



*Research article*

## **Does corporate social performance lead to better financial performance?**

### **Evidence from Turkey**

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**Abstract:** In the past two decades, research on the relationship between corporate social performance (CSP) and corporate financial performance (CFP) has seen considerable growth; however, evidence from Turkey remains scarce, and the results are not uniform. To address this lack, this study investigates the impact of CSP on CFP from the perspective of stakeholder theory. Following the investigation of 47 publicly listed companies from the BIST Corporate Governance Index (XKURY) in the period 2014–2018. The results demonstrate that CSP positively affects CFP in both the short and long term. This study addresses the lack of Turkish experience, and the results indicate that CSP is an intangible resource in corporate strategy that can improve the competitive power of Turkish enterprises. Furthermore, the study emphasizes the positive role of CSP in short-term and long-term CFP in the Turkish context from the stakeholder perspective. The results have implications for Turkish policymakers regarding the rational use of corporate social responsibility (CSR) to promote economic development and insights for Turkish enterprises in terms of gaining stakeholders' trust and improving investors' valuation through the strategic use of CSR to achieve long-term, sustainable development of enterprise competitiveness and finance.

**Keywords:** corporate social responsibility; corporate social performance; corporate financial performance; stakeholders; Turkey

**JEL Codes:** L25, M14

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## 1. Introduction

The question of enterprises' responsibility has concerned academics and practitioners for a long time. Among these concerns, there is no doubt regarding the economic contributions of enterprises in terms of accountability to shareholders, compliance with tax payments, and job creation. However, given the contemporary changes in social values, many researchers, policymakers, and professionals have started questioning whether enterprises should be responsible for protecting the environment and supporting communities when earning profits. This emerging belief maintains that businesses are responsible to society beyond just being profitable and maximizing shareholder value (Carroll and Shabana, 2010). Freeman (1984) contends that if stakeholders raise their concerns over firms' actions and policies, firms' socially responsible behavior can minimize externalities and maximize synergies in stakeholder relations. Stakeholders include government, consumers, suppliers, employees, and the surrounding community (Freeman, 2014). These stakeholders have the right to convey their requests and expectations to enterprises (Deegan, 2006). With these increasing expectations, stakeholders' pressures on enterprises have also increased (Fernandez-Feijoo et al., 2014). In this era, corporate social responsibility (CSR) reports function as the communication channel for delivering information on CSR practices to stakeholders (Chen et al., 2015) to relieve external pressures (Fernandez-Feijoo et al., 2014). Enterprises should implement CSR practices that are consistent with relevant government regulations (Clemens and Douglas, 2006) and to meet local social value (O'Donovan, 2002). Consequently, improved CSR can enhance enterprises' employee satisfaction (Greening and Turban, 2000) as well as competitive corporate power (Eccles et al., 2014), in addition to contributing to maintaining stable partnerships within supply chains (Syed et al., 2020).

Although CSR activities can benefit enterprises, does the conflict between corporate activities and limited firm resources affect corporate financial performance (CFP)? Numerous studies have emerged examining the relationship between CSR and CFP; However, conclusions have not yet reached a consensus (Akben-Selcuk, 2019). Friedman (1970) argued that businesses should focus on engaging in productive activities and increasing profits applying valuable firm resources. This is because CSR activities can lead to diminished profitability and reduced shareholder wealth (Makni et al., 2009). Additionally, some studies provide evidence to support this argument, such as the negative impact of CSR on CFP in the UK (Moore, 2001) and the negative relationship between CSR and return on assets in emerging market economies (Selcuk and Kiyamaz, 2017). In contrast, CSR engagement has been argued to establish insurance-like-protection for enterprises, which could reduce the uncertainty of future cash flows when addressing negative social and environmental issues (Luo and Bhattacharya, 2009) and enterprises' risk (Jo and Na, 2012). Ting et al. (2020) argued that the valuation effects of the stock market could be reduced by enterprises' corporate social initiatives. Meanwhile, investors also consider enterprises' CSR to determine valuation (Awaysheh et al., 2020), which may lead to the enhancement of CFP. Existing evidence also indicates that enterprises with high social expenditures can gain high earnings per share (Zakari, 2017). CSR activities are strongly related to enterprises' market valuations (Awaysheh et al., 2020), and corporate environmental performance also positively affects firm value (Utomo et al., 2020). Moreover, there is evidence revealing that the relationship between CSR and CFP (Resmi et al., 2018) and expenditures of CSR and CFP (Menezes, 2019) are insignificant. This inconsistent evidence implies that the relationship between corporate social performance (CSP) and CFP should be investigated in depth (Adegbite et al., 2019); particularly, empirical tests in emerging economies (Ting et al., 2020).

It is important for emerging economies to study the relationship between CSP and CFP, particularly in Turkey (Akben-Selcuk, 2019). This is because developed economies and emerging economies have

differing business systems and institutional environments (Jamali and Neville, 2011). Given the limited number of social goods provided by public institutions, emerging economies are shown to adopt initiatives to offset the shortage gap using CSR (Dobers and Minna, 2009). Meanwhile, compared with developed economies, enterprises in developing economies are generally more concerned about financial targets based on government policy and investment decisions (Li et al., 2020). These differences could lead to differences in the application of CSR (Jamali and Neville, 2011). The majority of large enterprises in Turkey are family-owned (Oba et al., 2010), and government policy in Turkey focuses more on economic development than long-term CSR issues (Ozdora-Aksak and Atakan-Duman, 2016). This deepens enterprises' concerns of short-term economic performance to protect the interests of the family members who are the major shareholders (Akben-Selcuk, 2019). These circumstances make Turkey's CSR situation more complex than other developing economies. In addition, studies in Turkey have demonstrated inconsistent results. Özçelik et al. (2014) investigated data from Borsa Istanbul companies, revealing an insignificant relationship between CSR and CFP; however, Arsoy et al.'s (2012) results indicate that CSR positively affects CFP. Regarding these contradictory results, Barauskaite and Streimikiene (2021) suggest that the high cost of CSR may not benefit enterprises' CFP in the short term, but will strengthen long-term CFP. The relationship between CSP and CFP should be rigorously reinvestigated considering the evolution of time and stakeholder sentiment.

This study uses data from BIST Corporate Governance Index (XKURY) members throughout the period 2014–2018 to examine the relationship between CSP and CFP in Turkey. Random and fixed effects panel data estimation techniques are applied, along with Driscoll and Kraay's (1998) standard error estimates, to ensure econometric rigor. The study aims to provide updated empirical evidence from Turkey to examine the evolution of the relationship between CSP and CFP and offer suggestions to Turkish managers for a more comprehensive understanding of the positive effect of CSR in corporate long-term strategy.

The remainder of the study is structured into four sections. Section 2 reviews the extant literature and constructs the hypotheses to be subjected to testing. Section 3 presents the data, variables, and detailed empirical models. Section 4 comprehensively illustrates initial diagnostics and estimation results, and Section 5 presents a discussion of the results, implications, and the limitations of the study.

## 2. Literature review and hypothesis development

Stakeholder theory suggests that modern enterprises should not only be concerned about shareholders but also need to focus on other stakeholders (Freeman, 2014). Freeman (2014) argued that the stakeholders include community, customers, employees, government, and suppliers. Enterprises have both economic and social responsibility (Freeman 1984), which also offers the potential for enterprises to establish sustainable wealth through better stakeholder relationships (Garcia et al., 2017). Enterprises with better corporate responsibility practice toward employees, products, and services can reduce employee turnover and maintain corporate reputations (Chen et al., 2019), leading to decrease in operation cost and benefiting firms' long-term gains (Liao et al., 2021). Therefore, the relationship between CSP and CFP might be explained from the stakeholder perspective.

### 2.1. Measurement of CSP and CFP

Existing studies have applied numerous approaches to measure CSP and CFP (Galant and Cadez, 2017). To measure CSP, identifying firm level CSP data and choosing the relevant ranking from

different institutions always presents a challenge for researchers (Chatterji et al., 2016). This is because some enterprises do not publish comprehensive disclosures of CSR practices, and there are differences between industries' disclosure metrics that poses difficulty to measure CSP (Awaysheh et al., 2020). Therefore, enterprise, social, and governance (ESG) scores from third-party databases, such as Asset4, Bloomberg, and MSCI KLD, have been selected for CSP measurement in the relevant literature. These scores describe enterprises' ESG (or economics) practices. For example, Ting et al. (2020) adopted ESG scores from Asset4 as the measurement of CSP for investigating the relationship between CSP and firms' performance in emerging economies, and Awaysheh et al. (2020) used KLD scores as measurement for investigating the relationship between CSP and CFP. However, such databases only include the world's large enterprises, which limits the research on developing countries, specifically in the Turkish context.

As a solution to this data collection challenge, the XKURY is selected as the measurement of CSP for the Turkish studies (Arsoy et al., 2012; Saygili et al., 2021). Although there is no index similar to the KLD in Turkey, the XKURY includes seven stakeholder-related subsections (business ethic, conserve company assets, human resource policy, social responsibility performance, stakeholder management, stakeholder policy, and supply chain relations) that could capture Turkish companies' CSP (Arsoy et al., 2012). Therefore, Arsoy et al. (2012) used the XKURY as a measurement to analyze the relationship between CSR and financial performance in Turkey. Additionally, Saygili et al. (2021) applied the same approach to examine the relationship between Turkish companies' ESG practices and financial performance. Thus, the XKURY is deemed to be a suitable database for use in Turkish CSP research.

**Table 1.** Measurement summary of CSP and CFP.

Authors	Year	CSP measure	CFP measure
Albitar et al.	2020	Bloomberg	Tobin's $q$
Akben-Selcuk	2019	XKURY	ROA
Awaysheh et al.	2020	KLD	Tobin's $q$
Barnett and Salomon	2012	KLD	ROA
Lahouel et al.	2021	Asset4	Tobin's $q$
Saygili et al.	2021	XKURY	ROA, Tobin's $q$
Ting et al.	2020	Asset4	ROE, Tobin's $q$

For examining CFP, most studies have adopted return on assets (ROA) and Tobin's  $q$  to measure enterprises' financial performance (Albitar et al., 2020; Li et al., 2020; Ting et al., 2020). According to Servaes and Tamayo (2013), accounting-based measures reflect firms' short-term financial stance, whereas market-based measures indicate firms' long-term performance. The ROA reveals how efficiently a firm uses its asset base to generate profits (Servaes and Tamayo, 2013), and Tobin's  $q$  describes the ratio of a firm's market value of assets to their replacement costs (Lahouel et al., 2021), which could reflect enterprises' financial performance (Nyeadi et al., 2018). Therefore, existing studies have used the aforementioned measurement to investigate the relationship between CSR and CFP (see Table 1 for a summary of these measures).

## 2.2. CSP and CFP

The relationship between CSP and CFP is an important research theme (Marti et al., 2015). Given that CFP has traditionally been an essential corporate objective, when a positive association is uncovered, corporations will be more eager to allocate scarce and valuable firm resources to support CSR activities. On the contrary, when a negative or neutral association is unveiled, firms will be less attentive to stakeholders' pressures, subsequently investing less in CSR initiatives (Adegbite et al., 2019). Moskowitz (1972) indicated that social responsibility, such as well pollution control, is often considered an aspect of performance by enterprises with superior financial performance and could enhance corporate operations (Bragdon and Marlin, 1972). With the rise of CSR practices, the advantages of enterprise operations that may help enterprises in achieving long-term financial development targets more easily, have become quite prominent (Preston and O'Bannon, 1997). Improved CSR practices regarding employees, products, and services could reduce employee turnover and maintain corporate reputation (Chen et al., 2019). For example, increasing concerns regarding employees' safety and welfare could enhance loyalty, and environmental initiatives to reduce pollution are likely to reduce operation cost through lowered consumption of energy and materials (Wagner, 2010). Ting et al. (2020) argued that investors believe CSP represents the potential sustainable development of enterprise. Stakeholders, such as community, customers, and employees, are crucial to enterprises' sustainability and can affect business operations (Ting et al., 2020). CSP not only represents added value to shareholders (Hillman and Keim, 2001) but also improves investors' valuation through better impressions that lead to high profit returns (Ting et al., 2020). Moreover, previous evidence supports the aforementioned arguments. Marti et al. (2015) analyzed whether CSP has a positive impact on the CFP of 153 firms listed in the Europe Sustainability Index. The findings revealed that CSP influences CFP significantly and positively. Ting et al. (2020) investigated 4,886 firms from emerging and developed economies, demonstrating a positive relationship between CSP and CFP. Şimşek and Öztürk (2021) investigated Istanbul province, finding that environmental accounting positively affects business performance.

In contrast, based on managerial opportunism (Preston and O'Bannon, 1997; Bè nabou and Tirole, 2010) and limited strategic resources (Ben Lahouel et al., 2019), the impact of CSP on CFP may also be negative. A manager's remuneration is generally associated with CFP, which may cause managers to focus more on short-term financial performance (Bai and Elyasiani, 2013). On the contrary, Moskowitz (1972) argued that CSR investment is not worth the investment for corporations because the cost of CSR practices increase financial burden on enterprises (López et al., 2007), and the returns do not compensate for the expenses (Makni et al., 2009). Thus, the relationship between CSP and CFP could also be negative. López et al. (2007) investigated the Dow Jones Sustainability Index, revealing that CSP negatively affects CFP. An examination of Canadian firms' data by Makni et al. (2009) revealed a negative relationship between CSP and CFP. In addition, Martínez-Ferrero and Frías-Aceituno's (2015) study in Germany suggests a negative impact of CSP on CFP. Further studies indicate an insignificant relationship between CSR and CFP (Resmi et al., 2018; Menezes, 2019).

Considering stakeholders' influence, the work of Ting et al. (2020) and Chen et al. (2019) is referenced by assuming that although no mandatory CSR policy exists in Turkey, enterprises with better CSP could reduce business operating cost and increase investors' valuation, which may further improve enterprises' CFP. Thus, the following hypotheses are proposed:

H1: CSP positively affects CFP.

H1a: CSP positively affects financial performance when measured as ROA.

H1b: CSP positively affects financial performance when measured as Tobin's  $q$ .

In addition, existing literature suggested that owing to the high financial cost of CSR, CSP may not promote CFP in the short term; however, such investments can serve as long-term strategic resource and strengthen enterprise's competition, benefiting long-term firm value (Barauskaite and Streimikiene, 2021). Therefore, it is assumed that CSP may enhance CFP in Turkey in the long term. Thus, the following hypothesis is proposed:

H2: CSP positively affects CFP in the long term.

### 3. Data and methodology

#### 3.1. Sample and data

This study refers to Akben-Selcuk (2019) and Saygili et al (2021), selecting enterprises from the XKURY index as the sample. The research data period is 2014–2018, and the data are collected from financial information, such as annual reports and official financial statements, of the sample and XKURY. After excluding samples missing data, 47 samples and 233 observations were screened (see Appendix Table A for the sample constituents).

#### 3.2. Variables of interest

##### 3.2.1. Corporate social performance

The measurements from XKURY scores used by Akben-Selcuk (2019) and Saygili et al. (2021) were employed to measure the CSP of Turkish enterprises.

##### 3.2.2. Corporate financial performance

As the measurement of Turkish enterprises' CFP, the approach of Saygili et al. (2021) was applied, selecting ROA ( $ROA$ ) and Tobin's  $q$  ( $Tobin's\ q$ ). For the ROA, Servaes and Tamayo (2013) are referenced, delineating the ROA of a firm  $i$  at time period  $t$ , which is formulated as follows:

$$ROA_{it} = \frac{Operating\ Income_{it}}{Total\ Assets_{it}}, \quad i = 1,2,3, \dots, 47 \ \& \ t = 2014 - 2018 \quad (1)$$

Lahouel et al. (2021) are followed, using Tobin's  $q$  as the market-based measure of CFP. Tobin's  $q$  is defined as the ratio of a firm's market value of assets to their replacement costs (Lahouel et al., 2021). Practically, the formula proposed by Chung and Pruitt (1994) is used, which is as follows:

$$Approximate\ q = \frac{(MV+PS+DEBT)}{TA} \quad (2)$$

where  $MV$  denotes the market value of the common stock, which is measured as the product of price per share and number of outstanding shares.  $PS$  denotes the liquidating value of a firm's outstanding preferred stock.  $DEBT$  denotes the value of a firm's short-term liabilities, net of the firm's short-term assets, and the book value of a firm's long-term debt.  $TA$  denotes the book value of a firm's total assets. In line with the simplification of Chung and Pruitt (1994) and following Schreck (2011), Tobin's  $q$  is formulated as follows:

$$\text{Tobin's } q_{it} = \frac{(TA_{it} - EQ_{it} - DEF_{it} + MV_{it})}{TA_{it}} \quad (3)$$

The market value of assets is proxied by the book value of assets minus the book value of owners' equity minus deferred taxes, plus the market value of a given firm's common stock. Book values are obtained from financial statements of select constituents, as they are publicly available at fiscal year-end. The market value of a given firm's common stock is calculated as a firm's number of outstanding shares multiplied by closing price (which is adjusted for both stock splits and dividends) of a firm's share on the last trading day of the given year. The data as to the number of outstanding shares for a given year is readily available in a given firm's fiscal year-end financial statement and annual reports.

### 3.3. Control variables

This study referred to Surroca et al. (2010), Shahzad and Sharfman (2017), and Junaid et al. (2020), to select firm size (*Size*), systematic risk (*Beta*), leverage (*Leverage*), R&D intensity (*R&D*), and missing R&D intensity (*R&D Missing*) as control variables. First, the approach of Surroca et al. (2010) was employed to control firm size, which was measured by the natural logarithm of total employees. Second, Lahouel et al. (2021) were referred to control systematic risk using a market model beta. Third, Junaid et al.'s (2020) approach was applied to control leverage, using the ratio of total debt to total assets. Fourth, Shahzad and Sharfman's (2017) approach was applied to measure R&D intensity as R&D expenses to total sales. Additionally, Shahzad and Sharfman (2017) were followed to measure missing R&D intensity as another control variable, which was assigned a value of 1 if the missing values of R&D intensity was filled, otherwise 0. Finally, Surroca et al.'s (2010) and Shahzad and Sharfman's (2017) approaches were applied in the regression models to control for industry and year effects. Industry was controlled by introducing six dummy variables to distinguish seven industries along with four years dummies to capture the five years examined in this study. Year dummies will be retained in regressions if the joint test of significance on their estimated coefficients yields so through F-test.

### 3.4. Model specification

Ordinary least squares (OLS) was applied to examine the relationship between CSP and CFP using the following model:

$$CFP_{it} = \beta_0 + \beta_1 CSP_{it} + \beta_2 Size_{it} + \beta_3 Beta_{it} + \beta_4 Leverage_{it} + \beta_5 R\&D_{it} + \beta_6 R\&DMissing_{it} \dots \dots \beta_{12} (Industry_j) + \beta_{13} - \beta_{16} (Year\ Dummies) + V_{it} \quad (4)$$

where  $CFP_{it}$  = ROA and the Tobin's  $q$  of firm  $i$  in time  $t$ ,  $CSP_{it}$  = Social performance of firm  $i$  in time  $t$ ,  $Size_{it}$  = Total number of employees of firm  $i$  in time  $t$  (in natural logarithm form),  $Beta_{it}$  = market model beta (systematic risk of firm  $i$  in time  $t$ ),  $Leverage_{it}$  = Total debt to total assets of firm  $i$  in time  $t$ ,  $R\&D_{it}$  = R&D expenditures over sales of firm  $i$  in time  $t$ ,  $Industry_j = 7$  time-invariant<sup>1</sup> indicator variables,  $i = 1, 2, \dots, 47$  firms,  $t = 2014-2018$ ,  $j = 1, 2, \dots, 7$  industries, Year Dummies = Set of time dummies with year 2014 as the base,  $\beta_0$  is constant, and  $V_{it}$  is the random regression error term.

<sup>1</sup> None of the sample constituents changed the industry to which they belong during the sample period, and the manufacturing industry was used as the reference level.

For the pooled OLS (POLS) estimation of Equation (4) to yield consistent parameter estimates, the error term must be assumed as uncorrelated with explanatory variables in all time periods. However, if the random error term  $V_{it}$  is considered having two parts;  $V_{it} = a_i + \mu_{it}$ , wherein  $a_i$  is a time-constant component capturing all firm-specific characteristics that do not change over time, and  $\mu_{it}$  is a time-varying component representing unobserved factors that change over time and affect the dependent variable, CFP, then the assumption of no correlation would be violated if the time-invariant component is correlated with the explanatory variables, even if the time-varying part is not. Because POLS considers sample constituents as homogenous, thereby leaving  $a_i$  into the error term, the resulting coefficient estimates would be biased, which is referred to as unobserved heterogeneity (Wooldridge, 2013). Additionally, despite assuming that  $a_i$  is uncorrelated with included regressors in all time periods, POLS standard errors would still be incorrect because they might exhibit serial correlation owing to the exclusion of firm-specific characteristics,  $a_i$ .

To decide between POLS and random effects estimation, the Breusch and Pagan (1980) Lagrange multiplier test (LM) for random effects was conducted. The results of the Breusch and Pagan LM test for the model that takes Tobin's  $q$  as the dependent variable revealed the existence of statistically significant individual differences (Chi-square (1) = 49.71; p-value = 0.000) and ROA as the dependent variable also reveals statistically significant random individual differences among sample constituents (Chi-square (1) = 125.73; p-value = 0.000). Hence, the null hypothesis of no random individual heterogeneity is strongly rejected in favor of the alternative hypothesis for both models. Consequently, Equation (4) takes the following form:

$$CFP_{it} = \beta_0 + \beta_1 CSP_{it} + \beta_2 Size_{it} + \beta_3 Beta_{it} + \beta_4 Leverage_{it} + \beta_5 R\&D_{it} + \beta_6 R\&DMissing_{it} \dots \dots \beta_{12}(Industry_j) + \beta_{13} - \beta_{16}(Year\ Dummies) + \alpha_i + \mu_{it} \quad (5)$$

where  $a_i$  represents the random individual differences within the random effects model framework and  $\mu_{it}$  represents the time-varying error term. Random individual differences are assumed to be uncorrelated with the explanatory variables included. This assumption is the key assumption that distinguishes the random effects model from the fixed effects model.

A formal test approach proposed by Hausman (1978) is used to choose between random effects and fixed effects specifications. Application of the test to the model that takes Tobin's  $q$  as the dependent variable exhibits the calculated value of the chi-square statistic of 7.63 with an associated p-value of 0.572. Consequently, the null hypothesis of no statistically significant differences between fixed and random effects estimates cannot be rejected. However, the test result also comes with a caution that the covariance matrix of differences between random and fixed effects estimates is not positive definite. Furthermore, the application of the test to the model that incorporates ROA as the dependent variable includes the same caution. Moreover, this is the case with Garcia-Castro et al. (2010). Fortunately, there is an alternative approach to choose between random effects and fixed effects specifications that is based on the idea that testing to choose between random and fixed effects specifications can also be considered a test of overidentifying restrictions. The fixed effects estimator uses the orthogonality condition that  $\mu_{it}$  is uncorrelated with the explanatory variables in all time periods, which is the strict exogeneity assumption, whereas the random effects estimator uses the orthogonality condition that random effects,  $a_i$ , are uncorrelated to the explanatory variables in addition to a strict exogeneity assumption. These orthogonality conditions are overidentifying restrictions and the test, which is based on the artificial regression approach suggested by Wooldridge (2010), wherein a random effects estimation is performed, augmented with additional explanatory variables in their deviations from individual means form. The test statistic, which is a Wald test of significance of the



variables incorporated as deviations from their corresponding means form, can be easily implemented through the Stata command *xtoverid* proposed by Schaffer and Stillman (2006). The test can be extended to elicit panel-robust standard errors accounting for heteroskedasticity and serial correlation in errors (Brunow and Nijkamp, 2018). Although this alternative panel-robust version of the Hausman test does not necessarily have better finite sample properties than those of the standard Hausman test, it has the advantage of being more computationally stable because it does not face challenges of non-positive definite matrices (Hoechle, 2007). Under the null hypothesis, coefficients of additionally incorporated time-demeaned variables are jointly equal to zero. This means that the random effects specification is appropriate if the null hypothesis is valid.

Results for the model with ROA as the dependent variable fail to reject the null hypothesis (Sargan-Hansen statistic=7.302; p-value=0.1991); consequently, random effects specification is chosen for ROA. Meanwhile, for the model with Tobin's *q* as the dependent variable, the results strongly reject the null hypothesis and provide evidence in favor of fixed effects specification (Sargan-Hansen statistic=16.984; p-value=0.0045). Hence, the aforementioned Equation (5) takes the following form for the ROA as the dependent variable:

$$ROA_{it} = \beta_0 + \beta_1 CSP_{it} + \beta_2 Size_{it} + \beta_3 Beta_{it} + \beta_4 Leverage_{it} + \beta_5 R\&D_{it} + \beta_6 R\&DMissing_{it} \dots \dots \beta_{12}(Industry_j) + \beta_{13} - \beta_{16}(Year\ Dummies) + \alpha_i + \mu_{it} \quad (6)$$

where  $\alpha_i$  represents random individual differences among select firms and  $\mu_{it}$  is the time-varying error term.

Since industry debt ratios are also related to corporate market value (Hatfield et al., 1994), Equation (5) takes the following form for Tobin's *q* as the dependent variable:

$$Tobin's\ q_{it} = \beta_0 + \beta_1 CSP_{it} + \beta_2 Size_{it} + \beta_3 Beta_{it} + \beta_4 Leverage_{it} + \beta_5 R\&D_{it} + \beta_6 Leverage\_sq_{it} \dots \dots \beta_{12}(Industry_j) + \beta_{13} - \beta_{16}(Year\ Dummies) + \alpha_{it} + \mu_{it} \quad (7)$$

where  $\alpha_{it}$  denotes fixed effects capturing firm-specific time-constant characteristics,  $\mu_{it}$  is the time-varying error term, and *Leverage\_sq* denotes industry debt ratios.

Considering the endogeneity issue of causal relationship between CSP and CFP, Lahouel et al. (2021) are followed by establishing a dynamic panel data model to clarify such issues and provide robust, non-biased results. Extant literature suggest that CSP has temporal dependence (Lahouel et al., 2021; Ting et al., 2020), and industry debt ratios are also related to corporate market value (Hatfield et al., 1994). Therefore, based on Equation (5), the data for the prior year's CSP, R&D intensity, missing R&D intensity, and industry debt ratios are combined in the following dynamic models:

$$CFP_{it} = \beta_0 + \beta_1 LaggedCSP_{it} + \beta_2 Size_{it} + \beta_3 Beta_{it} + \beta_4 Leverage_{it} + \beta_5 LaggedR\&D_{it} + \beta_6 LaggedR\&DMissing_{it} \dots \dots \beta_{12}(Industry_j) + \beta_{13} - \beta_{16}(Year\ Dummies) + \alpha_i + \mu_{it} \quad (8)$$

$$CFP_{it} = \beta_0 + \beta_1 LaggedCSP_{it} + \beta_2 Size_{it} + \beta_3 Beta_{it} + \beta_4 Leverage_{it} + \beta_5 LaggedR\&D_{it} + \beta_6 Leverage\_sq_{it} \dots \dots \beta_{12}(Industry_j) + \beta_{13} - \beta_{16}(Year\ Dummies) + \alpha_i + \mu_{it} \quad (9)$$

where *LaggedCSP* refers to the prior year's CSP, *LaggedR&D* refers to the prior year's R&D intensity, *LaggedR&DMissing* refers to the prior year's missing R&D intensity, and *Leverage\_sq* refers to the prior year's industry debt ratios.

## 4. Results

### 4.1. Descriptive statistics and correlation analysis

Table 2 presents the results of variable statistics. The variable names are listed in column 1, followed by a number of observations and descriptive statistics (mean, standard deviation, min, and max). As Table 2 demonstrates, the average CSP is 9.39, and the average CFP is ROA of 0.06 and 1.15 for Tobin's  $q$ . Concerning the control variables, the average value of Beta is 0.80, Leverage is 0.64, Size is 7.56, R&D is 0.01, and 0.57 for missing R&D.

**Table 2.** Descriptive statistics.

Variable	N	Mean	Std. Dev.	Min	Max
CSP	223	9.39	0.59	6.84	9.95
Tobin's $q$	223	1.15	0.67	0.34	5.73
ROA	223	0.06	0.06	-0.1	0.31
Beta	223	0.80	0.33	0.06	1.72
Leverage	223	0.64	0.42	0.01	3.58
Size	223	7.56	2.19	1.39	10.45
R&D	223	0.01	0.04	0	0.31
R&D Missing	223	0.57	0.50	0	1

**Table 3.** Pearson's correlation.

Variables	CSP	Tobin's $q$	ROA	Beta	Leverage	Size	R&D	R&D Missing
CSP	1.00							
Tobin's $q$	0.20***	1.00						
ROA	0.28***	0.52***	1.00					
Beta	0.06	-0.11*	-0.22***	1.00				
Leverage	-0.22***	0.01	-0.09	0.16**	1.00			
Size	0.27***	0.05	-0.04	0.36***	0.01	1.00		
R&D	0.06	0.75***	0.28***	-0.11*	-0.07	-0.05	1.00	
R&D Missing	-0.05	-0.25***	-0.32***	0.10	0.17**	-0.23***	-0.25***	1.00

Note: \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 3 presents the Pearson's correlation, in which the correlation coefficient between CSP and Tobin's  $q$  and CSP and ROA are positive at 1% significance level, indicating that, in Turkey, enterprises with high CSP also demonstrate superior CFP. The correlation coefficient between Leverage and CSP is negative at 1% significance level, indicating that enterprises with high debt show lower levels of CSP. The correlation coefficient between Size and CSP is positive at 1% significance level. This indicates that large firm size enterprises always demonstrate superior CSP. Furthermore, there are some positive or negative correlation coefficients between other variables at different significance levels, suggesting that these variables affect each other differently. Moreover, all correlation coefficients are lower than 0.8, meeting Gujarati's (1995) proposal for avoiding multicollinearity. In addition, the variance inflation factor (VIF) is calculated for all variables in each model. The results indicate the

highest VIF of 2.28 and the lowest VIF of 1.25. Considering the correlation coefficients and VIF, the regression models displayed no issues of multicollinearity.

#### 4.2. Regression results

Stata 13 is used to empirically test the hypotheses. Table 4 reports the results as to POLS and random effects estimations on Equation (6), with ROA as the dependent variable and different covariance matrix estimators. Different estimators present differences in terms of the size and significance level associated with the estimated coefficients of the regressors included. When residuals are corrected for group-wise heteroskedasticity and serial correlation and cross-sectional dependence using Driscoll and Kraay's (1998) covariance matrix estimator, as suggested by Hoechle (2007), CSP is found to have a statistically significant and positive effect on ROA ( $p < 0.05$ ). This suggests that CSP positively affects ROA in Turkey. Similarly, Akben-Selcuk (2019) demonstrated a positive relationship between CSR and ROA. This result further supports argument that CSR could reduce operating cost (Chen et al., 2019) and increase firm valuation (Ting et al., 2020), confirming that better CSP could lead to better CFP (ROA). This is consistent with our hypothesis; thus, H1a is supported.

**Table 4.** POLS & random effects (ROA).

	POLS	RE	RE w/Panel-Robust Bootstrap SEs	RE w/Driscoll and Kraay SEs
CSP	0.034*** (4.78)	0.026*** (2.90)	0.026*** (2.74)	0.026** (3.30)
Beta	-0.028** (-2.18)	-0.009 (-0.75)	-0.009 (-0.95)	-0.009 (-0.73)
Leverage	0.007 (0.72)	0.003 (0.24)	0.003 (0.19)	0.003 (0.32)
Size	-0.007*** (-3.16)	-0.008*** (-2.70)	-0.008*** (-2.82)	-0.008* (-2.57)
R&D	0.238* (1.89)	0.194 (0.89)	0.194 (0.78)	0.194 (0.70)
R&D Missing	-0.045*** (-4.56)	-0.045** (-2.51)	-0.045*** (-6.65)	-0.045 (-2.09)
Constant	-0.182*** (-2.84)	-0.101 (-1.22)	-0.101 (-1.18)	-0.101 (-1.89)
N	223	223	223	223
R <sup>2</sup>	0.34	0.33	0.33	0.33
Adjusted R <sup>2</sup>	0.29			
Wald $\chi^2$		34.23***	126.74***	410.80***
Time Dummies	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes

Note: \*, \*\*, and \*\*\* denote statistical significance at 10%, 5% and 1%, respectively.

Table 5 presents the POLS and fixed effects estimations on Tobin's  $q$  as the dependent variable with different covariance matrix estimators. The different estimators yield differences in terms of the magnitude and significance of the estimated coefficients of the regressors included. Evident from the last column, wherein fixed effects estimation using Driscoll and Kraay's (1998) covariance matrix estimator as suggested by Hoechle (2007) to correct misspecifications in residuals, CSP is found to positively and significantly ( $p < 0.10$ ) influence Tobin's  $q$ . This result is similar to Albitar et al.'s (2020) result, which indicates a positive relationship between ESG disclosure on Tobin's  $q$ . Moreover, comparable results reveal that CSP positively affects Tobin's  $q$  (Lahouel et al., 2021). These results indicate that CFP (Tobin's  $q$ ) could be enhanced by CSP in Turkey. This is consistent with our hypothesis; thus, H1b is supported.

**Table 5.** POLS and fixed effects (Tobin's  $q$ ).

	POLS	POLS	FE	FE w/Cluster-Robust SEs	FE w/Driscoll and Kraay SEs
CSP	0.218*** (3.92)	0.237*** (4.31)	0.180 (1.60)	0.180 (1.43)	0.180* (2.66)
Beta	-0.148 (-1.49)	-0.148 (-1.51)	-0.103 (-0.83)	-0.103 (-0.69)	-0.103 (-0.81)
Leverage	0.231*** (3.20)	0.718*** (3.86)	0.612 (1.46)	0.612 (1.42)	0.612** (2.87)
Size	0.003 (0.18)	-0.023 (-1.25)	-0.196** (-2.31)	-0.196 (-1.56)	-0.196*** (-10.98)
R&D	9.987*** (10.04)	9.813*** (10.01)	13.636** (2.54)	13.636 (1.23)	13.636 (1.70)
Leverage_sq		-0.163*** (-2.83)	-0.126 (-1.35)	-0.126 (-1.53)	-0.126** (-3.32)
Constant	-0.889* (-1.76)	-1.069** (-2.13)	0.699 (0.62)	0.699 (0.77)	0.699 (1.13)
N	223	223	223	223	223
$R^2$	0.66	0.68	0.21	0.21	0.21
Adjusted $R^2$	0.64	0.65			
Corr ( $u_i, x_b$ )			-0.54	-0.54	
Time Dummies	Yes	Yes	Yes	Yes	Yes
Industry Dummies	No	No	No	No	No

Note: \*, \*\*, and \*\*\* denote statistical significance at 10%, 5% and 1%, respectively. Corr ( $u_i, x_b$ ) denotes the magnitude of the correlation between fixed effects and included regressors.

Table 6 displays the results of random and fixed effects estimations using Driscoll and Kraay's (1998) covariance matrix estimator on the dynamic models with CSP lagged by one period preceding both CFP measures as the independent variable, as well as control variables and indicators for time

and industry. Lagged CSP positively impacts CFP, thereby indicating that CSP could positively impact CFP in the long term in Turkey. This result supports Barauskaite and Streimikiene's (2021) argument, that is, CSP could add firm value in the long term as a strategic resource by the increase of enterprises' competitive power. This is consistent with our hypothesis; thus, H2 is supported.

**Table 6.** Results of dynamic models with lagged CSP and R&D.

	Random Effects w/Driscoll and Kraay Standard Errors	Fixed Effects w/Driscoll and Kraay Standard Errors
Lagged CSP	0.021** (3.55)	0.138** (4.73)
Beta	-0.015 (-1.54)	0.013 (0.19)
Leverage	0.002 (0.17)	0.801** (4.08)
Size	-0.007* (-2.46)	-0.209* (-2.77)
Lagged R&D	0.214 (0.76)	32.281* (2.59)
LaggedR&DMissing	-0.050** (-4.64)	
Leverage_sq		-0.140** (-3.66)
Constant	-0.050 (-0.80)	0.530 (0.73)
N	176	176
R <sup>2</sup> <i>within</i>		0.37
R <sup>2</sup> <i>overall</i>	0.32	
Wald $\chi^2$	1730.98***	
Time Dummies	Yes	Yes
Industry Dummies	Yes	No

Note: \*, \*\*, and \*\*\* denote statistical significance at 10%, 5% and 1%, respectively.

#### 4.3. Robustness test

This study followed the approach of Shahzad and Sharfman (2017), which is based on heteroskedasticity and cross-sectional dependence robust panel-corrected bootstrap standard errors. Return on equity (*ROE*) is used to replace ROA, and market book value (*MTB*) to replace Tobin's *q* as dependent variables in the models for the robustness test. Table 7 presents the results, which indicate that both CSP and lagged CSP positively affect CFP, revealing that both H1 and H2 passed the robustness test.

**Table 7. Robustness test.**

	ROE	ROE	MTB	MTB
CSP	0.073*** (4.49)		0.837*** (5.51)	
Lagged CSP		0.061*** (3.50)		0.810*** (4.55)
Beta	-0.052** (-2.17)	-0.073** (-2.34)	-0.441* (-1.66)	-0.588** (-1.97)
Leverage	0.081*** (2.72)	0.085** (2.22)	1.009** (2.22)	1.138** (2.11)
Size	0.005 (0.97)	0.008 (1.33)	-0.009 (-0.17)	-0.008 (-0.14)
R&D	0.572 (0.80)		19.60 (1.61)	
Lagged R&D		0.466 (0.37)		16.44 (0.51)
R&DMissing	-0.110*** (-4.26)		-0.709*** (-2.83)	
LaggedR&DMissing		-0.128*** (-4.05)		-0.833** (-2.52)
N	223	176	223	176
$R^2$ overall	0.38	0.38	0.46	0.44
Wald $\chi^2$	123.6***	89.41***	91.99***	57.19***
Time Dummies	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes

Note: \*, \*\*, and \*\*\* denote statistical significance at 10%, 5% and 1%, respectively.

## 5. Discussions and conclusions

The relationship between CSP and CFP in emerging economies has attracted considerable academic attention; however, the empirical evidence on Turkey has remained inconsistent. Therefore, the relationship between CSP and CFP was theoretically discussed, and empirical evaluations to test that relationship used Turkish enterprise data from the XKURY index.

This investigation found some valuable results. First, CSP enhances enterprises' CFP in Turkey (H1a and H1b). This result confirms that in the Turkish context, enterprises' financial performance could be promoted by stakeholders' growing concerns. This is because CSR practices applied to labor could reduce corporate employee turnover, and responsible production practices could reduce operating cost and maintain corporate reputation (Chen et al., 2019). Although the results are inconsistent with Arsoy et al.'s (2012) argument of Turkish enterprises' CSR as determined by financial performance, increasing stakeholder concern could result in a better impression for investors, which will efficiently increase the valuation of an enterprise (Ting et al., 2020). This may reduce the corporate capital cost and increase

returns from the capital market; consequently, CFP would be enhanced. Second, CSP also promotes Turkish enterprises' CFP in the long term (H2). This confirms that responsiveness to increased stakeholder concern can present an efficient way to maintain the long-term sustainable development of CFP. Enterprises' attention to social issues can improve public recognition (De Villiers and Van Staden, 2006) and stakeholders' trust (Odriozola and Baraibar-Diez, 2017), enhancing enterprises' long-term competitive advantage (Barauskaite and Streimikiene, 2021). Usually, the stock market value of a listed company is determined by enterprises' past decisions (Barauskaite and Streimikiene, 2021), and investors are also concerned with enterprises' social expenditures while determining valuation (Awaysheh et al., 2020). This could also lead to enterprises' increased earnings return per share (Zakari, 2017). Therefore, with enhanced stakeholders' trust and higher investor valuation, enterprises' CSP can support long-term financial performance in Turkey.

Furthermore, this study offers theoretical and practical contributions. Theoretically, since the relationship between CSP and CFP in Turkey is not uniform, it was reinvestigated from the perspective of stakeholder theory, revealing the positive influence of CSP in promoting CFP among stakeholders in Turkey. Particularly, this research explains the influence of CSR in promoting stakeholder confidence and investor decision making for long-term financial performance. This study expanded the application of stakeholder theory in the CSR and CFP research field in the context of Turkey.

Practically, our findings offer suggestions to Turkish policymakers and enterprises based on the positive role of CSP in short- and long-term financial performance. For the policymakers, as an emerging economy, economic development has long been the primary goal in Turkey. Policymakers should pay attention to CSR while formulating economic development regulations to maximize the positive role of CSR in promoting CFP and achieve long-term, sustainable economic development. Enterprises should better understand the role of CSR in earning and retaining stakeholders' trust and improving investors' valuation to maximize the positive impact of CSR on improving competitiveness and profitability and to achieve stable development of long-term corporate performance.

As for the limitations of this research and the potential direction of future studies, owing to the scale of Turkish enterprises and the unique context of Turkey, the small sample size limited this study. Enterprises in Turkey cannot be compared with the scale of large global enterprises; therefore, Turkish data are not available in Asset4 or KLD. The only available database for Turkish CSP is the XKURY index, and only 47 samples (period 2014–2018) were available following the screening from XKURY. Therefore, future studies could extend the sample size by manually measuring Turkish enterprises' CSR reports. This would improve the reliability of the results and provide more potential topics for future research.

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## Conflict of interest

The authors declare no conflicts of interest in this paper.

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