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## **Board Size as a Mediator in the Relationship Between Corporate Social Responsibility and Audit Quality: Insights from Europe**

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**Abstract:**

**Purpose:** *The purpose of this paper is to investigate how corporate social responsibility and affects audit quality.*

**Design/methodology/approach:** *The study is based on a sample of 600 European firms over the period 2010 to 2022; the paper uses panel data regressions. This study applied structural equations models that specify both a direct and an indirect link between corporate social responsibility and audit quality.*

**Findings:** *We find a positive association between CSR and audit quality, meaning that highly rated companies for CSR activities pay more audit fees. In addition, this study shows that board size mediates the relationship between corporate social responsibility and audit quality.*

**Practical implications:** *The findings may be of interest to the academic researchers, investors, and regulators. For academic researchers, it is interested in discovering the dynamic relation between corporate social responsibility, audit fees, and board size. For investors, our results show that board size mediate the relation between CSR and audit fees. For regulators, our results advise the worldwide policy maker to give the importance of audit quality to improve the engagement firms in corporate social responsibility reporting.*

**Originality/value:** *The paper extends the existing literature by examining the mediation effect of board size on the relationship between CSR and audit quality in European context. To the authors' knowledge, no research studies examined empirically the direct and indirect relationship between CSR, audit quality and board size. Therefore, the main contribution of this research is to show how corporate social responsibility affect audit quality measured by audit fees through board size.*

**Keywords:** *Corporate Social Responsibility, audit quality, board size, agency theory, audit fees.*

**JEL Classification:** *G30, G34, M14, M42, L21.*

**Paper type:** *Research article.*

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## **1. Introduction**

In the new global economy and since the financial crisis of 2008–09, public interest entities are very active in Corporate Social Responsibility (CSR) strategies in line with the triple bottom line (economic, social, and environmental goals). Traditionally, Carroll 1979 asserts that corporate social responsibility integrates economic, legal, ethical, and philanthropic responsibilities into corporate decision-making, advocating that corporations consider the interests of stakeholders beyond their shareholders.

Corporate social responsibility (CSR) refers to the practices and policies of a company in response to the needs of various stakeholders, such as workers, community and environment (Cook and Glass, 2017), also including ethical governance and information transparency (García-Sánchez, Martínez-Ferrero and García-Meca, 2018; Rodriguez-Gomez, Arco-Castro, Lopez-Perez, and Rodríguez Ariza, 2020).

According to the famous business case argument for CSR (Schaltegger *et al.*, 2019), successful CSR strategies should lead to better firm's (no) financial performance and increased firm value. Pressure from the main stakeholders has led companies to make decisions to improve their corporate performance, as a way of achieving social legitimacy (García-Sánchez, 2021; Zhang, Zhu, and Ding, 2013), and disclosing these practices to achieve greater credibility with interest groups (Amran, Lee, and Devi, 2014; Fernandez-Feijoo, Romero and Ruiz-Blanco, 2014; Raucci and Tarquinio, 2020).

CSR and the disclosure of related information are now essential elements in the modern business world, and must be integrated into business strategy for the best performance and to obtain long-term competitive advantages (McGuinness, Vieito, and Wang, 2017; Shaukat, Qiu and Trojanowski, 2016)

The literature in this area has mainly shown the influence of Corporate Social Responsibility (CSR) on audit quality. The two most cited definitions have been provided by (i) DeAngelo (1981), who defines audit quality as the joint probability that auditors both “discover a breach in the client’s accounting system and report the breach,” and by (ii) DeFond and Zhang (2014), who define higher audit quality as “greater assurance of high financial reporting quality.”

Audit quality is a reliable evidence amongst the most basic issues in audit practice. A couple of individuals and social affairs; both inside and outside provide different methods for auditing business information (IAASB 2011). Audit quality can be conceptualized as a theoretical continuum moving from low to high audit quality. Okere *et al.* (2017) assert that an audited financial statement serves as a tool of information to the stakeholders and shareholders.

However, the satisfaction of an audit service depends upon the quality of the audit, which in turn determines the price paid/ payable. As far as the audit fees are concerned, the results of previous studies on the determinants of audit fee (Simunic 1980; Hay *et al.*, 2006) find that the value of an audit is budgeted by estimating the hours that are required to conduct an audit. In addition, other studies reveal more factors that are directly related to audit fees determination such as the auditor's effort, the working risks, and complexity (Hay *et al.*, 2006; Causholli *et al.*, 2011).

According to Kim *et al.* (2012), the more the complexity of an audit the more the audit fees. In terms of working risks, prior literature has questioned the effect of inherent risk, control risk, and fraud risk. Those risks determine the level of the audit fees and reveal that there is a relationship between CSR firm's performance and level of audit fees.

The audit provides users with a credible financial report by verifying the accounting information prepared by the management. There is no time auditing and accounting profession is not under pressure to redeem its image than now. This apparent loss of confidence is consequent upon the loss of quality services rendered by its principal actors, that is, auditors.

An effective corporate governance mechanism is an essential component, generally not only in terms of a nation's economic growth strategy, which is ultimately catered for through entrepreneurial activities of the firms but also particularly in terms of investor confidence. Consequently, there is now an increasing call for tighter corporate governance control and reforms. There is also evidence to suggest that good corporate governance promotes disclosure, transparency, and accountability, variables which are said to be essential ingredients in promoting the affairs of many developing countries (La Porte *et al.*, 2000).

Therefore, the purpose of this paper is, while enhancing the empirical results of the effects of CSR on audit quality. More precisely, to examine if CSR affects audit quality measured by audit fees and how the size of the board of directors influences this relationship. We expect audit fee on corporate with good CSR should be lower because audit risk on those companies is low.

Our content analysis revealed two main theoretical frameworks that guide empirical research into the relationship between corporate social responsibility, and audit quality in particular, and size of board of directors: agency theory and stakeholder theory.

However, this study has been examining the direct relationship between csr and audit quality. No previous study has investigated the indirect relationship between these two concepts. In this context, this paper will focus on the impact of csr on audit quality through board size. In addition, CSR activity has, thus, become a necessity. It is a form of corporate responsibility in repairing environmental damage

and social inequalities caused by the company's operational activities (Dewi and Suputra, 2019).

It is referring to strategies where corporations or firms conduct their business in a way that is ethical, society friendly and beneficial to the community in terms of development. The originality of this paper consists in proposing the establishment of both direct and indirect links between CSR and audit quality through board size. Based on a sample of 600 European firms over the period 2010 to 2022 and using a panel data regression, and after controlling for autocorrelation and heteroscedasticity (using weighted least squares (WLS) method).

There are several important areas where this study makes an original contribution theoretically and empirically. Theoretically, our study contributes to two dominant paradigms of governance research, such as the agency and stakeholder theory. Empirically, investigating the mediation role of board size on the relationships between csr and audit quality.

The results show that CSR is positively associated with audit fees. Meaning that highly rated companies for CSR activities pay more audit fees. We interpret this finding as suggesting that auditing for environmental, social and governance issues is a complex procedure that requires increased audit effort, taking into consideration that the reports will be longer and despite the financial assurance, an auditor has to provide sustainability assurance as well.

In doing so, we help reconcile the differences between existing studies. This paper contests the claim that the csr effectiveness affects audit quality through board size. The major objective of this study was to investigate the mediating effect of board size on the relationship between csr and audit quality in European context. This research seeks to address the following questions:

*Does board mediate the relationship between csr and audit quality in European context?*

The overall structure of the study takes the form of six sections, including this introductory section. Section 2 begins by laying out the theoretical framework. Section 3 presents a review of the literature and the research hypotheses. Section 4 is concerned with the methodology used for this study, which takes into account a description of the sample, a definition of the variables, and the analyses used. Section 5 presents the findings of the research. Finally, concluding remarks are given in Section 6.

## **2. Theoretical Framework**

Research into the relationship between CSR, audit quality and board size has been based on several theoretical arguments. The theories most commonly used included

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agency theory and stakeholders' theory (Kolsi, et al (2021); Amorelli and Garcia-Sanchez, 2021).

## 2.1 Agency Theory

Jensen and Mekcling (1976) introduced the principal–agent relationship between shareholders and managers. They defined this relationship as a contract under which one or more individuals (the principal) engage another individual (the agent) to perform certain functions on their behalf. This implies delegating some decision-making authority to the agent.

Agency problems occur because managers' interests are not necessarily aligned with shareholders' ones (Dakhli, 2021a; 2021b). As a result, managers would act to maximize not only shareholders' wealth but also their own interests (Sreevas *et al.*, 2020; Kachouri and Jarbou, 2017). From an agency perspective, CSR activities are associated with diversion of shareholders' scrutiny that may exacerbate information asymmetry issues and impair firms' reputation, resulting then in higher capital constraints (Bacha *et al.*, 2021).

Agency theory (Jensen and Meckling, 1976) recognizes auditing as one of the main monitoring mechanisms to mitigate the problem of information asymmetry, constrain opportunistic behaviors and improve CSR performance and disclosure (Chung *et al.*, 2005; Agyei-Mensah, 2019; Appuhami and Tashakor, 2017; Habbash and Alghamdi, 2017; Barakat *et al.*, 2015).

An enhanced audit process quality is expected to result in higher quality financial reporting, more credibility and less opportunistic behaviors (Watkins *et al.*, 2004). It facilitates the diffusion of innovative practices, such as CSR practices (Xiao *et al.*, 2004; Kolsiet *et al.*, 2021; Bacha *et al.*, 2021).

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## 2.2 Stakeholder Theory

Stakeholder theory has been intimately connected to the idea of strategy from the earliest days. The stakeholder idea was developed at Stanford Research Institute as well as by Eric Rhenman in Sweden (Freeman *et al.*, 2010) as a way of organizing information that was increasingly important in strategic planning. The principal idea of stakeholder theory is that businesses should create value for all their stakeholders – those who can affect or be affected by the realization of an organization's purpose

(the wide definition) or those without whose support the organization would not exist (the narrow definition).

CSR has been used to show that business can be both profitable and contribute to social benefit (Kaul and Luo, 2018), explore the connection between financial and social logics (Yan *et al.*, 2018), and examine the role of institutions in corporate decisions to act in socially responsible ways (Campbell, 2007). Proponents of stakeholder theories state that firms primarily bear economic responsibility as well as legal, ethical and philanthropic responsibilities in order to satisfy the needs of stakeholders (Guix *et al.*, 2018).

According to them firm's survival and success depend on the ability of its managers to create satisfaction for its stakeholders. Firms that establish a positive relationship with stakeholders gain a competitive advantage (Lu *et al.*, 2021; Kim *et al.*, 2018).

### **3. Literature Review and Hypotheses Development**

#### **3.1 Corporate Social Responsibility and Audit Quality**

There is a growing understanding among management scholars that our field has to contribute to social welfare (Jones *et al.*, 2016), especially by addressing social issues (Walsh *et al.*, 2003). Within the growing body of literature on social issues in management, many scholars have applied, either partially or fully, two theoretical frameworks – stakeholder theory and corporate social responsibility (CSR) (Barnett, 2007; Mitchell *et al.*, 2016; Schrempf-Stirling *et al.*, 2016; Schwartz and Carroll, 2008; Suryanto *et al.*, 2017; Norena-Chavez and Thalassinos, 2022a; 2022b).

Prior studies on the relation between CSR and audit fees is few and the results are mixed so, this study contributes to the literature by filling that gap. According to current trends on CSR reporting many studies have found that companies which act under the concept of corporate social responsibility should report on these activities and inform society about company's social engagement (Heemskerk *et al.*, 2002).

Surveys such as that conducted by Cheney (2010) have shown that, corporate social responsibility engagement became not only a matter of large multinational companies, but also even small and medium-sized companies have begun to recognize the importance of the disclosure of nonfinancial information such as CSR reporting beyond the ordinary annual reports.

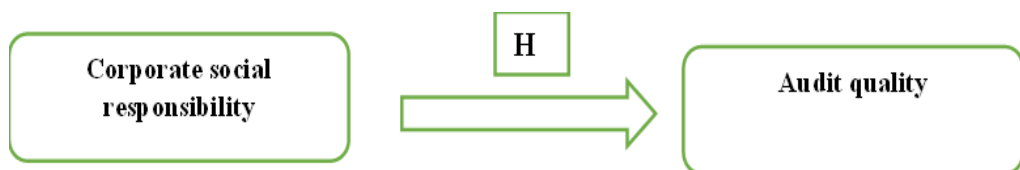
The preceding discussion argued that financial reporting of high quality builds investors' confidence and improves firm's externality for disclosing CSR information (Chen *et al.*, 2016). According to the previous arguments, that positive association suggests that higher quality financial reporting which result in higher audit fees is committed to greater CSR reporting credibility.

Additionally, from auditors' side, with the disclosure of CSR information the scope of the audit becomes bigger because they have the obligation to assess not only the financial information, but also the nonfinancial activities such as CSR.

So, for the better quality of nonfinancial information, more resources are needed and more effort from the auditors, which logically will result in greater audit fees. In more detail, the disclosure of nonfinancial information such as CSR depends on the reliability and the credibility of the CSR engagement. In an investigation into CSR reporting, (Ioannou and Serafeim, 2017) found that, the credibility of the disclosed information is such significant as is financial reporting.

In this vein, DeAngelo (1981) states that audit quality increases with the size or the brand of an audit firm. Recent evidence suggests that, the larger well-known auditors deliver higher audit quality to maintain independence from their clients and protect the reputation capital (Bacha *et al.*, 2021). Based on these findings, we proposed a positive relationship between Corporate Social Responsibility and Audit quality.

**Figure 1.** Corporate Social Responsibility and audit quality model



*H1: Corporate Social Responsibility has a positive effect on audit quality (Figure 1).*

### 3.2 The Mediating Effect of the Board of Directors' Size on the CSR-Audit Quality Relationship

Board size stands out as one of the pivotal features of the board of directors, underlining its significance in the governance structure (Tibiletti *et al.*, 2020). The number of directors comprising the board is posited to exert a direct influence on its functionality and overall corporate efficiency (Ali and Ayoko, 2020; Alrowwad *et al.*, 2022; Raboshuk *et al.*, 2023; Tibiletti *et al.*, 2020).

Undermining Jensen's (1993) advice, MacDonald and Westphal (2013) argued that larger boards are capable of giving more time and effort to check the management's actions. Contrary to this notion and in support of Jensen's (1993) advice, Eisenberg *et al.* (1998), Balakrishnan *et al.* (2014), Hutchinson *et al.* (2015) and Zona *et al.* (2013) argued that the benefits of a higher level of monitoring by a huge board may be nullified because of poor decision making by a large board.

Hence, a small board is believed to alleviate the processing problems and effectively enhance board-monitoring function. The argument whether a small board size or big board size is better in an organization is far from being settled. Scholars like Akhidime (2015), Khundhair *et al.* (2019), Ejeabasi *et al.* (2015), Sakka and Jarboui (2014) and Al-Najjar (2018) reported a positive and significant relationship between board size and audit quality.

Slightly different from this view, Mustafa *et al.* (2018) and Marjène and Azhaar (2013) submitted that board size negatively affects audit quality. However, Mustafa *et al.* (2017) found no evidence on the nexus board size and audit quality.

The overall results of Qasim *et al.* (2021) on a sample of 65 Jordanian manufacturing companies listed on Amman Stock Exchange spanning 5 years from 2014 to 2018 reveal that certain board characteristics affect audit quality, such as size and independence of the board. Both of these will improve the decision-making process to be more transparent and objective and strengthen independence in selecting the quality of external auditors.

As an important element of corporate governance (Rouf, 2017; Amran *et al.*, 2014; Allegrini and Greco, 2013), board size can be seen as a vital mechanism of corporate governance that may influence the level of corporate voluntary disclosure, including CSR disclosure (Rouf, 2017; Ntim *et al.*, 2013). Khan *et al.* (2020) reported that board size was positively associated with information contained in CSR reports, which are part of the annual reports of Pakistani listed companies in various sectors.

Consistent with these opinions, the results of the empirical studies such as Rouf and Akhtaruddin (2019), Samaha *et al.* (2015) and Sun *et al.* (2010) documented a positive relationship between the board size and the level of disclosure.

According to the findings of Akhtaruddin and colleagues (2009), a higher number of board members is likely to influence managers to provide more voluntary information in the company's annual reports. This suggests that a larger board is likely to offer more voluntary information than a smaller board. These results align with studies by Liao *et al.* (2018) and Loc and Thuan (2018).

Corporates with good social responsibility and strong corporate governance may have audit contracts with lower audit fee because they have lower level audit risk and auditors expect shorter audit time (Kim and Kim, 2013). Accordingly, we posit the hypothesis that the connection between corporate social responsibility may affect audit quality through a governance mechanism, such as the size of the board of directors. Therefore, we set forth the following assumption:

*H2: The size of the board of directors mediates the relationship between CSR and audit quality.*



**Figure 2.** Corporate Social Responsibility, audit quality and size of the board of directors: a mediated model.



#### 4. Research Design

##### *Data and sample selection:*

This study will use a sample of firms listed on the STOXX Europe 600 (6292 firm-year observations). Furthermore, the study excludes the financial companies due to the different regulations adopted by these companies compared to other sectors. The exclusion of financial firms is justified by the fact that they are governed by a special legislation in the preparation of their financial statements and by specific sector accounting standards.

Our database has been collected from the DataStream database. This study is done according to the quantitative data analysis. This paper used a convenience sample of 600 European listed companies (non-financial sector). The study period ranges from the beginning of 2010 to the end of 2022. Thus, 484 firms and 6292 observations will make up our sample construct, as depicted in Table 1.

**Table 1.** Sample selection procedure

Sampling steps	No. of firms
Initial sample	600
Financial firms	(116)
Final sample	484
Duration of study	2010-2023
Total observations	6292

*Source:* Own study.

The study period extends from the beginning of 2010 to the end of 2023. This choice is justified by the availability of the database and by the choice of study variables.

#### 4.1 Variable Definitions and Models Specification

##### *Dependent variable:*

The dependent variable in this analysis is the audit quality. The Audit quality is measured by the audit fees, we employ the natural logarithm of audit fees (LNFEET) as all the prior researchers have done (Huang *et al.*, 2014; Harjoto *et al.*, 2015; Aldamen *et al.*, 2018).

***Independent variables:***

Corporate Social Responsibility (CSR): Following Cheng *et al.* (2013), Bacha *et al.* (2021) and Salhi *et al.* (2020), we rely on CSR scores given by the Thomson Reuters ASSET4 ESG database. This CSR score is based on more than 750 individual data points and is the weighted average of the scores on three fundamental dimensions of CSR (environmental, societal and governance).

***Control variables:***

We used three firm-specific factors as control variables in our empirical models in order to improve the accuracy of predictions and the reliability of the analysis's inference. These factors are firm size, return on assets and firm leverage (measured by total debt/total equity).

- ✓ **Firm size (SIZE):** Prior studies (e.g., Berrone and Gomez-Mejia 2009; Cho and Patten 2007; Kock *et al.*, 2012) analyzing the associations between environmental disclosures and environmental performance commonly include controls for firm size and financial performance. Firm size (SIZE) is included as the natural logarithm of total assets, because firm size is related to economics of scale or scope, which may be relevant for competitive aspects (Fu *et al.*, 2020).
- ✓ **Return On Assets (ROA):** Financial performance must also be included, as it may positively influence sustainability performance. We include return on assets (ROA). We control for firm performance by including return on assets (ROA), measured as the change in income before extraordinary items, divided by total assets at the beginning of each year.
- ✓ **Leverage (LEV):** We recognize leverage (LEV) to control for financial stability of the firm. we control for the change in external financing needs of the firm. We construct firm's leverage, measured as the total debt divided by total assets.
- ✓ **Property, plant, and equipment (PPE):** Rodrigue *et al.* (2013) find that older property, plant, and equipment likely requires more pollution-intensive technology, which is associated with poorer environmental performance. To avoid the risks associated with a greater concentration of pollution-intensive technologies, firms are encouraged to establish a CSO to supervise environmental/sustainability risks.

Previous studies have shown that these variables can have significant effects on this relation (Bacha *et al.*, 2021; Riguen *et al.*, 2021; Endrikat *et al.*, 2020; Dewi and Monalisa, 2016).

**Table 2.** Variables' definitions and measures

Variable	Code	Definition	Authors
<b>Dependent variable</b>			
<b>Audit fees</b>	FEE	Natural logarithm of the total fees paid to auditors	Huang et al. (2014), Harjoto et al. (2015), Aldamen et al. (2018)
<b>Independent variable</b>			
<b>Corporate social responsibility</b>	CSR	A combined score on the three dimensions (social, environmental and governance).	Bacha et al. (2021), Zeng (2021), Salhi et al. (2020), Cui et al. (2018), Achour and Boukattaya (2021)
<b>Mediator variable</b>			
<b>Board Size</b>	Board Size	The total number of directors serving on the board of directors	Mustafa et al. (2018), Margined and Azhaar (2013)
<b>Control variables</b>			
<b>Firm size</b>	SIZE	Natural logarithm of total assets	Bacha et al. (2021), Godos-Diez et al. (2020), Riguen et al. (2021), Achour and Boukattaya (2021)
<b>Firm leverage</b>	LEV	Total debt divided by total equity	Ongsakulet al. (2020), Cho et al. (2019), Riguen et al. (2021)
<b>Return on assets</b>	ROA	Net income/Total assets	Chakroun et al. (2020), Rashid (2020), Lahouel et al. (2020a, b), Ramzan et al. (2021)

*Source:* Own study.

#### 4.2 Models' Specification

In this study, we aim at examining the effect of CSR on audit quality and the mediating role of board size on this relationship. For this purpose, we proceed in two steps. Our starting point in the multivariate analysis was the following equation model for the estimation of CSR and audit quality. In the other words, we use the following base regression model to examine the relation between CSR and audit quality.

$$LNFEE_{it} = \beta_0 + \beta_1 CSR_{it} + \beta_2 Size_{it} + \beta_3 ROA_{it} + \beta_4 LEV_{it} + \varepsilon_{it}$$

Where LNFEE: is the natural log of audit fees; CSR: corporate social responsibility; Size: is calculated as a natural logarithm of total assets; LEV: is calculated as the ratio of total debt to total assets; ROA: return on assets.

H2 was tested using the mediated procedure outlined by Baron and Kenny (1986) and Kenny *et al.* (1998), who developed a series of four successive and essential tests to evaluate the mediating effect of a variable M in the process of impact of the independent variable X on the dependent variable Y.

In the first stage, establish the significance of the link between the independent variable (CSR) and the dependent variable (Audit fees) to confirm the existence of an impact to be mediated. Secondly, demonstrate that the independent variable (CSR) exerts a significant impact on the mediating variable (Board size) considered as a variable to be explained in a regression analysis of M on X. Finally, establish the significance of the relationship between the size of board of directors and audit fees by conducting a regression of Y on both M and X.

To examine the mediating effect of board size we introduce an interaction term between audit quality and CSR and estimate the following models:

$$LNFEF = \beta_0 + \beta_1CSR + \beta_2ROA + \beta_4LEV + \epsilon_i \quad \text{(Model 1)}$$

$$BoardSize = \beta_0 + \beta_1CSR + \beta_2ROA + \beta_4LEV + \epsilon_i \quad \text{(Model 2)}$$

$$LNFEF = \beta_0 + \beta_1CSR + \beta_2BoardSize + \epsilon_i \quad \text{(Model 3)}$$

Where board size refers to the size of board of directors, which refers to the number of directors serving on the company's board of directors (Abdulsamad *et al.*, 2017; Kiliç *et al.*, 2015; Mohd-Said *et al.*, 2018).

## 5. Research Results

### *Descriptive statistics:*

Table (3) provides descriptive statistics for the regression variables. Panel presents descriptive statistics for the entire sample, including the mean, minimum, median, maximum and standard deviation.

**Table 3.** Summary statistic of the sample

Variables	Median	Mean	Min	Max	Std. dev.
LNFEF	4700	18168.04	230	90000	162183.2
CSR	65.63	62.372	11.18	92.28	19.008
Board size	11	11.026	4	21	3.843
SIZE	16.332	16.475	8.2161	23.863	2.015
LEV	25.38	26.08	0	63.05	15.24
ROA	5.44	6.891	-12.4	37.61	12.056

*Note(s): LNFEF: is the natural log of audit fees; CSR: corporate social responsibility; Size: is calculated as a natural logarithm of total assets; LEV: is calculated as the ratio of total debt to total assets; ROA: return on assets; Board size (BS): Number of directors on the board for firm i in time t.*

Source: Own study.

According to Table 3, we observe significant variability in the values of the variable LNFEF, with an average of 18168.04 and considerable dispersion, which may indicate significant variations in the measured costs or fees. Zhang *et al.* (2023) find that the variable representing audit fees (LNFEF) has a normal distribution, with an average of 13.79 and a median of 13.71, indicating that a majority of audit fees fall within a relatively narrow range.

As for the variable RSE, descriptive statistics reveal that the corporate social responsibility (CSR) engagement of the companies in our sample has a diverse range of scores. These scores range from a minimum of 11.18, indicating low interest in social, environmental, and governance issues, to a maximum of 92.28, illustrating strong involvement in societal issues, consistent with the findings of Bacha *et al.* (2021).

Regarding the "board size" variable, descriptive analysis results indicate that the board size in our sample varies between a minimum of 4 and a maximum of 21 members, with an average of 11.02676 and a standard deviation of 3.843382. The study by Liem *et al.* (2020) suggests that the board size is approximately 5.3, meaning there are about 5 members on the board. Table 4 provides the Pearson correlations between the model variables of this study. We observed a negative correlation between the 'ESGSCORE' and the dependent variable 'Audit Fees' of (-0.0296\*). This result corroborates the findings of Shuili Du *et al.* (2020), which provide strong evidence that CSR (Corporate Social Responsibility) companies pay lower audit fees using both level and change models.

On the other hand, the results of Zhang *et al.* (2023) show a significant positive correlation (at the 1% level) between CSR and audit fees (Lnfee) among companies required to disclose. Therefore, we can conclude that our sample does not suffer from multicollinearity problem (Lavery *et al.*, 2019).

**Table 4.** Pearson correlations for independent variables

	ESGSCORE	Board size	SIZE	ROA	LEV	LNFEF
ESGSCORE	1					
Board size	0.3103*	1				
SIZE	0.3783*	0.3922*	1			
ROA	-0.0862*	-0.1424*	-0.2547*	1		
LEV	0.0318*	0.0415*	0.0641*	-0.0172*	1	
LNFEF	-0.0296*	-0.0118*	0.0066*	-0.0082*	-0.001*	1

*Note(s): LNFEF: is the natural log of audit fees; CSR: corporate social responsibility; Size: is calculated as a natural logarithm of total assets; LEV: is calculated as the ratio of total debt to total assets; ROA: return on assets; Board size (BS): Number of directors on the board for firm i in time t.*

*\*\*\*significant at 1% level; \*\*significant at 5% level; \*significant at 10% level*

*Source: Own study.*

## **6. Discussion Results**

Table 5 indicates that Regression 1 reaches statistical significance at the 5% level (Wald  $\chi^2 = 19.95$ ,  $p = 0.000$ ), leading to the rejection of the null hypothesis. The  $\text{Prob} > \chi^2$  is less than 0.05 (or 5%), suggesting that the entire set of coefficients in the model is statistically significant. Regarding the coefficient estimation results, it is observed that audit quality (measured by audit fees) is positively and significantly associated with the level of Corporate Social Responsibility (CSR) engagement ( $c = 0.147$ ) (at the 1% significance level).

The high z-statistic, equal to 36.12, and the very low p-value of 0.000 indicate a significant positive correlation between the level of Corporate Social Responsibility engagement and audit fees. Thus, hypothesis H1 is confirmed. These results are consistent with the study by Yip (2023) investigating the relationship between corporate social responsibility and audit fees based on the Malaysian market.

Examining 51 Malaysian publicly traded companies over the period from 2012 to 2020, the study reveals a positive relationship between CSR and audit fees. Additionally, findings from the study by Zhang *et al.* (2023) suggest that companies that disclose ESG information are inclined to incur higher audit fees compared to those that do not disclose such information.

Kolsi *et al.* (2021) aimed to highlight the relationship between certain attributes of external audit firms, including the size of the audit firm, and voluntary disclosures regarding Corporate Social Responsibility (CSR) by audited companies. They used a sample of listed companies on the Abu Dhabi Securities Exchange (ADX) for the period 2010-2016.

They revealed that the age, size, industry specialization, and portfolio diversification of auditors positively affect the level of CSR disclosure by clients. In contrast, the extent of audit fees and auditor experience have no impact on CSR statements of companies listed on the ADX.

This study evaluated the proposed models using a mediation approach. Following the procedure used by Baron and Kenny (1986) and Kenny *et al.* (1998), three conditions have to be fulfilled to prove the existence of a mediating process. Thus, we proceed with the validation of the first condition required by Baron and Kenny's approach (1986) and observe a positive and significant relationship, as illustrated by the coefficient  $c$ . This observation confirms the validity of the first hypothesis (H1).

The second step involves testing the relationship between the size of the board of directors and corporate social responsibility on one hand, and the relationship between audit fees and board size on the other hand. The significant correlation observed between ESGScore and Board Size (positive coefficient = 0.062,  $p = 0.000$ ) at the 1% significance level implies a meaningful positive association between

corporate social responsibility and board size. The high statistical significance indicates that ESGScore serves as a significant predictor of Board Size. Our finding aligns with the studies conducted by Ahmad *et al.* (2017), Khan *et al.* (2020), and Shahab and Ye (2018), which indicate a positive relationship between board size and CSR.

**Table 5.** Results of the multiple regression of Model 1

Model 1			
	Coefficients	z	P> z
Constant	0.251	3.92	0.000
CSR	0.147	36.12	0.000
Size	0.102	0.77	0.523
ROA	-0.018	-2.47	0.007
LEV	-0.126	-14.25	0.000
Wald Chi-2	19.95		
Prob>Chi-2	0.000		
<i>Note(s): LNFEES: is the natural log of audit fees; CSR: corporate social responsibility; Size: is calculated as a natural logarithm of total assets; LEV: is calculated as the ratio of total debt to total assets; ROA: return on assets; Board size (BS): Number of directors on the board for firm i in time t.</i>			
<i>***significant at 1% level; **significant at 5% level; *significant at 10% level</i>			

Source: Own study.

Furthermore, empirical results regarding board size are mixed. Alotaibi and Hussainey (2016), Jangu *et al.* (2014), and Jizi *et al.* (2014) found a positive impact of board size on CSR. However, according to Abduh and AlAgeely (2015), among others, board size was negatively related to CSR.

Subsequently, there is a significant negative relationship between Board Size and audit fees, with a coefficient of -0.256. Our findings are in line with the conclusions of Mustafa *et al.* (2018) and Marjène, Azhaar (2013), who supported the idea that a larger board size would have a negative impact on audit quality.

Furthermore, the overall results of the study conducted by Qassim *et al.* (2021) on a sample of 65 Jordanian manufacturing companies listed on the Amman Stock Exchange over a period of 5 years (from 2014 to 2018) highlight the influence of certain board characteristics on audit quality, including board size. This finding suggests an enhancement of the decision-making process, making it more transparent and objective, and reinforces independence in the selection of external auditors based on quality.

However, the study conducted by Saidu and Aifuwa (2020) indicates that only the size of the board of directors shows a positive and statistically significant correlation, thus influencing audit quality. Similarly, Sarhan *et al.* (2019) examined the impact of corporate governance mechanisms, assessed at both the national and individual company levels, on audit quality (measured by auditor choice and audit

fees) in the Middle East and North Africa (MENA) countries. The findings of their study revealed a correlation between national-level corporate governance practices and audit quality.

The results show that Board Size is negatively associated with audit fees, while ESGScore is positively associated with audit fees. These relationships indicate that Board Size and ESGScore have different impacts on audit quality, as represented by audit fees. Therefore, Board Size appears to play a mediating role in influencing audit fees in the relationship between CSR and audit quality. The mediating role of board size is thus verified, and consequently, hypothesis (H2) is confirmed.

**Table 6.** Results of the multiple regression of the mediating models

variables	model 2			model 3		
	Coefficient	Z	P> z	Coefficient	Z	P> z
<b>Board size</b>						
ESGScore	0 .062	28.71	0.000			
<b>Audit fees</b>						
Board size				-0.256	-7.24	0.000
ESGScore				0.478	2.40	0.000
<i>Notes: ***significant at 1% level; **significant at 5% level; *significant at 10% level</i>						

Source: Own study.

## 7. Conclusion

In this paper, we investigated the variation of corporate social responsibility in an audit quality context. We used a representative sample comprised of 595 European companies over the period from 2010 to 2022. In conclusion, this study delved into the intricate relationship between Corporate Social Responsibility (CSR), audit quality, and the size of the board of directors.

The theoretical underpinnings were grounded in agency theory and stakeholder theory, which provided a comprehensive framework for understanding how these factors interact. The findings of this research contribute significantly to the existing body of knowledge. Firstly, it was established that CSR positively affects audit quality, as evidenced by the positive association between CSR engagement and audit fees.

This suggests that companies with robust CSR practices tend to undergo more rigorous auditing processes, possibly due to the complexity of assessing non-financial information and the need for enhanced assurance. Moreover, the study explored the mediating role of the size of the board of directors in the relationship between CSR and audit quality. It was found that board size serves as a significant predictor of CSR, with a meaningful positive association observed.



However, the relationship between board size and audit quality, represented by audit fees, yielded mixed results. While some studies supported a positive impact of board size on CSR and audit quality, others found a negative association.

Importantly, the results revealed that board size plays a mediating role in influencing audit fees in the context of CSR and audit quality. This implies that the size of the board moderates the relationship between CSR engagement and audit quality, highlighting the complex interplay between corporate governance mechanisms and auditing practices.

In summary, this study sheds light on the nuanced dynamics between CSR, audit quality, and board size, providing valuable insights for both academics and practitioners. By elucidating the mediating role of board size, it offers a deeper understanding of how corporate governance structures influence the effectiveness of CSR initiatives and auditing processes. Ultimately, these findings contribute to the ongoing discourse on responsible corporate behavior and the role of governance mechanisms in ensuring transparency and accountability.

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