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Corporate Sustainability and Firm Performance: The Moderating Role of CEO Education and Tenure

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Abstract: The aim of this research is to investigate the impact of corporate sustainability on a firm's financial performance. It particularly investigates the effectiveness of CEO characteristics as a moderator on corporate social responsibility (CSR)–firm financial performance linkages. This study is unique since it sheds new insight on how a CEO's attributes may influence the relationship between CSR and financial performance. The evidence so far is sparse, since previous studies have investigated the direct effects of CEO or CSR on corporate performance. We look at a sample of 34 Saudi publicly traded companies from 2015 to 2020. Data on financial, accounting, and sustainability variables are collected from the Bloomberg database and the annual reports of the selected companies. Findings reveal that firms engaged in corporate social responsibility practices tend to have better financial performance. More importantly, it is found that in the moderation relationship of firm financial performance with corporate sustainability, CEO education and tenure act as positive moderators. In particular, results indicate that CEOs having an engineering- or a science-related degree positively affect the relationship between CSR and business performance. The relationship is further enhanced when the CEO holds an MBA. Finally, longer tenured CEOs play a positively moderating role in the association between firm performance and CSR.

Keywords: corporate social responsibility; sustainability; firm performance; CEO education; CEO tenure

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1. Introduction

"Sustainability begins with a principles-based approach to doing business" (United Nations Global Compact, 2022). The concept of sustainable development becomes the focus of international policymaking in many countries. Sustainable development is defined as development that satisfies current demands without jeopardizing future generations' ability to meet their own. Sustainability is frequently thought as a long-term goal or vision, such as a sustainable enterprise or a sustainable world, whereas sustainable development encompasses various methods and approaches that aim to achieve development objectives including a well-structured governance system, technological advancements, the use of recycled materials, and renewable resources (UNESCO, 2020). Therefore, sustainability is a broad notion that encompasses environmental, social, and economic actions and outcomes [1].

Investors, financial experts, and regulators have expressed worries about the traditional management team's capacity to integrate sustainability into the firm's strategy. The need for nonfinancial reports has grown as more attention is paid to sustainability and particularly social, environmental, and economic responsibilities dimensions [2]. Boards of directors should be responsible for striking a balance between financial and nonfinancial company objectives, acting in the best interests of shareholders and stakeholders [3].

The term sustainability has long been used interchangeably with corporate social responsibility (CSR). The concept of CSR has received a great amount of attention in recent years, both in academic study and in the business world [4–8]. CSR is being used by businesses to gain a competitive edge and form a sustainable relationship with their stakeholders. In this regard, the triple bottom line (TBL) theory is a widely used framework for conceptualizing the multiple dimensions of sustainability [9]. It refers to the combined search of economic progress, social equity, and environmental protection. The essence of business sustainability, according to TBL logic, is to fulfill financial, social, and environmental objectives in an interconnected and mutually supportive manner. CSR is well-known in industrialized nations, and its execution is an essential activity for maintaining the environment for long-term development, which has societal, environmental, stakeholders, and businesses benefits. CSR is gradually gaining popularity in developing nations, and yet its application in the workplace is not voluntary and its main advantages are underestimated. In this regard, a vast amount of literature has focused on how corporate sustainability may affect business performance; however, studies on the relationship between these constructs are not conclusive. Indeed, some scholars advocate a positive effect of sustainability on business performance [10–13], whereas other researchers stipulate that the relationship is rather negative or nonsignificant [12–17].

Proponents of the positive effects of corporate sustainability support that CSR enhances company value and image as well as improves the firm's brand positions, reputation, and image, which in turn improves financial performance in the long run [18]. It is often assumed that proper application of economic, social, and governance (ESG) standards implies higher returns and financial performance [19]. The key point of this argument is that participation in sustainability activities strengthens a company's ethnic identity, resulting in higher stakeholder satisfaction and improved financial performance [20]. Another part of the literature claims a negative relationship between CSR and financial performance. First, businesses have only one social responsibility: to manage their resources and engage in activities that increase profits. Companies that engage in sustainability efforts suffer higher costs, making it more difficult for them to show favorable financial returns [21]. The management opportunism hypothesis proposed by [22] stipulates that CSR has a negative impact on financial performance. To be more specific, when financial results show a good trend, managers minimize social spending in order to increase their personal wealth. They may, on the other hand, try to make up for poor financial outcomes by participating in costly social projects.

Another branch of the literature has been interested in examining the effects of chief executive officer (CEO) characteristics on corporate responsibility. Previous researchers have found that the CEO of a company can have a considerable impact on CSR reporting; consequently, the CEO's incentives and qualities can explain disparities in CSR reporting among companies [23–28]. According to the upper echelons theory, certain observable personal features might hinder or initiate decision making, such as the decision to participate in CSR. CEOs are important members of a company's leadership team, and they have the power to direct and make choices that affect the company's CSR efforts. Accordingly, CEO qualities have clearly been identified as one of the many aspects that drive CSR.

Evidence so far is sparse, since previous studies have investigated either the direct effect of CEO on firm performance [29,30] or the effects of CSR on corporate performance. To our humble knowledge, there are no studies to date that have investigated the interaction effect of CEO characteristics on the relationship between CSR and business profitability. As a result, the aim of this paper is to fill this gap in the literature by shedding insight on how certain CEO's attributes may influence the relationship between CSR and firm financial performance. In light of this, our study aims to contribute to the existing state of research on corporate sustainability and firm performance by filling a "significant research vacuum" relating to CEO characteristics, and particularly the impact of CEO education and CEO tenure on the relationship between CSR and organization profitability. In particular, this study aims to investigate whether CEOs' educational backgrounds and tenure play roles as moderator variables in the described relationship. We particularly evaluate if and how top executive's university degrees (business/economics, engineering, related science) and the length of a CEO's employment in a company (tenure) influence the effect of CSR on corporate performance.

This study uses a sample of Saudi listed firms. Several reasons explain our choice to investigate the Saudi market. First, Saudi Arabia is a fascinating and important market to investigate since it accounts for a fourth of the Arab world's GDP. The Saudi Exchange is one of the world's most liquid stock exchanges, ranking among the top ten largest by market capitalization. Second, in the Middle East and North Africa region, Saudi Arabia came in second for adopting and integrating CSR principles (regional CSR survey report, 2021). Finally, Saudi Arabia is among the countries that largely support the sustainability goals. In fact, according to the Saudi corporate governance code, all publicly traded Saudi companies must provide nonfinancial reports on their governance, environmental, and social policies.

This paper contributes to the literature on corporate sustainability and business performance in various ways. First, this is one of the most comprehensive studies on the interaction effects of CEO characteristics and corporate sustainability on business performance. Second, it builds on past research by looking at this connection in the context of a growing country such as Saudi Arabia. Finally, it gives academics a starting point for additional research into concerns of sustainability in developing markets.

The remainder of this work is written as follows: literature on corporate sustainability, executives' characteristics and business performance is reviewed in Section 2. Section 3 describes the empirical methodology. The empirical findings are discussed in Section 4. Section 5 concludes the paper and outlines the research's policies and implications.

2. Literature Review

2.1. Theoretical Background

Positive theories regard sustainability reporting as a critical instrument for expressing the results of a company's social responsibility policy. Positive theories, which rely mostly on empirical inductive approaches, enable academics to recognize and analyze significant variables in the evolution of nonfinancial reporting. According to these theories, sustainability nonfinancial reporting includes many aspects. First, sustainability is regarded as a response to stakeholders' frequent involvement in business activities, particularly their interest in social corporate responsibility. Second, it reflects mechanism that presents the company's long-term sustainability performance to numerous stakeholders. It represents a way for justifying the company's duty to have an environmental impact. Sustainability is also regarded as a proof of the company's actions recognizing a new institutional feature associated to its commitment to sustainable development, as well as the necessity to present its economic, environmental, and social performance. Finally, it is viewed as an "information signal" delivered by management to corporate statement receivers in order to eliminate knowledge asymmetry between stakeholders.

The literature identifies various individual positive theories in sustainability studies, including the legitimacy theory particularly [31,32], the stakeholder theory [33], the institutional theory [34], and the signaling theory [35]. The legitimacy theory claims that businesses operate under a "social contract" aimed at gaining and maintaining social acceptance. The method aids in comprehending the requirement for entities to generate sustainability reporting that tries to justify the legality of their corporate activity. The legitimacy approach discusses why sustainability reporting has evolved into a "moral" need.

The legitimacy theory is intimately linked to the stakeholder theory, which is particularly useful for justifying and analyzing the determinants of nonfinancial reporting's sustainability. The stakeholder theory describes how a corporation interacts with its external and internal stakeholders. It explains why stakeholders' information needs necessitate a multidimensional display of economic, social, and environmental potential via sustainability reporting. These consequences might be viewed in three ways according to the stakeholder theory: first, the descriptive element, which evaluates a company's reporting behavior while taking into account the company's and its stakeholders', competing interests. Second, the instrumental aspect, which focuses on the achievement of organizational goals and the presentation of those goals through reporting. Third, the normative aspect aids in assessing conformity with standards and rules based on moral principles, considering that stakeholders have the authority to influence the business and offer their expectations that are of substantial value to the company. It also offers suggestions and rules, bringing the stakeholder theory closer to the normative accounting theory.

The institutional theory studies the institutionalization of social aspects, which can be used to expand on the understanding of the interaction between a business entity and its stakeholders. Organizations are impacted by their institutional environments, which are made up of socially constructed norms and rationales, according to the institutional theory. Organizational behavior and activity are guided by these laws. As a result, the theory creates awareness of a new institutional space, evoking the need to refer to the economic, environmental, and social components in socially responsible businesses. Furthermore, nonfinancial reporting reflects the requirement to eliminate information asymmetry between internal and external stakeholders (mostly managers). The signaling theory's central premise is the creation of an "information bridge" between stakeholders. The theory contributes to a better understanding of the evolution of nonfinancial reporting as a means of assuaging worries about managers misusing their information advantage. Managerial "information signals" should be beneficial to all participants in the socially responsible firm model. The extent of sustainability reporting is explained by this fundamental assumption.

Finally, these theories will serve as a theoretical background to understand the literature on CSR and business performance [36]. In particular, the described theories argue that adopting social–environmental practices allows companies to save production costs by reducing environmental risks, while also improving their relationships with key stakeholders. This will contribute to achieve competitive advantages and thus improves corporate financial performance in the long run.

2.2. Corporate Sustainability and Firm Performance

Literature on the relationship between corporate sustainability and firm performance is not conclusive. Indeed, some scholars advocate a positive effect of CSR on business performance, whereas other researchers stipulate that the relationship is rather negative or neutral. Proponents of the positive effects of corporate sustainability advocate that CSR enhances company value and image, which in turn improves financial performance in the long run. Indeed, social responsibility assists firms in improving their brand position, reputation, and image [37,38]. Furthermore, it boosts brand image and company reputation, raises sales, builds employee dedication and loyalty, increases productivity, improves quality, and provides additional benefits [18]. It is argued that (ESG) initiatives affect a company's prospects by boosting business value [39]. Indeed, implementing sustainability efforts has been shown to improve operating performance, financial market benefits, and risk mitigation [40]. As a result, it is often assumed that proper application of (ESG) standards implies higher returns and financial performance [19]. The key point of this argument is that participation in sustainability activities strengthens a company's ethnic identity, resulting in higher stakeholder satisfaction and improved financial performance [20].

Other researchers, however, contend that the connections between the two constructs are rather negative. According to [21], businesses have only one social responsibility: to handle their resources and invest in profit-generating activities. Firms that engage in measures to ensure long-term sustainability suffer higher costs, making it more difficult for them to show favorable financial returns. On this basis, it is assumed that leaders are exploiting the company's resources if they invest in projects that are not beneficial to employees and stakeholders. The management opportunism hypothesis proposed by [22] claims that CSR has a negative impact on financial performance. To be more specific, when financial results show a good trend, managers minimize social spending in order to increase their personal wealth. They may, on the other hand, try to make up for poor financial outcomes by participating in costly social projects. Therefore, those who reported a negative association concluded that adopting CSR is harmful to stakeholders since corporations must use their resources exclusively to maximize profits, and otherwise their financial performance will decrease [41,42]. According to many authors, CSR highlights activities such as charity contributions, support for social projects, installation of environmental protective devices, and education initiatives, among others, and this can be seen as a significant cost element on businesses that may divert resources away from more economically profitable uses. Finally, according to [43], business managers who pursue sustainability solutions hinder the goal of maximizing firm value.

Regarding the empirical literature, we observe that empirical findings are highly heterogeneous, and that the outcomes are highly dependent on a variety of factors, including the research method used, various CSR and financial performance measurement strategies, the company's country of origin, and the industry.

Many research studies have discovered a positive link between CSR and corporate performance. For example, using regression analysis, the authors of [13] considered a sample of Indian firms to investigate the impact of CSR on business performance. The authors found that CSR has a favorable impact on accounting measure of performance. Similarly, the authors of [12] investigated the causality effects of corporate environmental performance and corporate financial performance using a meta-analysis of 893 empirical estimates from 142 studies. Findings indicated that firm gains significantly in the long run. Furthermore, the authors of [11] investigated 28 Indian listed commercial banks and discovered that banks with superior CSR practices performed better on both accounting and market performance indicators. These results are also corroborated by [44], who examined the impact of four CSR parameters on the performance of 154 financial firms in 22 countries from 2005 to 2010. According to the findings, banks with better employee relationships and corporate responsibility had better financial performance. In the same vein and based on a sample of 116 big public corporations, the authors of [10] investigated the relationship between CSR activity and financial success in three reporting jurisdictions: Australia, Hong Kong, and the United Kingdom. The authors reported a strong positive association between CSR participation and financial performance, even after controlling for the CSR performance proxy, company size, industry-level fixed effects, and financial risk. Looking at 100 sustainable global enterprises, the authors of [45] found that businesses that place a greater emphasis on sustainable practices have better financial performance, as measured by return on assets (ROA), profit before tax (PBT), and cash flow from operating activities, than those that do not. Finally, the authors of [46], using data from 226 Malaysian companies from all sectors (excluding the banking sector) from 2005 to 2015, confirmed previous findings. The author found a link between debt ratio, equity ratio, total asset turnover, and the firm's size and its ability to grow sustainably.

Other scholars reported negative effect of sustainability on business performance. For instance, the authors of [17] employed a longitudinal study of Maldives' public firms from 2014 to 2018. The results show that there is a significant negative association between CSR and financial performance. The authors of [14] used a two-way fixed-effects model to evaluate data from 40 publicly traded restaurant companies in the United States from 2000 to 2011. The outcomes of this study support the premise that when applied concurrently, internationalization and CSR have a negative synergistic influence on the value performance of a restaurant organization. Furthermore, based on companies registered on the Ghana Stock Exchange and using panel random effect regression, the authors of [15] confirmed the evidence that CSR had a significant negative association with corporate performance. The authors of [47] studied organizations in four tourism industries, and CSR was broken down to five separate categories. The authors observed varying implications of each sustainability dimension on each industry. In particular, the authors found that CSR had adverse effects on short-term profitability in aviation. Finally, the authors of [48] used the Dow Jones Sustainability and global indices in order to examine their relationship in a sample of 110 companies. They concluded that in the near run, CSR and business performance, as measured by profit before tax, were negatively associated. The correlation between performance measures and the sustainability index is likewise negative.

Conversely, other authors reported no significant effect of CSR on corporate performance. For example, the authors of [20] used panel data of the top 100 tech companies listed on the S&P 500 for the period 2017 and 2019. The authors examined the link between corporate financial performance and CSR proxies and found insignificant evidence between CSR and Tobin's Q. Similarly, the findings from [12] indicate environmental performance has no short-term influence on corporate financial performance. The authors of [16] looked at the top 100 US firms' sustainability annual reports, using sustainable disclosure indices that included (ESG) factors. Their findings show that any of the ESG indicators had a significant relationship with firm market and accounting performance. In this regard, sustainable efforts are frequently seen as a loss of company resources that could be put to better use in other initiatives. The authors of [49] examined the energy and banking sectors and found no significant differences between sustainable and nonsustainable organizations when accounting indicators such as (ROA), return on equities (ROE), net margin, and asset turnover are considered. Another study conducted by [50] on a sample of listed firms in the Istanbul Stock Exchange between 2005 and 2007 used various techniques and assessment methods. The authors were unable to find a significant link between CSR and financial profitability. Finally, the authors of [41] reported a neutral link between sustainability and corporate financial success. In particular, the authors reported that establishing a CSR committee does not guarantee that a company will be more successful.

Based on the above literature review, this study predicts the following hypothesis:

H1: *CSR positively impact the firm performance.*

2.3. CEO Characteristics, CSR, and Firm Performance

This section analyzes the insights of the upper echelon theory (UET) [51] in order to understand how CEO qualities and particularly CEO education and CEO tenure effect CSR efforts. CEO education and tenure are considered as potential moderator of the CSR-financial performance linkages. Since executives are actively involved in developing CSR strategies, a growing study stream based on the UET contends that CSR decisions reflect heterogeneity in corporate leaders' intentions [52]. According to this theory, managerial backdrop characteristics might influence strategic decisions. The values and cognitive bases of decision makers are frequently reflected in strategic decisions. Corporate sustainability is a strategic issue. The CEO of a company, as its most powerful player, makes strategic decisions based on his or her own interpretation, which is shaped by his or her experiences, values, and personality [53]. The core ideas of UET are founded on constrained rationality theory, which claims that people's decisions are not always based on rational motives because they cannot acquire and assess all circumstantial data. As a result, they tend to make decisions based on psychological and behavioral aspects. Because CEOs' principles impact their managers' leadership practices, key decision makers' views and value systems influence how businesses respond to varied stakeholder demands. As a result, it is plausible to assume that CEOs have a significant impact on CSR as a strategic direction for their companies.

Several studies use UET's findings to identify various traits of CEOs, including education, tenure and functional background [23,54], that may have an impact on a company's social–environmental performance. In the UET, [51] highlighted the role of the formal education among the various characteristics of managerial background that influence organizational results. In this line, personal background can reflect the level of environmental awareness. The greater the level of education, the greater the awareness of environmental protection. According to past study, managers' educational levels influence their values and views, as well as their decision-making processes. Executive behavior varies depending on education level due to diverse skill sets and knowledge acquired [51]. According to [55], not only the educational level but also the discipline has an impact on CSR performance.

Several studies have found that CEOs' business-related education had a favorable impact on their firms' corporate social performance. For CEOs with an MBA, [56] found a positive correlation between educational background and CSR performance. The authors of [57] established that CEOs with a higher education are more inclined to act in an environmentally and socially responsible manner. Additionally, the authors of [58] corroborate these findings, indicating that CEOs with an MBA are more likely than other CEOs to disclose corporate environmental performance. The involvement in nonfinancial performance can be justified on the basis of financial gain, as MBA graduates desire economic gain from this involvement.

Furthermore, some authors have found that having a business-related educational background has a detrimental impact on CSR performance. Several research have looked into whether an economics degree varies from others when it comes to ethical dilemma decision-making. When economics students are put in a prisoner's dilemma after learning the self-interest model, the results show that they respond in an unethical manner and are more likely to show no cooperative behavior toward others [59]. It was found that economics graduates will not be able to follow the CSR strategy. A postgraduate CEO in a human or social science department, on the other hand, can take good initiative in terms of social impact and environmental norms [59,60]. As a result, previous studies have emphasized the importance of engineering- or science-related degrees in CSR performance because implementing sustainable development typically necessitates complicated and technical capabilities. Existing research indicates that executives with a scientific or engineering degree have a thorough understanding of technology and innovation. CEOs with a science-related degree are more ready to engage in research and development. The authors of [56] found a link between CSR performance and CEOs having a degree in engineering or science. Furthermore, a recent study by [61] shows that CEOs with a background in engineering have a beneficial impact on ESG performance.

Regarding CEO's tenure effects, many scholars advocate that CEO tenure is an important characteristic because it affects a company's business choices and performance [62]. Long-serving CEOs may find CSR reporting to be beneficial for many purposes. First, CEOs who have been in charge for a long time may have more authority to make the right choices and can build on earlier decisions and successful tactics, which can help the company perform better. Second, CEOs obtain growing quantities of firm-specific skills, expertise, and influence throughout the course of their employment at the firm, including more in-depth knowledge about the company's culture, management, and capabilities. As a result, they will have a stronger connection to the company, embracing its aims and strategy, and will be best placed to incorporate stakeholders in order to get access to opportunities in the external environment [63]. Third, because CSR improves businesses in the long run, CEOs with longer tenure can build more social bonds [64]. Long-tenured CEOs can benefit from these links by being more engaged in (CSR) and, as a result, being driven to ensure their company's long-term existence and prosperity. Long CEO tenure may, on the other hand, foster a lack of flexibility, which is harmful to handling the interests of various stakeholders and might lead to a reduction in CSR involvement [65].

Previous researchers have found inconsistent results when it comes to the impact of CEO tenure on CSR reporting. For instance, many scholars document that CEO tenure has a strong favorable impact on CSR performance [56,66]. For example, according to [66], CEO tenure is favorably connected to corporate environmental performance. However, the authors of [62] found that increasing CEO tenure has a detrimental influence on a company's social and environmental performance.

Based on the conceptual framework in Figure 1, the current study considers CEO education and CEO tenure to be the relevant moderators in corporate sustainability-firm performance relationship. Therefore, hypotheses are formulated as below:

H2: *In the relationship of firm financial performance with corporate sustainability, CEO education acts as a positive moderator.*

H2a: *CEOs with an MBA degree will positively affect the relationship between CSR and firm performance.*

H2b: *CEOs with an engineering or science related degrees will positively affect the association of CSR and financial performance.*

H3: *In the relationship of firm financial performance with corporate sustainability, CEO tenure acts as a positive moderator.*

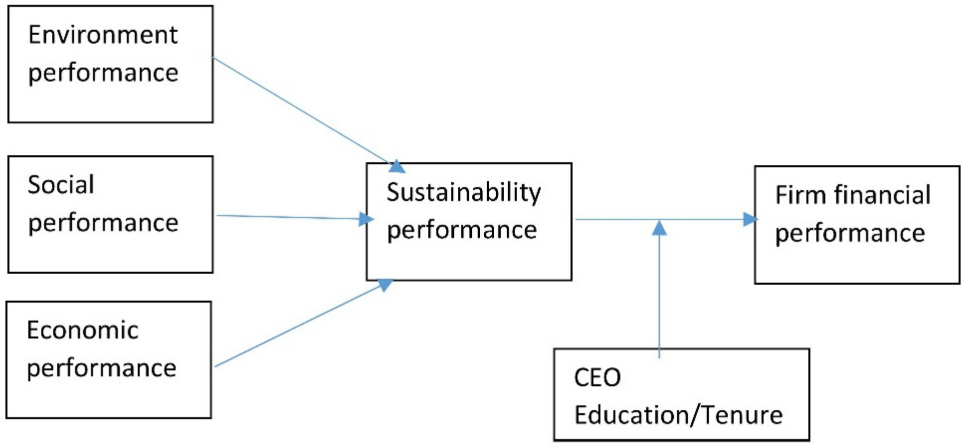

Figure 1. Conceptual model: Corporate sustainability, CEO attributes, and financial performance.

3. Empirical Methodology

3.1. Data and Sample

Our initial sample consists of Saudi listed companies that reported ESG data in the Bloomberg database between 2015 and 2020. CSR data were sourced from the Bloomberg database in which ESG score is calculated to measure a company's transparency in communicating ESG data. It includes 247 possible criteria in the environmental, social, and governance dimensions. For each dimension, the disclosure score out of 100 is based on whether or not actual information was revealed. These rankings are based on publicly available data from CSR reports, sustainability reports, annual reports, corporate websites, and other sources, including information obtained through direct contact with the company.

We manually retrieved data on CEO tenure and education. Data on CEO education were obtained from their CVs and or social media profiles, while data on CEO tenure were taken from the firm annual report. Financial variables were extracted from Saudi enterprises' annual reports. They include financial performance variables and the various control variables. The final sample includes 34 publicly traded companies and covered the years 2015 to 2020. Financial firms, as well as firms with missing data, are excluded from this study because of their reporting rules specificity.

3.2. Variables Measurement

3.2.1. The Dependent Variable

Based on the empirical literature, three variables are used to measure the firm's performance: return on asset (ROA), return on equity (ROE), and Tobin's Q (Tobin-Q). (ROA) and (ROE) measure the firm's accounting performance, while (Tobin-Q) measures the market performance. The ratio of net income divided by total assets is known as (ROA). It shows how a company uses its resources to achieve a satisfactory rate of return. (ROE), is calculated as the ratio of net income to total equity during the period. (ROE) shows the profit as a proportion of the value of the company's stock. Finally, Tobin-Q is calculated by dividing the sum of the market value of equity and the book value of total assets minus the book value of equity by the book value of total assets. It proxies the company's performance in the market. When the variable is between 0 and 1, it signifies that the market price of the company's assets is less than the cost of replacement. The stock is understated in this instance. When the ratio is larger than 1, however, the stock is considered overstated.

3.2.2. The Independent and Moderating Variables

The CSR variable is rated on a scale of 0 to 100. Between 2015 and 2020, the index measures the amount of CSR data disclosed by Saudi companies. The Bloomberg database provides a 0–100 score for each ESG category.

This study employs two moderating variables: CEO education and CEO tenure. Following [29] and based on our hypotheses, two separate variables are used to assess CEO education. First, a dummy variable (MBA) with a value of 1 if the CEO holds an MBA and 0 otherwise. Moreover, we examine the study's field, because a CEO with a degree in engineering or related science is more concerned with social responsibility issues. Therefore, we include a second dummy variable (Field) which has a value of 1 in case the CEO holds a degree in engineering or science, and a value of 0 otherwise. Finally, the moderating variable CEO tenure (Tenure) is measured by the number of years since the CEO's was appointed.

3.2.3. The Control Variables

Following the literature, we include the following control variables: The natural logarithm of total assets at year's end is used to compute firm size (Size); the ratio of total loans to total assets is used to calculate firm leverage (Leverage); sales growth (Sales-Growth) is calculated as the difference between current and previous year sales divided by current year sales; and asset tangibility (Tangible) is defined as the ratio of fixed assets to total assets.

3.3. Model Specification

The moderating effects of CEO characteristics on (CSR) performance and firm financial performance linkages are investigated in this study. To do so, we employ the following regression models:

$$\text{ROAit} = \alpha 0 + \beta 0\text{ROAit-1} + \beta 1\text{MBAi} + \beta 2\text{CSRit} + \beta 3\text{MBAi} \times \text{CSRit} + \beta 3\text{Fieldi} + \beta 4\ \text{Fieldi} \times \text{CSRit} + \beta 5\text{Tenureit} + \beta 6\text{Tenureit} \times \text{CSRit} + \beta 7\text{Zit} + \text{eit} \quad (1)$$

$$\text{ROEit} = \alpha 0 + \beta 0\text{ROEit-1} + \beta 1\text{MBAi} + \beta 2\text{CSRit} + \beta 3\text{MBAi} \times \text{CSRit} + \beta 3\text{Fieldi} + \beta 4\ \text{Fieldi} \times \text{CSRit} + \beta 5\text{Tenureit} + \beta 6\text{Tenureit} \times \text{CSRit} + \beta 7\text{Zit} + \text{eit} \quad (2)$$

$$\text{Tobinit} = \alpha 0 + \beta 0\text{Tobinit-1} + \beta 1\text{MBAi} + \beta 2\text{CSRit} + \beta 3\text{MBAi} \times \text{CSRit} + \beta 3\text{Fieldi} + \beta 4\ \text{Fieldi} \times \text{CSRit} + \beta 5\text{Tenureit} + \beta 6\text{Tenureit} \times \text{CSRit} + \beta 7\text{Zit} + \text{eit} \quad (3)$$

where the subscript *i* indexes firms and the subscript *t* indexes time periods. Zit is the vector of control variables, and eit is the error term. All the variables have been described in the previous section and are summarized in Table 1. We utilize a panel model since panel data are frequently utilized to address the problem of unobserved heterogeneity. We use the GMM estimator established by [67] to estimate Equations (1)–(3). In particular, the above equations are estimated using the two-step GMM estimator with [68] adjustment. Exogenous variables are those that are linked to CEO characteristics. All the other variables are supposed endogenous and are instrumented by lags of no more than three periods.

Table 1. Variable definitions.

Variable	Definition	Measure
ROA	Return on assets performance measure	net income to total assets
ROE	Return on equities performance measure	net income to total equities
Tobin-Q	Tobin's Q performance measure	market value of equity plus the book value of total assets minus the book value of equity, divided by the book value of total assets
CSR	corporate social responsibility index	Bloomberg score based on how much ESG information a company discloses.
Tenure	CEO tenure	Number of years since the CEO's appointment
MBA	CEO education	Binary variable that equals 1 if the CEO holds an MBA degree, 0 otherwise
Field	CEO education	Binary variable that equals 1 for CEOs who have graduated in engineering or science related fields, and 0 otherwise
Size	Firm size	Natural logarithm of total assets at the end of the year
Leverage	Firm leverage	total debts to total assets
S-growth	Sales growth of the firm	Difference between current and previous year sales divided by current year sales
Tangible	Firm tangibility of assets	fixed assets to total assets.

4. Empirical Results

4.1. Descriptive Statistics

Table 2 shows the descriptive statistics for the study's variables. It displays the mean, the standard deviation, the minimum and the maximum values of all the variables. Saudi Arabia's mean (CSR) value was 20.62 indicating a relatively low CSR reporting (21 out of 100). The standard deviation of CSR was 8.68 showing that CSR performance among the organizations analyzed varies significantly.

Table 2. Descriptive statistics.

Variable	Mean	Std. Dev.	Min	Max
Tobin-Q	1.862	0.876	0.354	8.788
ROA	3.064	2.038	−2.521	30.529
ROE	2.082	1.202	−2.768	25.432
CSR	20.62	8.68	4.19	50.34
Tenure	9.356	5.900	0.456	27
Field	0.459	0.498	0	1
MBA	0.0557	0.497	0	1
Leverage	20.231	10.205	0.013	66.889
Sales	−0.124	2.274	−26.212	7.881
Tangible	0.482	0.233	0.0124	0.990
Size	14.781	1.537	11.307	19.915

4.2. Correlation Matrix

Table 3 shows the correlation matrix. First, results demonstrate a positive relationship between CSR variable and the firm's financial performance measures. Besides, the correlation is positive between the different CEO characteristics i.e., CEO education and CEO tenure and CSR. Furthermore, all of the control variables have the predicted sign and are statistically associated with the dependent variable. Various explanatory variables are weakly associated, implying that they may be included in the same model. This result is corroborated by the variance inflation factor (VIF) values where VIF value was much lower than the 5-cutoff level, indicating that multicollinearity is not a concern.

Table 3. Correlation matrix.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	VIF
Tobin-Q	1											2.43
ROA	−0.327	1										2.76
ROE	−0.215	0.856	1									1.54
CSR	0.123	0.435	0.328	1								1.87
Tenure	0.061	0.027	0.086	0.231	1							1.27
Field	0.053	0.030	0.048	0.123	−0.159	1						1.86
MBA	0.076	0.016	0.027	0.154	−0.104	0.280	1					1.92
Lev	0.977	−0.286	−0.185	0.032	0.032	−0.046	0.047	1				2.56
S-grow	0.003	0.294	0.503	0.836	0.019	0.027	0.052	−0.001	1			3.34
Tang	0.090	0.004	0.005	0.764	0.212	−0.037	0.038	0.124	0.078	1		2.71
Size	0.340	0.021	0.032	0.068	0.036	0.121	0.100	0.260	0.079	0.221	1	3.12

4.3. Results and Discussion

Table 4 shows the outcomes of our estimations. Specifications (1), (2) and (3) respectively display results using (ROA), (ROE) and (TQ) performance measures. The system-GMMs are used to estimate all of the specifications.

Before investigating the results of the explanatory variables, it's worth noting that the instruments' validity is confirmed by the Hansen over-identification tests, and the Arellano Bond AR (2) tests corroborate the lack of second-order autocorrelation of the model's residuals in initial differences. Table 4 also demonstrates that the autoregressive terms are significant. When employing various financial performance indicators, the lagged dependent variable is indeed significant. This outcome validates our decision to use a dynamic panel specification.

Moving on to the major explanatory variable's role, i.e., CSR performance, Table 4 shows that the variable CSR has a positive and significant coefficient across all specifications. This finding supports our premise that CSR improves company performance and is consistent with the findings of numerous other studies [10–13]. Furthermore, it supports theoretical positive theories that claim that improved social-environmental performance improves stakeholder satisfaction and leads to improved financial performance. Indeed, theoretical literature assume that companies can improve their brand position, reputation, and image by embracing social responsibility [37,38]. It also improves brand image and company reputation, promotes revenue, strengthens staff commitment and loyalty, boosts productivity, improves quality, and gives additional benefits [18]. Furthermore, it is claimed that (ESG) efforts have an impact on a company's prospects by increasing business value [39]. Indeed, it is argued that implementing sustainability activities improves operating performance, financial market rewards, and risk mitigation [40].

Furthermore, coefficients associated to the CEO educational variables are significant and positive. Indeed, (Master) and (Field) variables show respectively significant and positive coefficients across all the specifications. Thus, it appears that CEOs who hold a master's degree and CEOs who have a degree in engineering or a related science degree are more able to increase firms' profitability. Moreover, Table 4 shows that the coefficient associated to the (Tenure) variable is positive and significant which demonstrates that increased number of years after CEO appointment is favorable for business performance.

Table 4. Estimation results.

	(1)	(2)	(3)
LagROA	0.788 ***		
	(0.000)		
Tenure	0.0813	0.0257 **	0.0288 ***
	(0.154)	(0.018)	(0.000)
MBA	0.0118 *	0.0271 **	0.0066 ***
	(0.067)	(0.029)	(0.0033)
Field	0.0491 *	0.123 ***	0.0947 **
	(0.058)	(0.008)	(0.0122)
CSR	0.1226 ***	0.1519 ***	0.2111 ***
	(0.002)	(0.000)	(0.0028)
CSR * Tenure	0.0265 *	0.0257 **	0.0344 ***
	(0.054)	(0.018)	(0.000)
CSR * MBA	0.0243 **	0.0388 **	0.0233 ***
	(0.047)	(0.030)	(0.0033)
CSR * Field	0.1211 *	0.1543 ***	0.1231 **
	(0.060)	(0.005)	(0.0233)
Leverage	−0.202 ***	−0.177 ***	1.004
	(0.000)	(0.000)	(0.2120)
Sales-growth	0.0765 ***	0.0998 ***	0.0600 *
	(0.000)	(0.000)	(0.091)
Tangible	−0.0221 **	−0.0332	−0.0332 ***
	(0.018)	(0.917)	(0.002)
Size	0.0200 ***	0.0231 ***	0.0018
	(0.004)	(0.000)	(0.2242)
LagROE		0.602 ***	
		(0.000)	
LagTobin-Q			0.1928 *
			(0.063)
Constant	−1.300 ***	−2.313 ***	−1.0409 *
	(0.006)	(0.000)	(0.0622)
N. of Obs.	200	200	198
Instruments	17	14	16
Hansen: p-value [a]	0.435	0.585	0.765
AR (1): p-value [b]	0.000	0.001	0.082
AR (2): p-value [c]	0.398	0.233	0.111

Note: numbers in parentheses are p values. ***, **, * represent significant coefficients respectively at 1%, 5%, and 10%. [a]: Hansen p values test the appropriate of instruments in the null hypothesis. [b]: AR (1) p values test for first-order serial correlation. [c]: AR (2) p values test for second-order serial correlation.

Moving to the interaction variables effects, the interaction between (CSR) and (MBA) is positively significant (0.0243 with p-value of 0.04, when ROA is the dependent variable), suggesting that CEOs with an MBA degree play a positively moderating role in the association between firm performance and CSR. Therefore, our hypothesis (H2a) is supported. These findings corroborate previous studies and indicate that CEOs with an MBA are more likely than other CEOs to disclose corporate environmental performance. The involvement in non-financial performance can be justified on the basis of financial gain, as MBA graduates desire economic gain from this involvement [56,58]. In addition, the interaction between the variables (Field) and (CSR) is positive and significant (0.1211 with a p-value of 0.06 when (ROA) is the dependent variable), indicating that executives with an engineering and related science degrees strengthen the positive association between CSR and corporate profitability, which supports hypothesis (H2b) and is also consistent with the past studies [56,61]. This result implies that implementing sustainable development typically necessitates complicated and technical capabilities and executives with a scientific or engineering degree have a thorough understanding of technology and innovation. CEOs with a science-related degree are more ready to engage in research and development and can take good initiatives in terms of social impact and environmental norms. Finally, the interaction term between the variables (Tenure) and CSR is positive and significant across all the specifications. For instance, when the dependent variable is (ROA), the coefficient is equal to 0.0265 with a *p*-value of 0.054. This demonstrates that executives' tenure positively impacts CSR and firm performance linkages. Specifically, findings demonstrate that longer-serving CEOs are more engaged in CSR initiatives with positive effect on financial performance. Besides, because CSR improves businesses in the long run, CEOs who have been in the job for a longer period of time can form stronger social relationships. Long-tenured CEOs can benefit from these links by being more engaged in (CSR) and, as a result, being driven to ensure their company's long-term existence and prosperity. This result confirms our previous hypothesis (H3) and is in line with the earlier studies [63,64].

Regarding the various control variables, results in Table 4 show that most of the control variables are significant and have the expected sign. The variables (Leverage) and (Tangible) have negative and significant and coefficients of (Size) and (Sales-Growth) are positive and significant. These findings corroborate prior research. Debts are, in fact, used to assess the risk of a company. More debt levels, in particular, might increase default risk and reduce company performance. A negative and significant coefficient exists for the variable (Tangible) since firms may utilize tangible assets as collateral to obtain financing. As a result, asset tangibility is negatively correlated with firm profitability. Furthermore, the coefficient related with (Sales-Growth) is positive and significant. Therefore, companies with significant sales growth are predicted to have higher profit margins and higher firm value. Finally, (size) shows a positive and significant coefficient. Hence, large corporations are better able to negotiate favorable interest rates on financing resulting in increased efficiency.

5. Conclusions

The study investigates the relationship between sustainability performance and financial performance. It particularly aims at examining whether CEO characteristics such as CEO education and tenure have an impact on the relationship between CSR and firm profitability. This research is important for better understanding the impact of CEO features on corporate social responsibility and firms' financial viability. From 2015 to 2020, 34 Saudi publicly traded companies were investigated using a dynamic panel model which includes CEO tenure, CEO MBA and CEO Field as moderator variables in the relationship between CSR and firm performance. First, results indicate that CSR has a positive association with financial performance which is in line with many previous studies. It confirms the idea that corporate sustainability performance enhances the Saudi listed firms' financial performance.

Besides, findings suggest that CEOs with an MBA degree play a favorable moderating influence in the association between firm performance and CSR. Hence, CEOs with an MBA are more likely than other CEOs to disclose corporate environmental performance. Furthermore, results reveal that executives with an engineering or a related science degree strengthen the positive association between CSR and corporate profitability. This result implies that executives with a science-related degree are more ready to engage in research and development and can take good initiative in terms of social impact and environmental norms. Finally, findings demonstrate that CSR efforts are more appealing to CEOs who have worked for the company for a longer period, with a positive effect on financial performance.

The findings of this study offer managers useful information for enhancing organizational performance, while taking into account executives attributes' as one of the reasons that drive enterprises to report on CSR. In particular, it is important to implement policies that promote executives with particular characteristics such as CEOs with a science related degree. it is also important to encourage long tenured CEOs in companies, as a longer tenured CEO is associated with better CSR initiatives. Furthermore, the study's findings should aid in determining the potential impact of employing CEOs to leading Saudi enterprises toward the Saudi Vision 2030, which one of the pillars is to boost the country's economic growth. Finally, while this study may be limited by its small sample size, it should be useful for future research on the role of the CEO in the relationship between CSR and business performance, where other CEO characteristics may be investigated.

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