

# Do CEO characteristics impact the decision to hire external auditor with forensic accounting competencies? Evidence from Jordanian listed companies

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## Abstract

**Purpose** – This paper aims to analyze whether chief executive officer (CEO) characteristics are linked with corporate decisions to hire external auditors with forensic accounting skills.

**Design/methodology/approach** – The research explores how attributes such as CEO education, compensation, age and duality influence this corporate governance decision. Adopting an integrated theoretical framework of upper echelon theory and resource dependence theory, this study utilizes logit and probit regression models to analyze data from 71 companies listed on the Amman Stock Exchange (ASE). Data were collected from published annual reports for six fiscal years from 2017 to 2022.

**Findings** – The findings reveal that CEO education, compensation and age significantly impact the likelihood of appointing external auditors with forensic accounting expertise. Specifically, higher educational qualifications, greater compensation and older age are positively associated with this decision. However, CEO duality does not show a significant influence.

**Research limitations/implications** – The study's scope is limited to firms listed on the ASE, which may affect the generalizability of the findings. Future research could expand to other regions and adopt longitudinal designs to provide a more comprehensive understanding of these relationships.

**Social implications** – Regulators and policymakers should consider the role of CEO attributes in enhanced financial transparency and accountability. Highly qualified executives may improve fraud detection and minimize financial risk. Corporate governance codes could also align executive profiles with risk management strategies.

**Originality/value** – This study contributes to the literature by providing empirical evidence on the influence of CEO characteristics on the adoption of forensic accounting services in a developing market context. It highlights the role of leadership attributes in shaping corporate governance practices and reinforces the need for firms to consider these attributes in their decision-making processes.

**Keywords** Forensic accounting, CEO characteristics, External auditors, Logit regression, Probit regression, Jordan

**Paper type** Research article



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## Introduction

In most corporations, the audit committee, a subcommittee of the board of directors, is responsible for hiring, evaluating, and overseeing the work of external auditors (Nowicki, 2024). While the audit committee holds ultimate responsibility, the CEO may provide input or recommendations about external auditors, especially in cases where the CEO has significant control (Kalembe *et al.*, 2024). CEOs can indirectly influence the selection of auditors by setting the tone of corporate governance and reinforcing the importance of financial reporting integrity (Corten *et al.*, 2021). Therefore, this paper aims to analyze whether CEO characteristics influence corporate decisions to hire external auditors with forensic accounting skills.

Forensic accounting has gained importance for organizations, highlighting the crucial role of business leaders in preventing fraud and responding to litigation risks (Al-Hazaima *et al.*, 2023; Alzoubi, 2023; Dimitropoulos and Reading, 2025). Research suggests that many firms aim to hire an external auditor who has forensic accounting skills and competencies (Alkhalaileh *et al.*, 2024). Nevertheless, there is a research gap regarding the characteristics of CEOs who are inclined to hire an external auditor with forensic accounting skills.

Research on CEO characteristics and financial performance has produced important findings. CEO tenure, duality, experience, power, and political connections enhance corporate performance (Alfraih, 2017). Moreover, CEOs with finance qualifications improve financial performance and drive profitability, while experienced CEOs boost hiring performance (Akono, 2020). Researchers have employed various theories to study the impact of CEO characteristics. Saleh *et al.* (2020) used an integrated framework of agency and resource dependence theories. Agency theory focuses on aligning the interests of agents and principals, while resource dependence theory emphasizes the role of boards as resource providers (Al Ani *et al.*, 2024; Alzeban, 2022).

Generally speaking, auditor choice is affected by various factors (Bedford *et al.*, 2023). For example, Azizkhani *et al.* (2023) reported that the characteristics of the audit committee are important factors in determining the auditor choice. Moreover, Ferdous *et al.* (2024) believe that CEO characteristics may also influence the decision to hire an external auditor with specific skills. Therefore, we suggest that CEO characteristics may influence the decision to hire auditors with forensic accounting competencies.

The remainder of this article is organized as follows. Section 2 reviews the relevant literature on forensic accounting and CEO characteristics. Section 3 provides the theoretical framework for the study. This is followed by section 4, which develops the study hypotheses. Section 5 describes the research methodology, including data collection, variable definitions, and the statistical models used for analysis. Section 6 presents the empirical results, discussing the findings in relation to the hypotheses and existing literature. Finally, Section 7 concludes the study, summarizing the key contributions and highlighting the research's limitations.

## Literature review

### *Forensic accounting*

Forensic accounting consists of the application of accounting, auditing, and investigative skills in conducting an examination and analysis of financial information to be used in a legal context (Al Shbeil *et al.*, 2023; Alshurafat *et al.*, 2021b; Ismail *et al.*, 2022). The American Institute of Certified Public Accountants (AICPA) defined forensic accounting as “the use of accounting, auditing and investigative skills in support of legal proceedings.” These descriptions emphasize that the forensic accounting discipline incorporates accountancy, auditing, and investigation. Thus, the scope of forensic accounting is extensive and includes activities such as fraud investigations, litigation support, IT forensics, and business valuation (DiGabriele *et al.*, 2020; Hegazy *et al.*, 2017; Kumari Tiwari and Debnath, 2017).

The literature has defined forensics accounting using three different approaches (Botes and Saadeh, 2018). These approaches are classified based on their coverage of the forensic

accounting service. The first approach narrowly covers the legal and adversarial role of forensic accounting (Abdul-Baki, 2019). In contrast, the second approach incorporates all the forensic services that are provided by professional bodies. The final approach is a comprehensive approach, which integrates the investigative and legal roles of forensic accounting (Al Shbeil *et al.*, 2023; Ismail *et al.*, 2022). Thus, forensic accounting can be defined in several ways. For example Rehman and Hashim (2020) emphasize the fraud detection role of forensic accounting, limiting forensic accounting contributions to this area of practice. However, all definitions highlight the integration of accounting, auditing, and investigative skills in the examination and analysis of financial information for use in a legal context. We suggest that forensic accounting should be defined as a profession that deals with fraud investigation, business valuation, litigation support, and IT forensics.

Forensic accounting is a multidisciplinary field (Alshurafat *et al.*, 2021b; Botes and Saadeh, 2018; DiGabriele and Huber, 2015; Hegazy *et al.*, 2017). The multidisciplinary nature of forensic accounting allows practitioners to specialize in one category of forensic accounting services, as it is not generally feasible for a practitioner to specialize in all forensic accounting services. In addition, the absence of highly qualified practitioners is an ongoing challenge in the field (Alshurafat *et al.*, 2021b; Fleming *et al.*, 2008).

Forensic accountants provide services in four main categories (Kaur *et al.*, 2023; Pham and Vu, 2024; Street and Wilck, 2023). Litigation support services are the most commonly provided services by forensic accounting firms (Alhusban *et al.*, 2020; Alshurafat *et al.*, 2019; Taminiau *et al.*, 2019). Forensic accountants are expected to possess adversarial and legal knowledge as well as competencies that allow them to provide the required litigation support in judicial proceedings and the administration of the dispute resolutions (Abdul-Baki, 2019). Van Akkeren and Tarr (2021) used an instructional case to illustrate how a forensic accountant could provide different litigation support services inside a court.

The second category is fraud investigations, which distinguishes the forensic accounting profession. As stated by Rehman and Hashim (2020, p. 217) “auditors overlooked the role of fraud detection”. Thus, fraud prevention, detection and response is a key service for forensic accounting practitioners (Honigsberg, 2020; Öztürk and Usul, 2020; Wahyuni-TD *et al.*, 2021; Yang and Lee, 2020). Nunn *et al.* (2006) highlight the role of forensic accounting after the emergence of high-profile corporate scandals. Similarly, Honigsberg (2020) explores the importance of forensic accounting by examining the devastating impact of fraud on firms and individuals and by illustrating how forensic accounting techniques could detect fraud.

Business valuation is considered the third category of forensic accounting services. This involves evaluating businesses and assets, detecting hidden assets, and quantifying loss and damage (Akinbowale *et al.*, 2020; Alshurafat *et al.*, 2023; Cooper and Kawada, 2022; Crain *et al.*, 2019; DiGabriele *et al.*, 2020; DiGabriele and Lohrey, 2016; Ismail *et al.*, 2022; Lehmann, 2015). Nunn *et al.* (2006) reported that the forensic accounting profession contributes to the accounting and auditing profession by providing specialized business valuation services. Durtschi and Rufus (2017) noted that forensic accounting is associated with different business valuation services, including the quantification of economic damage. This is demonstrated in an instructional case which illustrates how to use forensic accounting techniques for valuation of a privately held firm (Jalilvand and Kostolansky (2016)).

The fourth category of forensics accounting service is IT forensic (Akinbowale *et al.*, 2021; Alshurafat *et al.*, 2021a; Odia and Akpata, 2021; Rezaee and Wang, 2022; Seda *et al.*, 2019), where forensic accountants prevent, detect and respond to financial cybercrimes. Nunn *et al.* (2006) attributes the growing demand for forensic accounting services to the increase in cybercrimes linked to the emergence of new technologies. More recently, Rezaee and Wang (2019) indicated that forensic accounting as a profession has benefited greatly from the advancement of technology, particularly in terms of preventing and detecting financial cybercrimes. In addition, Akinbowale *et al.* (2021) concluded that integrating forensic accounting within the internal control systems of banks would promote the prevention of financial cybercrimes.

### *CEO characteristics and auditor selection*

CEO characteristics have been widely examined in accounting and finance studies (Saleh *et al.*, 2020). A wide range of CEO characteristics have been examined including experience (Al-Shubiri, 2010; Desir *et al.*, 2024), education (El Abiad *et al.*, 2024), age (Soepriyanto *et al.*, 2024), gender (Gupta and Mahakud, 2020), tenure (Velte, 2020), political connection (Liu and Jiang, 2020; Ozer, 2023) and duality of positions (Saleh *et al.*, 2020). Characteristics which have been found to influence various economic phenomena include firm financial performance (Liu and Jiang, 2020; Saleh *et al.*, 2020), firm innovation and creativity level (You *et al.*, 2020) and corporate social responsibility (CSR) initiatives (Hussien *et al.*, 2025; Mahran and Elamer, 2024; Velte, 2020).

Research shows that CEO characteristics such as tenure, experience, power, political connections, and professional finance qualifications generally improve firm financial performance, though findings on CEO duality are mixed—some studies report a positive impact, while others find it negative for financial outcomes; additionally, CEO gender and ownership can influence profitability and performance. Researchers have also explored the link between CEO traits and CSR. Velte (2020) found a two-way relationship between the CEO and CSR. Mahran and Elamer (2024) reviewed the literature and found mixed results regarding the relationship between CEO traits and firms' environmental performance.

Auditor selection is a complex process influenced by many factors, including audit committee traits—such as composition, expertise, and dynamics—which play a significant role in shaping auditor appointments (Bedford *et al.*, 2023; Habib *et al.*, 2019). Additionally, CEO characteristics and leadership style, such as vision and risk appetite, can drive the choice of auditors with specialized skills; for instance, firms led by older CEOs are more likely to hire higher-quality auditors (Ferdous *et al.*, 2024). Overall, both audit committee composition and CEO attributes, alongside organizational needs and risk perceptions, should be carefully considered when selecting auditors.

### *Theoretical framework*

Researchers have explored how CEO characteristics shape business outcomes using various theories. For instance, Saleh *et al.* (2020) drew on agency theory, which focuses on aligning the interests of agents and principals through oversight, and resource dependence theory, which highlights the board's role in providing and securing crucial resources. Both theories help explain why internal mechanisms, such as boards, are essential for firm performance and guide this research on how CEO traits influence decisions, including hiring auditors with forensic accounting skills. Adding a behavioral perspective, scholars like Velte (2020) found that the personalities and values of top managers can really shape a company's non-financial performance. Most research in this area employs the upper echelons theory (Hambrick and Mason, 1984), which posits that the backgrounds and beliefs of CEOs and their teams significantly influence key business decisions (Mahran and Elamer, 2024). This theory will also guide this study in examining how CEO characteristics affect the choice to hire auditors with forensic accounting expertise.

### **Hypotheses development**

#### *CEO age and the decision to hire external auditors with forensic accounting competencies*

Research shows that different aspects of a CEO—like their background, education, age, gender, tenure, political connections, and whether they hold multiple roles—can have a big impact on how companies operate and make decisions (Saleh *et al.*, 2020; Gupta and Mahakud, 2020; Velte, 2020). Among these, a CEO's age stands out as an important factor shaping company strategies and choices (Mahran and Elamer, 2024; Soepriyanto *et al.*, 2024). Older CEOs, who often have longer tenures, tend to bring a wealth of experience and a deeper understanding of the industry's complexities, which can shape how they approach risk and

make decisions (Soepriyanto *et al.*, 2024). According to upper echelons theory, the backgrounds and values of top executives help predict how organizations perform and what choices they make (Hambrick and Mason, 1984; Mahran and Elamer, 2024). In essence, a CEO's personal traits—like age—play a major role in how they see situations, make choices, and steer the company (Shettima and Dzolkarnaini, 2018). Since forensic accountants are so important for uncovering fraud and providing legal support, it makes sense that older, more experienced, and typically more risk-averse CEOs would see value in hiring auditors with forensic accounting skills to better protect their companies. Based on this, we propose the following hypothesis:

- H1. CEO age significantly and positively impacts the decision to hire external auditors with forensic accounting competencies.

#### *CEO education and the decision to hire external auditors with forensic accounting competencies*

Research shows that a CEO's education can really shape the direction and decisions of a company (Desir *et al.*, 2024; Liu and Jiang, 2020; Ozer, 2023). Leaders with strong educational backgrounds tend to have the knowledge and analytical skills to tackle complex challenges, which influences how they make important decisions (El Abiad *et al.*, 2024). According to upper echelons theory, a CEO's educational experience can shape how they see the world, the choices they make, and ultimately how the company performs (Saiyed *et al.*, 2023). For example, highly educated CEOs are more likely to draw on their advanced skills, especially when it comes to preventing fraud (Ting, 2021). They often recognize how important forensic accounting is for reducing fraud risks and keeping financial oversight strong. Because of this, they might be more open to hiring outside auditors with forensic accounting expertise, since they understand the serious legal and financial impacts that fraud and financial misconduct can have. This fits with resource dependence theory, which suggests that organizations seek out resources and expertise to deal with outside uncertainties and dependencies (Taha *et al.*, 2024). Since forensic accountants play such a crucial role in spotting fraud and supporting litigation, it makes sense that highly educated CEOs would want to hire auditors with those skills to protect their company's finances. Based on these insights, we propose the following hypothesis:

- H2. CEO education significantly and positively impacts the decision to hire external auditors with forensic accounting competencies.

#### *CEO duality and the decision to hire external auditors with forensic accounting competencies*

When one person serves as both CEO and board chair—a situation known as CEO duality—it can have a notable impact on a company's strategies and decisions (Ozer, 2023). By combining these roles, authority becomes more centralized and decisions can be made more quickly, which shapes how strategic choices are approached (Saleh *et al.*, 2020). Research has shown a clear connection between CEO duality and the selection of auditors (Alfraih, 2017). According to upper echelons theory, the way CEOs are positioned in the company's governance, such as through duality, deeply affects how they perceive situations, make decisions, and take action, all of which influence the company's direction and performance (Saiyed *et al.*, 2023). CEOs who hold both positions tend to exert more control over important decisions, including how they tackle fraud prevention (Alqatamin *et al.*, 2017; Ting, 2021). These leaders may especially appreciate the value of forensic accounting in reducing fraud risks and ensuring the company's finances are well-managed (El Abiad *et al.*, 2024; Mahran and Elamer, 2024). With their authority, they are often better positioned to choose external auditors who specialize in forensic accounting, recognizing how crucial these skills are in protecting the company from

legal and financial trouble. This perspective fits with resource dependence theory, which explains that organizations look for resources and expertise to help them handle outside challenges and risks (Saleh *et al.*, 2020). Because forensic accountants play such a vital part in finding fraud and supporting legal cases, CEOs with dual roles—who can make decisions swiftly and with authority—are likely to put hiring auditors with forensic backgrounds at the top of their list to safeguard the company's finances. Based on this, we propose the following hypothesis:

- H3. CEO duality significantly and positively impacts the decision to hire external auditors with forensic accounting competencies.

*CEO compensation and the decision to hire external auditors with forensic accounting competencies*

CEO compensation—which covers salary, bonuses, stock options, and other financial incentives—plays a big part in shaping how companies are run and what strategies they choose (Alfawareh *et al.*, 2025). When CEOs receive higher compensation packages, it usually comes with more responsibility and accountability, which affects how they manage risks and make important decisions (Edmans *et al.*, 2023). The upper echelons theory explains that the financial rewards CEOs receive have a strong influence on how they see things, what choices they make, and how they act, ultimately shaping the direction and success of their companies (Saiyed *et al.*, 2023; Ting, 2021). With this in mind, well-paid CEOs are often more motivated to protect their company's financial health and integrity, especially when it comes to managing risks and preventing fraud (Recendes *et al.*, 2024). They are also likely to see the value in forensic accounting for reducing fraud risks and ensuring careful oversight of finances (Saiyed *et al.*, 2023). Because their own pay and job security are directly tied to their company's stability and reputation, these CEOs may be more willing to bring in external auditors who have forensic accounting expertise. This fits with resource dependence theory, which points out that companies seek out specialized knowledge to handle outside challenges (Saleh *et al.*, 2020). So, CEOs who are well compensated—and therefore feel greater responsibility and accountability—are likely to put a priority on hiring auditors with forensic accounting skills to reinforce their organization's financial security. Therefore, we hypothesize the following:

- H4. CEO compensation significantly and positively impacts the decision to hire external auditors with forensic accounting competencies.

## Method

### *Study sample*

The study conducted a survey of 71 companies listed on the Amman Stock Exchange (ASE). These companies, which are in the same industry and regulated by the same laws, provided a valid context for study. A dataset was compiled by the researchers using financial information extracted from the companies' official annual reports for six fiscal years, from 2017 to 2022. As there was no publicly available information on the decision to appoint an external auditor with forensic accounting competencies, data collection was done manually by contacting each company. Several steps were employed in the selection process to ensure reliability of the data. 82 companies were initially considered but later excluded from the sample due to various reasons, including incomplete financial data, inconsistencies in reporting, lack of response to data collection inquiries, or failure to meet the study's inclusion criteria. Additionally, companies from the financial sector were deliberately excluded due to their distinct regulatory framework, which differs significantly from that governing industrial and service firms.

### Measures of the study variables

*Dependent variable.* An external auditor's forensic accounting expertise is quantified as a value of 1 if the external auditor has identifiable skills and experience in that domain or 0 if not. To obtain a precise evaluation of this factor, we executed a series of procedures following (Alkhalailah *et al.*, 2024). This study first pinpointed the external auditor's identity by scrutinizing the auditor report in the company's annual report. Second, we performed an extensive investigation on the identified auditor's website to confirm their proficiency in forensic accounting. Finally, in instances where a website was not accessible, we reached out to the auditor via telephone to evaluate their proficiency in this area.

*Independent variables.* This research has integrated a number of elements to capture the attributes of the CEO, including; CEO duality denoted by a binary variable with a value of 1 if the CEO also holds the position of chairperson, and 0 otherwise; CEO educational background indicated by a value of 1 if the CEO possesses a Master's degree or higher, and 0 otherwise; CEO remuneration represented by the natural logarithm of the total CEO compensation; CEO age calculated as the natural logarithm of (Financial reporting year – CEO's year of birth).

*Control variables.* Based on prior studies, this paper includes several important control variables such as age of the company, the size of operations and revenues, financial performance, expansion strategies, and the market-to-book ratio. This research also takes into account the effects of the COVID-19 crisis on these factors and how they have affected the performance and resilience of the firms under analysis. This approach was motivated by insights from previous empirical studies and theoretical frameworks in the field of corporate governance and financial performance. These variables are widely recognized in the literature as having a potential influence on firm outcomes, and controlling for them helps isolate the specific impact of the variables under investigation. The COVID-19 crisis is included as a contextual factor since it represents a global exogenous shock that affected firms across sectors and geographies in unprecedented ways.

### Research model

This study employs the Logit and Probit multiple regression analysis models to allow the research to determine the existence of relationships between various variables and the extent of these relationships. Since the dependent variable is a binary variable, these statistical approaches provide a robust and accurate analysis which improves the validity and reliability of the study. Before conducting the analysis, it is necessary to verify several assumptions, including linearity, normality, non-multicollinearity, and homoscedasticity. To assess the linearity and normality of the data, a Kernel density histogram was employed. The resulting residual values exhibited a bell-shaped curve, suggesting that these assumptions were upheld. Heteroskedasticity was addressed by applying a robust standard error method. Sector dummies were included in the model to control for sector differences and take into consideration factors that may affect the decision to hire an external auditor with forensic accounting expertise. This approach ensures that all the variables are analyzed in detail and the interconnections between them are captured accurately. The study seeks to account for the dynamic nature of the data by including year dummies in the model.

### Model

$$\begin{aligned} EXFA_{it} = & \beta_0 + \beta_1 CEOdu_{it} + \beta_2 CEOedu_{it} + \beta_3 CEOcom_{it} + \beta_4 CEOage_{it} + \beta_5 Firmsize_{it} \\ & + \beta_6 ROI + \beta_7 Assetgrowth_{it} + \beta_8 COVID19 + \beta_9 MarketBookValue_{it} + Year \\ & + Sector + \varepsilon_{it} \end{aligned}$$

**Results and discussion**

*Descriptive analysis*

Table 1 provides a summary of the descriptive statistics of the variables employed in the study. For each variable, the number of observations (Obs.), mean, standard deviation (Std. Dev.), minimum value, and maximum value are provided. The variable EXFA is the dependent variable that measures whether the firm has an external auditor with forensic accounting competencies, and has a mean value of 0.84 undefined. This figure suggests that a large number of the firms in the sample are categorized as having an external auditor with forensic accounting competences. The standard deviation of 0.36, with the minimum and maximum values of 0 and 1 respectively shows the distribution of binary data. This binary character indicates that there are only two types of firms: EXFA-firms and non-EXFA-firms.

With regard to the independent variables, CEOdu is a dummy variable that equals one if the CEO holds dual positions. The mean value of 0.04 indicates that a limited number of the CEOs hold other positions concurrently. The standard deviation of 0.196 shows some variation, however, the mean is close to zero and as this variable can only have values between 0 and 1, it can be inferred that most CEOs do not have a dual position. CEOedu represents the education level of the CEO. The mean value of 0.299 means that about 30% of the CEOs have an advanced education qualification. The standard deviation of 0.457, together with the binary range of 0 and 1, shows there is variation in the level of education among the CEOs. From this statistic, it can be inferred that although many CEOs have higher education, many do not. CEOcom represents CEOs' compensation, and the mean compensation is equal to 10.637. This relatively high mean suggests that CEOs in the sample are well remunerated. However, the standard deviation of 2.904 indicates that there is a large disparity in the remuneration packages of CEOs. The range from 0 to 13.259 depicts the volatility of this factor indicating some CEOs are not remunerated while others are highly compensated. CEOage shows the age of the CEO, which is on average 3.044 as measured in natural logarithm. The standard deviation of 10.89 shows that there is significant variation in the age of CEOs. This broad age distribution implies that some CEOs are young while others are considerably older, which may affect their management approaches and business strategies.

Firmsize is the size of the firm and it is measured on the logarithmic scale. The mean size of 17.345, with a standard deviation of 1.582, suggests that the firms in the sample differ in size, but they are relatively large on average. Firmage represents the age of the firm on a logarithmic scale and indicates the mean age of the firm is 3.04. The standard deviation of 0.531 shows that there is some variation in the ages of the firms. The range from 1.386 to 3.807 indicates that while some firms are comparatively young, others have been in operation longer, which may affect their stability, reputation, and business strategies. The mean value of ROI, or Return on

**Table 1.** Descriptive statistics

Variable	Obs.	Mean	Std. dev.	Min	Max
EXFA	426	0.847	0.36	0	1
CEOdu	426	0.04	0.196	0	1
CEOedu	426	0.299	0.457	0	1
CEOcom	426	10.637	2.904	0	13.259
CEOage	426	56.739	10.89	27	87
Firmsize	426	17.345	1.582	12.913	21.452
Firmage	426	3.044	0.531	1.386	3.807
ROI	425	0.019	0.088	-0.678	0.614
Assetgrowth	426	0.019	0.123	-0.459	0.727
COVID19	426	0.333	0.472	0	1
MarketBookValue	426	1.416	5.115	0.014	104.784

**Source(s):** The authors

Investment, is equal to 0.019, which shows that the average return of the firms is moderate. The standard deviation of 0.088 indicates that there is a high volatility of ROI with values ranging from  $-0.678$  to  $0.614$ . This wide range suggest that while some firms incur losses, other firms are able to earn high levels of returns. It is also important to point out that there is one missing observation for ROI, which brings the total number of observations to 425.

Assetgrowth shows the increase in assets, with a mean of 0.019. The standard deviation of 0.123 shows that there is significant fluctuation in the growth of the firms' assets. The range from  $-0.459$  to  $0.727$  shows that while some firms' assets decrease, others' assets increase significantly. Such fluctuations in the asset growth might be due to factors like market conditions, strategic investments, and efficiency in management. COVID19 indicates whether the data is collected during the COVID-19 period or not. The mean value of 0.333 shows that about 33% of the observations related to the pandemic period. The standard deviation of 0.472, with the binary range of 0–1, indicates that the sample contains observations from both before and during the pandemic period. This variable is important in establishing the effect of COVID-19 on the firms and their respective outcomes. MarketBookValue is the market-to-book value ratio with a mean of 1.416. This mean indicates that on average the market values of the firms is slightly higher than the book values. However, the standard deviation of 5.115 shows that this ratio is quite volatile. The range from 0.014 to 104.784 shows that there is a very high variance, some firms are almost equal to their book value while others are valued considerably higher. These variations can be explained by differences in the performance of the firms, investors' sentiment, and the market environment.

Table 2 shows the coefficient of correlation between the variables used in the study. The values in of the matrix are the coefficients of the correlation between two variables, which show the strength and direction of the linear relationship. Correlation values are always between  $-1$  and  $1$ ;  $-1$  means a perfect negative correlation,  $1$  means a perfect positive correlation, and  $0$  means no correlation. Multicollinearity is a situation where two or more independent variables in a regression model are highly correlated so that one can be predicted from the others with a reasonable degree of accuracy. When the independent variables are highly correlated, the variances of the parameter estimates are likely to be inflated and the model becomes hard to interpret. In order to identify multicollinearity, it is necessary to check correlation coefficients that are greater than 0.8 or below  $-0.8$ , VIF greater than 10, and condition index greater than 30. In this context, we focus on the correlation matrix to check for multicollinearity.

## Empirical results and discussion

This research examines the association between the decision to appoint an external auditor with forensic accounting competences (EXFA) and CEO characteristics. The relationships are tested using Logit and Probit regression models and the results are presented in Table 3 below. The results indicate that several CEO attributes have an impact on the choice of an external auditor with forensic accounting skills. However, the results for CEO duality (CEOdu) do not support hypothesis three. This negative and insignificant correlation is  $-0.465$  in the Logit model and  $-0.347$  in the Probit model, indicating that CEOs with dual posts are slightly less likely to appoint auditors with forensic accounting competencies, though the difference is not statistically significant. This could mean that combined positions do not exercise sufficient power to influence the search for external auditors with forensic expertise. This result is inconsistent with previous studies which predict a positive influence of CEO duality on firm strategic choices (Ozer, 2023).

CEO education (CEOedu) is positively and significantly related to the decision to appoint such an auditor in both the Logit and Probit models. In particular, the coefficients (1.535 for Logit and 0.744 for Probit) suggest that CEOs with higher education levels are more likely to consider appointing auditors with forensic accounting skills. This result supports hypothesis two and indicates that the education level of CEOs may lead to a better understanding of the

**Table 2.** Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) <i>EXFA</i>	1.000										
(2) CEOdu	-0.047	1.000									
(3) CEOedu	0.191	0.034	1.000								
(4) CEOcom	0.352	-0.077	0.179	1.000							
(5) CEOage	0.218	0.141	-0.097	-0.018	1.000						
(6) Firmsize	0.204	-0.169	-0.006	0.253	0.152	1.000					
(7) Firmage	0.114	0.063	0.084	0.200	0.061	0.273	1.000				
(8) ROI	0.158	-0.026	-0.033	0.309	0.127	0.274	0.086	1.000			
(9) Assetgrowth	0.098	-0.064	-0.010	0.236	0.007	0.211	0.034	0.443	1.000		
(10) COVID19	0.008	-0.042	0.012	-0.013	-0.028	-0.016	0.076	-0.117	-0.098	1.000	
(11) MarketBookValue	-0.002	0.008	0.069	-0.031	-0.022	0.025	-0.003	-0.034	0.023	0.071	1.000

**Source(s):** The authors

**Table 3.** The relationship between the decision to appoint external auditor with forensic accounting competences and CEO characteristics

VARIABLES	Logit <i>EXFA</i>	Probit <i>EXFA</i>
CEOdu	-0.465 [-0.53]	-0.347 [-0.74]
CEOedu	1.535*** [3.29]	0.744*** [3.31]
CEOcom	0.192*** [4.30]	0.119*** [4.55]
CEOage	0.0733*** [4.58]	0.0408*** [4.59]
Firmsize	0.187* [1.68]	0.0983 [1.64]
Firmage	-0.0391 [-0.13]	-0.000710 [-0.00]
ROI	0.610 [0.30]	0.214 [0.20]
Assetgrowth	0.151 [0.11]	0.123 [0.16]
COVID19	0.147 [0.44]	0.0968 [0.53]
MarketBookValue	0.00225 [0.04]	0.00266 [0.10]
Constant	-7.632*** [-3.75]	-4.275*** [-3.77]
Observations	425	425

**Source(s):** The authors

value of forensic accounting in improving financial reporting and identifying fraud. Upper echelons theory supports the notion that the CEO's educational background influences organizational strategies and performance. CEOs with higher education are more likely to apply their educational knowledge and critical thinking skills in their decisions. CEOs with higher educational qualifications are more likely to appreciate the role of forensic accounting in managing fraud risks. According to resource dependence theory they may be more inclined to engage external auditors with expertise in forensic accounting as this will bolster their organization's protection against fraud. This result is in line with the previous studies (Desir *et al.*, 2024; Liu and Jiang, 2020; Ozer, 2023).

CEO compensation (CEOcom) has a positive and significant association with the appointment decision. The coefficients (0.192 for Logit and 0.119 for Probit) indicate that higher compensated CEOs are more likely to engage external auditors with forensic accounting skills. This could be because well paid CEOs are more aware of the consequences of financial statement fraud and are willing to pay for the extra assurance provided by forensic accounting expertise. Upper echelons theory suggests that CEO decision-making and organizational performance are related to their response to large financial rewards (Saiyed *et al.*, 2023; Ting, 2021). Accordingly, highly paid CEOs take care to maintain their organization's financial stability and protect it from risks and frauds (Recendes *et al.*, 2024). CEOs who earn more money recognize the importance of forensic accounting to fight fraud and strengthen financial protection (Saiyed *et al.*, 2023). They bring in forensic accounting experts from outside because the firm's financial performance directly impacts their salary and job security. Organizations seek external resources and expertise to handle environmental uncertainties according to the resource dependence theory (Saleh *et al.*, 2020). Well-paid CEOs who feel more responsible for their organization's success will hire forensic accountants

because these auditors help prevent fraud and support legal cases. This result is in line with the previous studies ([Recendes et al., 2024](#)).

In summary, the results confirm that CEO education helps leaders understand the benefits of hiring external auditors with forensic accounting skills. CEOs with this knowledge recognize that forensic accounting expertise protects a company's financial health. Older CEOs recognize the role of forensic accounting in preventing fraud and maintaining effective financial controls. They tend to hire auditors with forensic expertise because these professionals can minimize opportunities for financial fraud. This finding is consistent with resource dependence theory which suggests firms may hire experts to handle external risks and dependencies ([Saleh et al. \(2020\)](#)).

The size of the firm (Firmsize) has a positive but significant effect in the Logit model with a coefficient of 0.187 while in the Probit model the coefficient is 0.0983 and is insignificant. This implies that large firms are more likely to engage external auditors with forensic accounting skills, perhaps because of the increased risk and complexity of their operations. However, since the coefficient was not statistically significant in the Probit model, this result should be interpreted cautiously. The model's other variables including Firmage, ROI, Assetgrowth, COVID19, and MarketBookValue are not significantly related to the decision to appoint an external auditor with forensic accounting competences. The coefficients for these variables are small and statistically insignificant which suggests that these factors may not be very influential in the appointment decision.

#### *Robustness test*

*Alternative analysis.* In addition to the Logit and Probit models, we employed a Linear Probability Model (LPM) as a robustness check. This model regresses the binary dependent variable (EXFA) on the same set of explanatory variables using OLS. The LPM allows for straightforward interpretation of coefficients and helps verify whether the direction and significance of our key findings are consistent across different estimation techniques.

*Endogeneity issue.* We re-estimated our model using a lagged independent variable specification, where all CEO-related independent variables were lagged by one period. This method helps mitigate reverse causality concerns by ensuring that the explanatory variables precede the outcome variable (EXFA) in time. The updated model confirms the consistency of our main results — the signs and statistical significance of key variables (CEO education, compensation, and age) remain robust. This suggests that the potential for reverse causality does not materially alter the main findings. Please refer to [Appendix 1](#).

#### **Conclusion**

Forensic accounting research has evolved in recent years ([Burnett et al., 2024](#); [Imjai et al., 2024](#); [Pham and Vu, 2024](#)). Much of the prior research focused on forensic accounting education ([Alshurafat et al., 2024](#); [Alzahrane, 2024](#)), forensic accounting profession ([Almashaqbeh et al., 2023](#); [Kaur et al., 2023](#); [Street and Wilck, 2023](#)), and forensic accounting's role in detecting fraud ([Akinbowale et al., 2023](#); [Burnett et al., 2024](#)). This paper examined whether chief executive officer (CEO) characteristics are linked with corporate decisions to hire external auditors with forensic accounting skills. This study presents findings on the relationship between CEO characteristics and the decision to appoint external auditors with forensic accounting competencies. The findings, derived from a rigorous analysis involving Logit and Probit regression models, provide valuable insights into this complex relationship.

The majority of results in this study are consistent with previous research ([Desir et al., 2024](#); [Liu and Jiang, 2020](#); [Ozer, 2023](#)), showing that CEO education significantly influences whether companies choose external auditors with forensic accounting expertise. Business leaders who hold degrees beyond the Master's level are more likely to recognize the value of forensic

accounting in safeguarding company finances, as advanced educational programs equip them with tools to identify and address financial threats. The study also finds that companies led by higher-paid CEOs tend to invest more in robust auditing systems and hire forensic accounting specialists, likely because these CEOs better understand the complexities of their organizations' finances and are motivated to protect assets and reputation. Additionally, older CEOs, drawing on their extensive industry experience, are more inclined to employ forensic accounting experts, as they are more aware of sector-specific risks and problems. Interestingly, CEO duality—where the CEO also chairs the board—doesn't appear to influence the decision to hire external auditors with forensic accounting skills, indicating that governance structure may not play a significant role in this context. To ensure a thorough analysis, the research also examined firm-specific factors like company size, age, ROI, asset growth, market-to-book ratio, and the impact of the COVID-19 crisis, recognizing that these variables might also shape a company's decision to engage forensic accounting experts.

Overall, these findings highlight the significant role that a CEO's educational background, compensation, and age play in the decision to engage auditors with forensic accounting expertise. This insight is crucial for shaping corporate governance and financial oversight policies, and suggests that organizations should consider both the academic and practical experience of their CEOs when developing auditing strategies to help prevent fraud. With recent financial scandals and ongoing economic uncertainty, the demand for forensic accounting skills is only expected to increase, making it even more important for companies to align leadership qualities with the goals of financial integrity and transparency. The study also suggests that regulatory bodies and policymakers might want to consider CEO characteristics when creating policies aimed at boosting financial transparency and corporate accountability. By encouraging the appointment of leaders with higher educational qualifications and relevant experience, organizations could be more likely to adopt forensic auditing practices, which would improve fraud detection and strengthen financial integrity. Additionally, updating corporate governance codes to incentivize companies to match executive leadership profiles with effective risk management and anti-fraud strategies could further enhance these efforts. It's worth noting that this study focused solely on companies listed on the Amman Stock Exchange, which is a limitation. Future research could build on these findings by using larger or different samples, trying out new research designs, considering varied company characteristics and control variables, or broadening the geographic scope. Longitudinal studies, qualitative methods, and a closer look at additional CEO traits or specific company contexts might also yield valuable new insights.

### Supplementary material

The supplementary material for this article can be found online.

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