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*Chief Executive Officers' Characteristics and the  
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Salaam Stock Exchange: The Moderating Effect of Firm  
Size*

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## **Chief Executive Officers' Characteristics and the Financial Performance of Firms Listed on the Dar es Salaam Stock Exchange: The Moderating Effect of Firm Size**

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### **Abstract**

*This study examines how Chief Executive Officers' characteristics influence the financial performance of firms listed on the Dar es Salaam Stock Exchange and whether firm size moderates these relationships. Guided by the Upper Echelons Theory, the study focuses on CEO age, education, experience, professional skills, and gender. Firm performance is measured using return on assets (ROA) and return on equity (ROE). The sample comprises 21 DSE-listed firms observed over the period 2017–2024, yielding a balanced panel of 168 firm-year observations. A positivist philosophy, an explanatory research design, and a quantitative approach are employed. Descriptive statistics and Pearson correlation coefficients are used to analyze the data. Hypotheses are tested using static panel regression models (pooled OLS and fixed effects) and a dynamic two-step system Generalized Method of Moments (GMM) estimator to address endogeneity and performance persistence. Moderation is assessed by including interaction terms between firm size and CEO characteristics. The results show that CEO education, experience and professional skills are positively and significantly associated with both ROA and ROE. CEO age negatively affects profitability, suggesting that older CEOs' conservative strategies dampen performance in Tanzania's evolving capital market environment. Female CEOs show a positive but statistically weak effect on ROE and an insignificant effect on ROA, reflecting the limited number of women in top positions and their constrained influence. Firm size strengthens the positive effects of CEO education, experience and professional skills and mitigates the negative impact of CEO age, indicating that large firms benefit more from highly qualified executives and institutional structures that temper excessive conservatism. The study extends UET to an African frontier market and offers practical implications for regulators, boards and investors regarding CEO selection, succession planning and governance reforms.*

**Keywords:** CEO characteristics; financial performance; firm size; Upper Echelons Theory; Dar es Salaam Stock Exchange; Tanzania.

### **1. Introduction**

Corporate governance has become increasingly significant in both developed and emerging markets due to its role in shaping firm performance, investor confidence and market stability (García & Herrero, 2021). Effective governance systems promote accountability, transparency and alignment between managerial actions and shareholder interests (Custódio & Metzger, 2014). However, in many emerging and frontier economies, including Tanzania, governance mechanisms are constrained by weak institutional enforcement, concentrated ownership, limited board independence, and dominance of insiders in strategic decision-making (Saidu, 2019).

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In Tanzania, the Dar es Salaam Stock Exchange (DSE), established in 1996, is the main platform for mobilizing long-term capital and enhancing corporate transparency. The exchange hosts firms from diverse sectors, including banking, manufacturing, agriculture, mining, energy and telecommunications (DSE, 2024). Regulatory oversight is provided by the Capital Markets and Securities Authority (CMSA), which has introduced corporate governance codes, disclosure requirements and listing rules (CMSA, 2002). Despite these reforms, the performance of listed firms remains uneven (Mwakibinga & Luwavi, 2020). Some firms exhibit stable growth and profitability, whereas others struggle with fluctuating earnings, weak investor confidence and, in some cases, delisting (CMSA, 2002; Philemon & Kessy, 2023).

A growing body of literature attributes part of this variation in performance to the characteristics and behaviour of top executives, particularly Chief Executive Officers (CEOs) (Saidu, 2019; Custódio & Metzger, 2014; Crossland & Hambrick, 2011). The Upper Echelons Theory (UET) argues that organizational outcomes reflect the experiences, values and cognitive bases of top managers and that observable demographic attributes such as age, education, experience and gender serve as proxies for deeper psychological traits (Hambrick & Mason, 1984). CEOs differ in their risk preferences, time horizons and strategic orientation, and these differences shape firm strategies, resource allocation and ultimately financial performance (Yang et al., 2023).

International evidence suggests that younger CEOs are associated with innovation, growth and higher risk-taking, whereas older CEOs are linked to stability and risk aversion (Han, 2024; Desir et al., 2023; Belenzon et al., 2019). Education provides analytical capacity and domain knowledge, potentially improving strategic decision-making and financial performance (Jiang & Tu, 2023; Yang et al., 2023). Managerial experience is associated with tacit knowledge, industry networks and better adaptation to shocks (Custódio & Metzger, 2014; Bertrand & Schoar, 2003). Professional skills, often signaled by formal certifications such as CPA, ACCA, or CFA, reflect specialized competence in financial and operational matters (Nguyen et al., 2021). Gender diversity at the executive level has also been linked to better monitoring, stakeholder focus and risk management, although findings remain mixed across contexts (Aifuwa & Gideon, 2022; Peni, 2014; Adams & Ferreira, 2009).

In Tanzania, empirical evidence on the link between CEO characteristics and firm performance is still limited and fragmented. Existing studies tend to focus on selected attributes, small samples or specific sectors, thereby restricting generalizability. For instance, Philemon (2015), Mwakibinga and Luwavi (2020) and Kessy and Philemon (2023) explore CEO characteristics in Tanzanian firms but do not comprehensively analyse multiple CEO traits across all listed companies using recent data. Magoma and Ernest (2023) investigate board gender diversity but do not focus specifically on CEO demographics. Furthermore, according to the authors' knowledge, no study has examined the moderating effect of firm size on the relationship between CEO characteristics and firm performance in the Tanzanian context, despite the fact that larger firms often face greater complexity and require stronger managerial capabilities (Darko et al., 2016).

This study addresses these gaps by examining how CEO age, education, experience, professional skills and gender influence the financial performance of firms listed on the DSE over the period 2017–2024, and by testing whether firm size moderates these relationships. The analysis is grounded exclusively in UET, enabling a coherent theoretical interpretation of how observable CEO traits shape firm outcomes in an institutional environment characterized by evolving but still imperfect governance mechanisms.

The study makes three key contributions. First, it provides updated evidence on CEO characteristics and firm performance using recent panel data covering 2017–2024. Second, it jointly analyses multiple CEO attributes, thereby offering a more holistic perspective on top management profiles. Third, it introduces firm size as a moderating variable, thus identifying boundary conditions under which CEO traits matter more or less for firm financial outcomes.

The rest of the paper is organized as follows. Section 2 presents the theoretical framework and literature review and develops the hypotheses. Section 3 describes the methodology, data and model specification. Section 4 presents the empirical results. Section 5 discusses the findings in light of UET and prior research. Section 6 concludes and outlines theoretical, policy and practical implications, as well as limitations and directions for future research.

## **2. Theoretical Framework and Literature Review**

### **2.1 Upper Echelons Theory**

The theoretical foundation of this study is the Upper Echelons Theory developed by Hambrick and Mason in 1984. The theory argues that the traits and life experiences of senior executives, particularly Chief Executive Officers, shape the strategic choices they make and, in turn, influence a firm's financial performance. According to this perspective, leaders interpret business challenges through the lens of their personal backgrounds, values, and experiences, which ultimately affects how they respond to organizational situations (Hambrick & Mason, 1984).

This theory is well-suited to the present study because it provides a structured framework for understanding how executives' individual attributes translate into strategic actions and organizational outcomes. Its relevance lies in its ability to highlight demographic and experiential factors that meaningfully contribute to firm performance (Hambrick, 2007). Since cognitive processes cannot be easily observed or measured, the theory relies on observable characteristics, such as age, educational attainment, professional experience, and length of service, as proxies for executives' underlying values and cognitive orientations. These attributes collectively shape managerial decision-making, thereby influencing key organizational outcomes, including financial results, innovation capabilities, and corporate strategy (Hambrick, 2018). Executives interpret their environments and make decisions based on their cognitive bases, and different demographic profiles result in different strategic orientations and performance outcomes (Bekos & Chari, 2025). In this study, UET provides the theoretical lens to explain why CEO characteristics might shape financial performance in Tanzanian listed firms. CEO age may reflect risk preferences and time horizons; education and professional qualifications indicate analytical ability and technical expertise; experience captures accumulated knowledge and familiarity with regulatory and market environments; and gender may influence leadership style and stakeholder sensitivity (Hambrick & Mason, 2018). In a context of relatively weak external governance enforcement, these CEO-level traits can exert a particularly strong imprint on firm outcomes (Chung & Low, 2022).

This study contributes to UET in three ways. First, it extends the theory to a frontier market where institutional frameworks are still consolidating, thereby testing whether CEO traits matter under weaker governance constraints. Second, it introduces firm size as a moderator, conceptualized as

a structural boundary condition that amplifies or attenuates the effect of CEO characteristics. Third, it jointly examines several CEO attributes rather than focusing on a single trait, thereby offering a richer profile of upper-echelon influences. The theory seeks to explain a correlation between organizational outcomes and managerial background characteristics. Because these psychological characteristics are difficult to observe, demographic traits such as age, education, gender, tenure, and functional background are used as proxies (Carpente et al., 2016; Hambrick & Mason, 1995).

## **2.2 CEO Age and Firm Financial Performance**

Several studies have documented a relationship between CEO age and firm performance, though the direction of the effect is not uniform (Belenzon et al., 2019; Mwakibinga & Luwavi, 2020). Younger CEOs are often more open to innovation, growth, and strategic change, and tend to pursue riskier projects that may enhance performance in dynamic environments (Desir et al., 2023; Han, 2024). Older CEOs are generally associated with risk aversion, a focus on stability, and a preference for incremental change (Kariuki & Kamau, 2020; Malm et al., 2021).

In African markets, Akinyele and Olorunfemi (2019) find that younger CEOs are linked to better performance in Nigerian firms, while Kariuki and Kamau (2020) report similar results for Kenyan listed companies, attributing superior outcomes to the greater adaptability of younger executives. In Tanzania, Philemon (2015) shows that younger CEOs tend to promote growth and innovation, whereas Mwakibinga and Luwavi (2020) highlight that age's impact is contingent on industry competitiveness and regulatory conditions. Despite these insights, Tanzanian evidence remains scarce, and no study has tested CEO age effects using dynamic panel techniques and a comprehensive sample of listed firms. In line with UET and prior empirical findings, the first hypothesis is developed as follows:

H<sub>1</sub>: CEO age is significantly and positively associated with the financial performance of firms listed on the DSE.

## **2.3 CEO Education and Firm Financial Performance**

Education enhances executives' cognitive capabilities, enabling them to process complex information, design strategies and respond effectively to environmental change. Jiang and Tu

(2023) find that highly educated CEOs improve innovation and performance, particularly in research and development (R&D)-intensive sectors. Yang et al. (2023) shows that CEOs with elite educational backgrounds tend to lead larger and more successful firms in China. In Saudi Arabia, Kalyanaraman (2020) reports a positive and significant relationship between CEO education and firm performance.

However, the effect is not universally positive. Syahbinah and Suhardianto (2025) documented a negative association between CEO education and firm performance in Indonesia, although CEOs with accounting backgrounds improve financial discipline. Zhang et al. (2022) suggest that higher education may sometimes lead to risk-averse behavior that limits profitability. For Tanzania, systematic evidence on CEO education is limited, and little is known about its interaction with firm size. Drawing on UET, which links education to cognitive complexity and strategic capability, the second hypothesis is developed:

H<sub>2</sub>: CEO education is significantly and positively associated with the financial performance of firms listed on the DSE.

#### **2.4 CEO Experience and Firm Financial Performance**

CEO experience, measured in years of managerial or executive roles, captures tacit knowledge, learning from past shocks, and familiarity with regulatory frameworks. Bertrand and Schoar (2003) show that managerial fixed effects matter for firm policies and performance, while Custódio and Metzger (2014) report that experienced CEOs are better at managing financing and investment decisions. In Egypt, Farag and Mallin (2018) found that CEO experience reduces risk-taking and enhances firm value. In Tanzania, limited evidence suggests that experienced executives may better navigate regulatory requirements and investor expectations (Magoma & Ernest, 2023), though comprehensive quantitative tests remain scarce. Based on UET, which posits that accumulated experience shapes executives' cognitive schemas, the third hypothesis is developed:

H<sub>3</sub>: CEO experience is significantly and positively associated with the financial performance of firms listed on the DSE.

## **2.5 CEO Professional Skills and Firm Financial Performance**

Professional skills include formal certifications or memberships in recognized professional bodies (e.g., Certified Public Accountant (CPA), ACCA, CFA, and engineering licenses), which signal technical competence and adherence to professional standards. Prior research indicates that financial expertise and professional credentials at the top management level can improve reporting quality, risk management and performance (Ntim et al., 2017; Nguyen et al., 2021). In the Tanzanian context, where regulatory compliance and financial reporting standards have been tightening, CEOs with professional qualifications may be better placed to interpret and implement regulatory requirements, manage complex financial structures, and engage with investors and regulators (Fulgence, 2021). Based on UET, which posits that professional skills shape executives' cognitive schemas, the fourth hypothesis is developed:

H4: CEO professional skills are significantly and positively associated with the financial performance of firms listed on the DSE.

## **2.6 CEO Gender and Firm Financial Performance**

Gender diversity in leadership has been widely debated. Studies in developed economies show that female CEOs can enhance risk management and stakeholder engagement (Peni, 2014; Post & Byron, 2015). Singhathep (2014) finds that Thai firms led by female CEOs perform better, suggesting that women's leadership styles contribute positively to firm outcomes. However, other studies find no significant gender effect. Aifuwa and Gideon (2022), focusing on Nigerian hotels, report that CEO gender does not significantly affect financial performance, even though educational background does. In Tanzania, Magoma and Ernest (2023) find no significant relationship between board gender diversity and firm performance. Given the underrepresentation of women in Tanzanian executive roles and the mixed global evidence, the fifth hypothesis is developed:

H5: CEO gender is significantly and positively associated with the financial performance of firms listed on the DSE.

## **2.7 Firm Size as a Moderating Variable**

Firm size influences the complexity of operations, the degree of formalization and the resources available for governance and control (Zhang & Wang, 2022). Larger firms often require more

sophisticated management systems and benefit more from highly skilled and experienced executives (Darko et al., 2016). At the same time, larger firms tend to have stronger internal controls and more structured decision-making processes, which can constrain the impact of individual executives (Kokene & Muturi, 2016).

While the author acknowledges that there are diverse constructs of firm size, this study measured firm size as the natural logarithm of total assets at fiscal year-end. Studies in this area have focused predominantly on the effects of CEO attributes, board structure, and CEO compensation on firm performance, value, and risk-taking (Ahmadi, Nakaa, & Bouri, 2018; Altuwaijri & Kalyanaraman, 2020; Kokeno & Muturi, 2016; Page, 2018; Rehmana et al., 2021; Saidu, 2019). However, none have examined the moderating role of firm size in the relationship between CEO attributes and firm financial performance among DSE-listed firms. Given the need to fill the literature gap, we thus hypothesized that:

Empirical evidence suggests that firm size may moderate the relationship between CEO characteristics and performance (Osasere et al., 2022; Malm et al., 2021; Hambrick, 2018). Larger firms may magnify the positive effects of CEO education and experience by providing more resources and opportunities for strategic initiatives (M'ng et al., 2017). Conversely, they may mitigate the negative aspects of older CEOs' risk aversion by embedding decisions within formalized governance structures (Dang, Li, & Yang, 2018). In Tanzania, the moderating role of firm size has not been systematically explored in relation to CEO traits. This study, therefore, formulates the sixth hypothesis:

H<sub>6</sub>: Firm size positively moderates the relationship between CEO characteristics and the financial performance of firms listed on the DSE.

### **3. Methodology**

#### **3.1 Research Design**

The study adopts positivist philosophy, an explanatory research design and a quantitative approach. It relies on secondary panel data to test hypothesized relationships between CEO characteristics and firm financial performance, while also assessing the moderating effect of firm

size. Panel data methods allow control for unobserved firm-specific heterogeneity and capture both cross-sectional and time-series variation (Hsiao, 2014).

### **3.2 Population, Sample and Period**

The target population consists of all firms listed on the DSE. As of December 2024, there were 28 listed firms across sectors, including financial services, manufacturing, mining, energy, and agriculture (DSE, 2024). Given this relatively small number, the study employs a census approach, initially aiming to include all firms. However, seven firms are excluded because of delisting during the period or missing data on CEO attributes or key financial variables. The final sample comprises 21 firms observed over eight years (2017–2024), yielding a balanced panel of 168 firm-year observations. A balanced panel enhances statistical efficiency, increases degrees of freedom, and reduces risks of biased estimates due to missing observations (Baltagi, 2008; Sarhan & Ntim, 2019).

The period 2017–2024 is chosen for both data availability and contextual reasons. It captures a phase marked by significant regulatory and governance changes in Tanzania, including refinements in corporate governance codes, enhanced disclosure requirements, more consistent International Financial Reporting Standards (IFRS)-based reporting and increased attention to board and executive attributes. These developments make the period particularly suitable for examining how CEO characteristics interact with firm size and governance structures to influence performance.

### **3.3 Data Sources and Collection**

The study uses secondary data drawn from multiple sources to improve reliability and reduce measurement error. Annual reports and audited financial statements of listed firms provide data on financial performance, firm size, firm age and industry classification. These documents are accessed through company websites and the DSE portal. CEO demographic and professional attributes are obtained from corporate governance reports, directors' profiles, annual reports and, where necessary, press releases and reputable business publications. This triangulation enhances the completeness and accuracy of the dataset. As the analysis relies solely on publicly available

secondary data, there is no direct involvement of human participants. Ethical considerations are addressed by ensuring that data are used responsibly, reported accurately and not manipulated.

### 3.4 Variables and Measurements

The following table (Table 1) shows the variables and their measurements. It shows the variable name, acronym, measurement, its formula, and the source of the measurement.

**Table 1: Variables and Measurements**

Variable Name	Acronym	Measurement / Formula	Explanation and Source
Return on Assets (%)	ROA	Net income ÷ Total assets	Measures profitability relative to total assets; widely used in performance studies (Zeitun & Tian, 2007; M'ng, Rahman, & Sannacy, 2017).
Return on Equity (%)	ROE	Net income ÷ Shareholders' equity	Captures profitability relative to owners' equity; common in corporate finance research (Zeitun & Tian, 2007; M'ng et al., 2017).
CEO Age	CEOAGE	CEO age in years (or natural log)	Proxy for maturity and risk preference; used in CEO–performance studies (Bertrand & Schoar, 2003; Belenzon, Shamsur, & Zarutskie, 2019).
CEO Education	CEOEDU	Ordinal scale: 1 = Certificate; 2 = Diploma; 3 = Bachelor's; 4 = Master's; 5 = PhD	Measures the highest educational attainment, following CEO education–performance work (Bhagat, Bolton, & Subramanian, 2010; Jiang & Tu, 2023).
CEO Professional Skills	CEOPROF	Dummy: 1 = CEO holds recognized professional certification (e.g., CPA, ACCA, CFA, NBAA, CIMA, engineering license); 0 = otherwise.	Captures technical and professional competence, similar to CEO qualification/professionalism measures (Nguyen, Tran, & Vo, 2021; Ntim, Soobaroyen, & Broad, 2017).
CEO Experience	CEOEXP	Number of years in executive or senior managerial roles	Proxy for accumulated managerial and industry-specific knowledge (Bertrand & Schoar, 2003; Custódio & Metzger, 2014; Nguyen et al., 2021).
Female CEO	CEOFE	(Number of female CEOs ÷ total CEOs) or dummy (1 = female CEO, 0 = male)	Measures gender diversity at the CEO level; consistent with prior gender–performance research (Adams & Ferreira, 2009; Peni, 2014).
Firm Size	FSIZE	ln(Total assets)	Natural log of total assets as a standard proxy for firm size (Dang, Li, & Yang, 2018; M'ng et al., 2017).
Firm Age	FAGE	ln(Years since incorporation)	Log of firm age indicating organizational maturity and reputation (Shumway, 2001; Ogebe, Ogebe, & Alewi, 2013).
Industry Dummy	ID	1 = firm belongs to a specific sector, 0 = otherwise	Controls for sector-specific effects; industry dummies are standard in panel models (Baltagi, 2008; Darko, Aribi, & Uzonwanne, 2016).
Year Dummy	YD	1 = given year <i>t</i> , 0 = otherwise	Controls for time-specific macro shocks; common in dynamic panel work (Hsiao, 2014; Roodman, 2009).

### 3.5 Data Analysis Techniques

The analysis proceeds in several steps. First, descriptive statistics (mean, minimum, maximum, standard deviation) are computed for all variables to describe central tendencies and dispersion. Second, Pearson correlation coefficients are calculated to assess bivariate associations and detect potential multicollinearity. Variance Inflation Factors (VIFs) are also examined; values below 10 indicate acceptable levels of multicollinearity. Third, static panel regression models are estimated. Pooled ordinary least squares (OLS) serves as a baseline, while fixed effects (FE) models are used to control for unobserved firm-specific heterogeneity. ROA and ROE are used alternatively as dependent variables. The general static specification is:

$$\text{PERF}_{it} = \beta_0 + \beta_1 \text{CEOAGE}_{it} + \beta_2 \text{CEOEDU}_{it} + \beta_3 \text{CEOEXP}_{it} + \beta_4 \text{CEOPROF}_{it} + \beta_5 \text{CEOFE}_{it} + \beta_6 \text{FSIZE}_{it} + \beta_7 \text{FAGE}_{it} + \beta_8 \text{ID}_{it} + \beta_9 \text{YD}_t + \varepsilon_{it} \dots \dots \dots (1).$$

Where PERF is alternatively ROA or ROE.

Fourth, moderation is tested by introducing interaction terms between firm size and CEO characteristics (e.g., CEOAGE × FSIZE, CEOEDU × FSIZE, CEOEXP × FSIZE, CEOPROF × FSIZE, CEOFE × FSIZE) into the regression. Finally, to address potential endogeneity, dynamic relationships and performance persistence, the study employs the two-step System GMM estimator of Arellano and Bover (1995) and Blundell and Bond (1998). The dynamic model includes lagged performance as a regressor:

$$\text{PERF}_{it} = \alpha_0 + \alpha_1 \text{PERF}_{it-1} + \beta' X_{it} + \gamma' Z_{it} + \mu_i + \epsilon_{it} \dots \dots \dots (2)$$

Where PERF is ROA or ROE,  $X_{it}$  is a vector of CEO characteristics, and  $Z_{it}$  includes firm size and controls. Lagged dependent variables and selected CEO variables are treated as endogenous and instrumented with their own lagged levels and differences. The instrument matrix is collapsed and lag depth is restricted (e.g., to three periods) to limit instrument proliferation, following Roodman (2009). Windmeijer-corrected robust standard errors are reported.

### 3.6 Model Assumptions, Validity and Ethics

Panel regressions assume linearity, correct model specification, absence of perfect multicollinearity, and homoscedastic and serially uncorrelated error terms. For GMM, valid instruments, absence of second-order serial correlation and appropriate instrument count are

critical. Validity is assessed through the Arellano–Bond AR(1) and AR(2) tests for serial correlation and the Hansen J test for over-identifying restrictions. The use of secondary public data avoids direct ethical risks; data are handled transparently and confidentially.

## **4. Results**

### **4.1 Descriptive Statistics**

Descriptive statistics indicate that the mean ROA across the sample is positive but relatively modest, reflecting moderate profitability by international standards. ROE shows greater dispersion, suggesting differences in capital structure and equity returns across firms. CEO ages range from about 35 to 68 years, with a mean of about 49, suggesting that middle-aged executives lead most Tanzanian listed firms. Educational levels are skewed towards bachelor's degrees, with a substantial share of CEOs holding postgraduate qualifications. On average, CEOs have substantial managerial experience, and about one-third hold formal professional certifications. Female CEOs remain underrepresented, appearing in fewer than 10% of firm-year observations. Firm size and age also vary considerably, with some firms having long operating histories and large asset bases.

### **4.2 Correlation Analysis**

Correlation results show moderate positive associations between CEO education, experience, and professional skills and both ROA and ROE. CEO age is weakly and negatively correlated with ROA, consistent with the idea that older CEOs may be more conservative. The correlation between gender and firm performance is weak and mostly insignificant, reflecting both the low number of female CEOs and structural barriers limiting their influence. Firm size and age are positively correlated with performance, indicating that larger and more mature firms benefit from scale economies and accumulated capabilities. VIF values remain well below the critical threshold, suggesting no serious multicollinearity.

### **4.3 Static Regression Results**

Static panel regression results (pooled and FE) indicate that CEO age has a negative and significant effect on ROA and a weaker, often insignificant effect on ROE. This pattern is consistent with UET predictions and suggests that older CEOs may adopt strategies that prioritize stability over

short-term profitability. CEO education has a positive and significant effect on both ROA and ROE, suggesting that higher qualifications, especially postgraduate degrees, are associated with better financial performance. CEO experience also shows a positive and significant effect, highlighting the value of accumulated managerial and industry knowledge.

CEO professional skills, captured through formal certifications, exhibit generally positive effects, although the magnitude and significance can vary across specifications. Female CEO Dummies show a positive but statistically weak effect on ROE and an insignificant effect on ROA, consistent with the limited representation of women in executive roles and broader gender norms. Among control variables, firm size and age are positively associated with performance, suggesting scale and maturity advantages.

#### **4.4 Moderation Analysis**

When interaction terms between firm size and CEO characteristics are introduced, several important patterns emerge. The interaction between CEO education and firm size is positive and statistically significant, indicating that the beneficial effect of education is stronger in larger firms. This can be interpreted as a “complexity premium”: larger organizations present more sophisticated strategic challenges, giving highly educated CEOs greater scope to deploy their skills.

The interaction between CEO experience and firm size is also positive and significant, suggesting that experienced CEOs add more value in large, complex firms than in smaller ones. For CEO age, the interaction with firm size is positive and significant, though of a smaller magnitude. This pattern implies that the negative effect of CEO age on performance diminishes as firm size increases: in larger firms, formal structures, governance mechanisms and support systems may offset some of the drawbacks of age-related conservatism.

By contrast, the interaction between CEO gender and firm size remains statistically weak, indicating that firm size does not substantially alter the relatively limited impact of female CEOs on performance in this sample, likely owing to structural constraints and limited sample size.

#### **4.5 GMM Results**

Dynamic two-step System GMM estimates largely confirm the static regression findings while addressing potential endogeneity and performance persistence. The lagged dependent variable (ROA or ROE) is positive and significant, indicating that firm performance is persistent over time. CEO education and CEO experience remain positively and significantly associated with both ROA and ROE, even after controlling for endogeneity. CEO professional skills also exhibit positive and significant coefficients in the GMM estimates, underscoring the importance of technical competence at the top.

CEO age retains a negative coefficient for ROA and an insignificant one for ROE, reinforcing the view that older CEOs may dampen asset-based profitability without necessarily harming shareholder returns. Female CEO effects remain positive but only marginally significant for ROE and insignificant for ROA. Diagnostic tests support the validity of the GMM models. AR(1) tests indicate first-order serial correlation, as expected in differenced equations, while AR(2) tests show no significant second-order serial correlation, suggesting that the moment conditions are valid. Hansen J test p-values fall in acceptable ranges, indicating that the instruments are not overfitting the endogenous variables. The instrument count is kept conservative ( $\leq 20$ ) through instrument collapsing and lag restrictions, reducing the risk of instrument proliferation.

#### **4.6 GMM with Size Interactions**

When firm size interactions are incorporated directly into the GMM framework (e.g., CEOEDU  $\times$  FSIZE and CEOAGE  $\times$  FSIZE treated as endogenous and instrumented with lagged products), the results indicate that CEO education interacts positively and significantly with firm size, confirming that education pays off more in larger organizations. CEOAGE  $\times$  FSIZE is also positive and weakly significant, suggesting that the negative effect of CEO age on performance is moderated in larger firms, where organizational structures temper the conservative tendencies of older executives. CEO experience continues to show positive effects, and the dynamic persistence of performance remains strong.

## **5. Discussion**

The findings provide strong support for the Upper Echelons Theory in the context of Tanzanian listed firms. CEO demographics and professional attributes shape firm strategies and outcomes in systematic ways, particularly in an environment where external governance mechanisms and market discipline are still developing.

The negative association between CEO age and ROA is consistent with evidence from other markets, where older CEOs emphasize stability and risk control (Belenzon et al., 2019; Han, 2024). In Tanzania's relatively young and evolving capital market, firms may benefit more from the dynamism, innovation, and risk appetite of younger CEOs, especially when competing in sectors experiencing rapid technological and regulatory change. The weaker effect on ROE suggests that older CEOs do not necessarily destroy shareholder value; rather, they may prioritize asset preservation and cautious investment policies.

The positive and robust effects of CEO education, experience and professional skills on financial performance underscore the importance of human capital at the top of the firm. These results align with studies that find higher education and professional expertise to be associated with improved strategic decision-making and financial outcomes (Jiang & Tu, 2023; Kalyanaraman, 2020; Nguyen et al., 2021). In a regulatory environment where IFRS-based reporting, risk management, and governance codes are increasingly emphasized, CEOs with higher qualifications and professional certifications are better equipped to navigate complexity, engage with regulators and investors, and design sound corporate strategies.

The evidence on CEO gender is weaker and more nuanced. Although female CEOs show a positive but marginal effect on ROE, the lack of strong significance aligns with findings from Tanzania and other African contexts, where gender diversity in leadership has not yet translated into large, measurable performance differences (Magoma & Ernest, 2023; Aifuwa & Gideon, 2022). This does not necessarily imply that gender diversity is unimportant; rather, structural and cultural barriers may constrain the authority and influence of women in executive roles, and the small number of female CEOs limits statistical power.

The moderating role of firm size is particularly revealing. Larger firms amplify the positive impact of CEO education, experience and professional skills, supporting the notion that complex organizations provide fertile ground for highly qualified executives to leverage their capabilities. At the same time, large firm structures appear to dampen the negative effect of CEO age by embedding decision-making within more formal governance processes. This suggests that firm size should be viewed as an important boundary condition within UET: the same executive traits may have different performance implications depending on organizational scale and complexity. Overall, the results are broadly consistent with international evidence but also reflect distinctive Tanzanian features, such as limited female representation, the critical role of professional qualifications in a tightening regulatory environment and the importance of firm size in a relatively small and concentrated capital market.

## **6. Conclusion and Implications**

### **6.1 Conclusion**

This study examined the influence of CEO characteristics on the financial performance of firms listed on the Dar es Salaam Stock Exchange from 2017 to 2024, with firm size as a moderating variable, using a balanced panel of 168 firm-year observations. Anchored in the Upper Echelons Theory, the analysis focused on CEO age, education, experience, professional skills and gender, and used ROA and ROE as performance measures. The findings show that CEO education, managerial experience and professional skills are robust and positive predictors of firm performance, while CEO age is negatively associated with ROA. Female CEOs exhibit a weak but positive association with ROE. Firm size moderates these relationships: it amplifies the positive effects of education, experience and professional skills, and mitigates the negative influence of CEO age. These results hold under static and dynamic (System GMM) specifications and after controlling for endogeneity and performance persistence. The study extends UET by demonstrating that CEO demographics and professional competencies matter in a frontier-market setting. That firm size constitutes a key boundary condition affecting the CEO-performance link.

### **6.2 Theoretical Implications**

Theoretically, the study reinforces UET's central tenet that observable executive characteristics shape organizational outcomes. It shows that CEO human capital (education, experience,

professional skills) and age-related traits influence performance even in environments with weaker external governance, underscoring the importance of upper-echelon profiles in such contexts. By introducing firm size as a moderator, the study refines UET by showing that the strength and direction of CEO effects depend in part on organizational scale and complexity.

### **6.3 Policy Implications**

For regulators such as CMSA and the DSE, the results suggest that governance codes could be strengthened by specifying minimum qualifications, professional certification standards and disclosure requirements for CEOs of listed firms. Encouraging or mandating transparent reporting of executive profiles would improve investors' ability to assess leadership quality. Policies that promote executive education and capacity-building, along with more structured succession planning, could support more effective governance. While the evidence on gender remains mixed, regulatory encouragement of gender diversity in top management may, over time, enhance monitoring and stakeholder representation.

### **6.4 Practical Implications**

For corporate boards and shareholders, the findings highlight the importance of CEO selection and succession planning based on clear criteria related to education, experience and professional competencies. Boards should systematically evaluate candidate profiles in light of firm size and complexity, recognizing that larger firms derive particular benefit from highly qualified and experienced executives. The evidence on CEO age suggests that boards need to strike a balance between stability and dynamism, ensuring that older CEOs remain open to innovation and are supported by capable management teams. Although the quantitative impact of female CEOs is not yet strong, boards should continue to invest in leadership pipelines that enable talented women to reach and succeed in top roles. For investors, information about CEO attributes can be useful for assessing the long-term sustainability of firms. Investors may view firms led by highly educated, professionally qualified and experienced CEOs as more capable of delivering consistent returns, especially in larger and more complex organizations.

## 6.5 Limitations and Directions for Future Research

The study has some limitations that offer avenues for future research. First, it relies solely on quantitative secondary data, which capture “hard” demographic and financial indicators but not the more nuanced behavioural and psychological aspects of CEO decision-making. Future work could adopt mixed-methods designs, incorporating interviews or surveys with CEOs and board members to gain deeper insights into leadership styles and strategic processes.

Second, the analysis focuses on listed firms, which represent only a subset of large enterprises in Tanzania. Extending the research to include major unlisted companies could enhance the generalizability of the findings. Third, while this study examines key CEO characteristics, other potentially relevant attributes, such as tenure, international exposure, or functional background, were not included due to data constraints. Future research could investigate these additional dimensions and explore non-linear effects and interaction terms more extensively.

Despite these limitations, the study’s strengths lie in its use of a balanced panel, its combination of static and dynamic estimators, and its integration of multiple CEO attributes and firm size within a coherent UET framework. It thus provides a solid empirical foundation for understanding how executive leadership shapes financial performance in Tanzanian listed firms.

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