performance. Other metrics such as Return on Equity, Earnings Per Share, or Tobin's Q could have provided a broader understanding of firm performance. ROA focuses on profitability relative to assets, but it may not reflect market-based performance or shareholder value.

### **5.7 Suggestions for further research**

Future research could employ a longitudinal design to assess how CEO education and experience influence firm performance over time. This approach would allow researchers to capture changes in performance metrics and provide insights into the long-term impact of CEO characteristics. Future studies should consider expanding the sample beyond firms listed on the NSE. Including unlisted firms, small and medium-sized enterprises, and firms from other emerging markets could enhance the generalizability of the findings and offer a more comprehensive view of the relationship across different contexts. Future research should incorporate a wider range of financial performance indicators beyond ROA. Metrics such as Return on Equity, Earnings Per Share, and market-based measures like Tobin's Q could provide a more nuanced understanding of the relationship between CEO characteristics and firm performance. Additional studies should investigate other variables that may impact financial performance, such as corporate governance, board composition, organizational culture, and market conditions. Understanding how these factors interact with CEO education and experience could provide a more holistic view of firm performance determinants.

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## APPENDICES

### Appendix A: Research instrument

#### Data collection sheet: CEO's educational background

Name of firm.....

	2022
<p><b>Level of education</b></p> <p>(1 for postgraduate degree (Masters, PhD). 0 for undergraduate or otherwise.)</p>	
<p><b>Type of education</b></p> <p>(1 for business related education. 0 for non-business-related education.)</p>	
<p><b>Place of educational institution</b></p> <p>(1 for foreign based school. 0 for Kenya-based school.)</p>	
<p><b>Moderating variable</b></p> <p>CEO experience (in years)</p>	

**Note: This records the latest education prior to taking the CEO position.**

**Data collection sheet: Firm's financial performance**

Name of firm.....

<b>Financial Information</b>	<b>2022</b>
<b>Annual net income</b>	
<b>Total assets</b>	
<b><i>ROA = Net income / Total assets</i></b>	
<b>Total debt</b>	
<b>Total equity</b>	
<b><i>Leverage = Total debts / Total equity</i></b> <b><i>(Proxy for firm leverage)</i></b>	
<b><i>Log of total assets</i></b> <b><i>(Proxy for firm size)</i></b>	

Note: Unless stated otherwise, values will be in millions, Kenya shillings.

## Appendix B: List of organizations in the population

	Firms listed in the Nairobi Securities Exchange	Listed at end of 2022?	Included in the sample?
<i>1 for yes, 0 for no</i>			
<b>Agricultural</b>			
1	Eaagads Ltd.		
2	Kapchorua Tea Kenya Plc.		
3	Kakuzi Plc		
4	Limuru Tea Co. Ltd.		
5	Rea Vipingo Plantations Ltd		
6	Sasini Plc.		
7	Williamson Tea Kenya Plc.		
<b>Automobiles and accessories</b>			
8	Car & General (K) Ltd.		
<b>Banking</b>			
9	ABSA Bank Kenya Plc.		
10	Stanbic Holdings Ltd.		
11	I & M Holdings Plc.		
12	Diamond Trust Bank Kenya Ltd		
13	HF Group Plc.		
14	KCB Group Plc.		
15	National Bank		
16	NCBA Group Plc.		
17	Standard Chartered Bank Kenya Ltd.		
18	Equity Group Holdings Plc.		
19	Co-operative Bank of Kenya Ltd		
20	Bank of Kigali		
<b>Commercial and services</b>			
21	Express Kenya Plc.		
22	Kenya Airways Ltd.		

23	Nation Media Group Plc.		
24	Standard Group Plc.		
25	TPS Eastern Africa (Serena) Ltd.		
26	WPP Scangroup Plc.		
27	Uchumi Supermarket Plc.		
28	Longhorn Publishers Plc.		
29	Deacons (East Africa) Plc.		
30	Sameer Africa Plc.		
31	Nairobi Business Ventures Ltd.		
<b>Construction and allied</b>			
32	ARM Cement Plc.		
33	Bamburi Cement Ltd.		
34	Crown Paints Kenya Plc.		
35	E.A Cables Ltd.		
36	E.A Portland Cement Ltd.		
<b>Energy and petroleum</b>			
37	Total Kenya Ltd.		
38	KenGen Plc.		
39	Kenya Power & Lighting Plc.		
40	Umeme Ltd		
<b>Insurance</b>			
41	Jubilee Holdings Ltd		
42	Sanlam Kenya Plc.		
43	Kenya Re - Insurance Corporation Ltd.		
44	Liberty Kenya Holdings		
45	Britam Holdings Plc.		
46	CIC Insurance Group Ltd.		
<b>Investment</b>			
47	Olympia Capital Holdings Ltd.		
48	Centum Investment Plc.		

49	Trans - Century Plc.		
50	Home Afrika Ltd.		
51	Kurwitu Ventures Ltd.		
<b>Investment services</b>			
52	Nairobi Securities Exchange Plc.		
<b>Manufacturing and allied</b>			
53	B.O.C Kenya Plc.		
54	British American Tobacco Kenya Plc.		
55	Carbacid Investments Plc.		
56	East African Breweries Ltd.		
57	Mumias Sugar Co. Ltd		
58	Unga Group Ltd.		
59	Eveready East Africa Ltd		
60	Kenya Orchards Ltd.		
61	Flame Tree Group Holdings Ltd.		
<b>Telecommunication and technology</b>			
62	Safaricom Plc.		
63	ABSA New Gold ETF		
<b>Real Estate Investment Trust</b>			
64	Stanlib Fahari I-REIT		
65	Laptrust Imara I-Reit		
<b>Exchange Traded Fund</b>			
66	New Gold Issuer (RP) Ltd		

Source: "Listed companies". Nairobi Securities Exchange. Accessed on 30<sup>th</sup> September 2023. (<https://www.nse.co.ke/listed-companies/>).

## Appendix C: IMF's country classification – Advanced economies

Advanced Economies		
Andorra	Hong Kong SAR	Norway
Australia	Iceland	Portugal
Austria	Ireland	Puerto Rico
Belgium	Israel	San Marino
Canada	Italy	Singapore
Croatia	Japan	Slovak Republic
Cyprus	Korea	Slovenia
Czech Republic	Latvia	Spain
Denmark	Lithuania	Sweden
Estonia	Luxembourg	Switzerland
Finland	Macao SAR	Taiwan Province of China
France	Malta	United Kingdom
Germany	The Netherlands	United States
Greece	New Zealand	

Source: “Country Composition of WEO Groups”. IMF. Accessed on 18<sup>th</sup> October 2023.

(<https://www.imf.org/en/Publications/WEO/weo-database/2023/April/groups-and-aggregates#ae>)

## Appendix D: SU-ISERC Ethical Approval



23<sup>rd</sup> September 2024

Ms Wachira Jacinta,  
jacinta.waruguru@strathmore.edu

Dear Ms Wachira,

**RE: CEO Education and Firm Financial Performance: Evidence from the Nairobi Securities Exchange**

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** proposal. Your application reference number is **SU-ISERC2372/24**. The approval period is from **23<sup>rd</sup> September 2024 to 22<sup>nd</sup> September 2025**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
- iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
- v. Clearance for the export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.

Yours sincerely,

**Mr Ambrose Rachier,**  
Chairperson; SU-ISERC

