

Examining CSR's Financial Impact: The Moderating Roles of Audit Quality, Leverage, and Industry Sector in Saudi Firms Listed on Tadawul

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Abstract

This study investigates the impact of Corporate Social Responsibility (CSR) on financial performance for non-financial firms listed on the Saudi Stock Exchange (Tadawul) from 2016 to 2022, focusing on the moderating roles of leverage, audit quality, and industry sector. Using System GMM and performance indicators like ROA, ROE, and Tobin's Q, we find that CSR has a short-term direct negative effect on financial performance but positively contributes to long-term value, enhancing market-based indicators. Audit quality strengthens the CSR-performance link, while leverage negatively affects short-term performance, although it can improve long-term performance when coupled with social disclosures. The impact of CSR varies across industries, with stronger effects in regulated and consumer-centric industries, but less significant in capital-intensive and less regulated industries. These empirical findings highlight the industry-specific nature of the CSR-financial performance relationship in emerging markets.

Keywords

Corporate Social Responsibility, Corporate Performance, Leverage, Audit Quality, Industry Sector, GMM, Moderator Effect, Saudi Companies

1. Introduction

Corporate Social Responsibility (CSR) refers to a company's voluntary commitment to go beyond legal obligations and align its operations with societal expect-

tations of ethical and responsible behavior. It encompasses various initiatives, including environmental sustainability, ethical sourcing, stakeholder engagement, fair labor practices, strong governance, and anti-corruption efforts. These practices not only help businesses enhance their reputation and comply with regulations but also foster positive contributions to society and the environment.

In Saudi Arabia, Corporate Social Responsibility (CSR) is deeply rooted in Islamic principles, particularly in charitable giving and the practice of Zakat. With the launch of Vision 2030, CSR has transitioned into a strategic approach aligned with national sustainability goals. Saudi companies are increasingly integrating CSR initiatives to strengthen their competitive edge, enhance product quality, build consumer trust, and support broader social and economic objectives. These efforts play a crucial role in advancing sustainability and boosting corporate financial performance.

Saudi Vision 2030 provides a unique institutional framework that shapes the CSR-performance relationship in ways that differ from other emerging markets. Unlike many developing economies where CSR practices remain largely voluntary or externally driven, Saudi Arabia's Vision 2030 embeds social responsibility within the national transformation agenda. The initiative promotes transparency, governance reform, and private-sector engagement in sustainable development through policies such as the National Transformation Program (NTP), the Saudi Green Initiative, and the Social Responsibility Strategy launched by the Ministry of Human Resources and Social Development. These frameworks incentivize firms to integrate CSR into their core strategies, linking social engagement to competitiveness, investment attractiveness, and access to government partnerships. Consequently, CSR in Saudi Arabia functions not merely as a reputational tool but as a strategic mechanism aligned with state-led modernization objectives—a dynamic that may strengthen its impact on financial performance compared to other emerging economies with weaker institutional or policy support.

While CSR encompasses a wide range of social, ethical, and environmental initiatives that reflect a company's commitment to societal well-being, sustainability specifically targets practices that preserve environmental health and ensure the long-term availability of resources. As a subset of CSR, sustainability has a more focused environmental perspective, whereas CSR extends beyond environmental concerns to include broader social and ethical responsibilities.

Previous research has rarely examined more than one measure of CSR in this context. Therefore, this paper will attempt to fill the gap in the literature by providing valuable insight into the effect of corporate social responsibility on corporate financial performance of firms listed on the Saudi Stock Exchange. Moreover, in the Saudi context, this paper examines the impact of CSR, using an index for companies addressing the sustainable development goals in their sustainability report, and the amount of zakat, on financial performance. Thus, the present study provides a significant contribution to the recent empirical CSR literature in emerging markets by capturing the maximum of the efforts made by Saudi com-

panies in terms of corporate sustainability with the introduction of Vision 2030.

The objective of this paper therefore is double. First, it will provide useful insight on how a religious (Islamic) dimension, such as Zakat, as part of their religious and social commitments, contributes to CSR and firm performance. We believe that it will provide precious guiding principle and implications not only for companies, but also for regulators, academics and other stakeholders and will also enable comparison with other countries where firms pay Zakat as part of their religious and social commitments. Second, this paper will investigate empirically the role of moderator factors in the relationship between CSR practices and financial performance, focusing on audit quality, leverage, and industry sector characteristics.

The paper is organized as follows: Section 1, presenting the literature review and hypothesis development, outlines the proposed relationships between the study variables. Section 2 describes the research methodology. Section 3 shows the empirical findings and the interpretations. Finally, Section 4 summarizes the most important results and offers suggestions for future research directions.

2. Literature Review and Hypothesis Development

The relationship between CSR and financial performance has been widely examined in academic and business literature. Scholars have explored whether engaging in socially responsible practices benefits firms financially or if it incurs extra costs that might detract from profitability. Here's a review of the literature, covering various theoretical perspectives, empirical findings and factors influencing this relationship.

2.1. Theoretical Foundations of the CSR-Financial Performance Relationship

Stakeholder Theory (Freeman, 1984) posits that companies have responsibilities beyond maximizing shareholder value; they must consider the interests of all stakeholders, including employees, customers, suppliers, and the community. Meeting these responsibilities can improve financial performance by fostering goodwill, loyalty, and trust from these groups, which could ultimately lead to higher revenues.

According to signaling theory, CSR activities act as positive signals to investors, customers, and other stakeholders, indicating a firm's commitment to ethical practices. This signaling can enhance a firm's reputation and brand equity, attracting loyal customers and talented employees, which may enhance financial performance (Luo & Bhattacharya, 2006; Wu & Shen, 2013)

Some researchers (Friedman, 1970; Wang & Qian, 2011), however, argue that CSR can detract from financial performance because it diverts resources away from core business activities. Consistent with agency theory, if management invests too much in CSR without a clear link to core objectives, it may undermine financial goals. Yet, recent work suggests that aligning CSR with business strategy may mitigate these agency costs.

2.1.1. CSR and Financial Performance: Evidence of a Positive Relationship

Numerous studies have supported a positive relationship between CSR and financial performance (Margolis & Walsh, 2003, Orlitzky et al., 2003, Choi et al., 2010) identifying mechanisms through which CSR may benefit firms financially. Consequently, it may realize a greater competitive advantage over other firms. CSR can improve a company's resources in multiple ways, benefiting both tangible and intangible assets:

Employee Attraction and Retention: A socially responsible image makes companies more appealing to prospective employees, giving them access to a broader talent pool and improving workforce quality. CSR can improve job satisfaction and loyalty among employees, who are often drawn to organizations that align with their values. Studies (e.g., Turban & Greening, 1997) have shown that companies with strong CSR practices are more attractive to job seekers, reducing recruitment and training costs and enhancing productivity.

Financial Capital via Investor Attraction: Many studies, as Eccles et al. (2014), Servaes and Tamayo (2013), show that companies with strong sustainability practices—including CSR—attract more long-term investors. The authors argue that CSR enhances a firm's appeal to socially responsible investors, leading to improved financial capital and stability. Positive CSR ratings can lead to better credit ratings and lower financing costs (Dhaliwal et al. 2011, El Ghouli et al., 2011).

Customer Loyalty and Market Positioning: Customers are increasingly likely to support brands that align with their values. Research, as Luo & Bhattacharya (2006), has shown that firms with robust CSR practices often have better reputations, which can enhance customer loyalty. This loyalty can act as a protective resource, helping companies withstand competition and maintain market share.

Improved Operational Efficiency and Cost Savings: Numerous authors, such as Kramer and Porter (2006) and King and Lenox (2001), argue that strategic CSR can reduce costs by improving operational efficiency. CSR-driven improvements, such as waste reduction and efficient energy use, can save the company money and reduce dependency on scarce or costly resources.

Enhanced Brand Reputation and Goodwill: Kramer and Porter (2006) argue that CSR, when strategically aligned with business goals, can improve operational efficiency while strengthening brand reputation and goodwill. They assert that by addressing social issues in ways that create business value, companies build a positive reputation that differentiates them from competitors. This reputation can serve as a buffer, helping them maintain customer and stakeholder trust even during challenging periods. In the same way, Du Bhattacharya and Sen (2010) study, discusses how CSR communication strategies amplify the reputational benefits of CSR. They argue that by communicating CSR efforts effectively, companies can build strong goodwill and reputation. This dual impact of CSR initiatives helps companies build valuable intangible assets that contribute to long-term success.

Strengthened Stakeholder Relationships: Many researchers have highlighted that CSR fosters stronger relationships with stakeholders, including suppliers,

communities, and regulatory bodies (Freeman 1984, Bhattacharya et al., 2009). For example, responsible sourcing practices build trust with suppliers, while community engagement programs create goodwill among local populations. Nurhayati et al., (2022) posit that CSR activities are often a reflection of the broader societal values held by the communities in which firms operate. Companies that operate in harmony with societal norms and values by reducing carbon emissions and improving an environmentally friendly society are perceived as more socially responsible (Yin et al. (2021) as well as Indriastuti and Chariri (2021)). This network of positive stakeholder relationships becomes a valuable resource that can open doors to new partnerships and collaborative opportunities.

Innovation and Knowledge Resources: Several authors (Schaltegger & Wagner, 2011; Kramer & Porter, 2011) have argued that companies with strong CSR programs often develop a culture of innovation as they seek sustainable solutions for their operations. CSR encourages employees and management to think creatively about sustainability, which can drive new ideas, products, and services. This culture of innovation becomes a knowledge resource, enhancing the company's adaptability and long-term competitiveness.

2.1.2. CSR and Financial Performance: Evidence of a Negative or Ambiguous Relationship

While many studies have found a positive relationship, other research suggests that CSR can have a neutral or even negative impact on financial performance under certain conditions:

High Initial Costs: CSR programs often involve significant upfront investment, such as the adoption of green technologies, compliance with stricter regulations, or creating community programs. These investments can strain financial resources in the short term, particularly for smaller firms (Friedman, 1970; Lee et al., 1985). According to Wang and Qian (2011), the costs associated with CSR programs may not always generate sufficient stakeholder value to justify these upfront investments.

Lack of Immediate Returns: The financial returns on CSR investments can take time to materialize, and for firms that are highly focused on short-term results, these delayed returns may appear as a financial drain. According to Barnett and Salomon (2006), the relationship between CSR and financial performance can follow an inverted U-shape, meaning moderate CSR investments yield better results than overly high investments.

Reputational Risks of Greenwashing: Delmas and Burbano (2011) among numerous authors, analyze the factors that lead to greenwashing and argue that the financial performance of companies engaging in CSR can suffer when greenwashing is detected. They suggest that the reputational risks of being perceived as insincere can damage stakeholder trust and lead to financial losses.

According to the literature review, the relationship between CSR and the financial performance is a complex topic, and the results vary depending on the context, methodologies, and specific characteristics of the companies studied. In the

context of our study, it seems more plausible to find a positive relationship. We formulate our first hypothesis as follow:

H1: There is a positive relationship between corporate social responsibility and financial performance.

2.2. Moderating Factors Influencing the CSR-Financial Performance Relationship

The strength and direction of the relationship between CSR and financial performance can vary based on a range of contextual and firm-specific factors as the quality of financial and extra financial disclosure, leverage or industry sector.

Several studies (Hummel & Schlick, 2016; Michelon et al., 2015) have explored the role of the Big Four auditing firms (Deloitte, PwC, EY, and KPMG) as quality indicators in CSR research. These studies often investigate how auditing by these firms affects the credibility and thoroughness of CSR disclosures, influences stakeholder perception and financial outcomes.

Referring to the agency theory (Meckling & Jensen, 1976), auditing is an effective way for reducing information asymmetry, increasing the information credibility by limiting opportunistic behavior and consequently stimulating ESG performance through a good choice of oriented investment (Agyei-Mensah, 2018; Habbash & Alghamdi, 2017). But, the effectiveness of the external auditing must be an audit with quality to avoid a probability of misinterpretation of financial statements (Kausar et al., 2016; Knechel et al., 2013). In fact, audit procedures followed by external high-quality auditors give sufficient guarantee for the users of the financial statements to trust.

Many studies suggest indeed that the involvement of Big Four auditors serves as a moderating factor that strengthens the positive relationship between CSR practices and financial performance by enhancing the credibility, transparency, and perceived reliability of CSR reporting (Cho et al. (2017) across 31 different countries, Zhang et al. (2013) in the United States and Dakhli (2022) in MENA region). However, some researchers have found that the association can be negative under certain conditions, especially if CSR efforts are viewed as excessive or if there is skepticism about the authenticity of the CSR activities (Wang & Qian, 2011). But, the presence of high-quality audit may provide some confidence in the CSR efforts and their positive effect on the firm's performance. Since negative relationship is less common, we formulate the following hypothesis:

H2: High-quality audit moderates positively the relationship between CSR and the corporate performance.

Numerous studies have examined how leverage can impact the relationship between CSR and financial performance, often finding that higher leverage can diminish or weaken this relationship as Brammer and Millington (2008), Lee et al. (2013) and Sila and Cek (2017). Possible explanation is that high leverage increases the financial risk of a company because it may prioritize financial obligations over social or environmental investments, as it might find it more challeng-

ing to access cheaper capital or equity investment. Also, from stakeholders' perception point of view, CSR activities might be considered as a distraction or a signal of poor financial management. It is seen as less of a strategic tool to enhance long-term financial performance. Conversely, companies with low leverage could strengthen the positive relationship between CSR and performance, as firms can more freely allocate resources to socially responsible activities that improve their reputation, reduce risks, or create new business opportunities which in turn might result in lower costs of capital. These firms may be viewed as a strategic initiative that aligns with long-term growth, potentially enhancing both the firms' reputation and financial performance. Nevertheless, [Bae et al. \(2019\)](#) considered that the commitment of high leveraged firms in CSR activities minimizes the loss in market share by increasing the sales growth of firms and compensating the negative effect of the cost of high leverage. We should note however the existence of arguments and some evidence suggesting that leverage can enhance the positive impact of CSR on financial performance under specific conditions like financial distress periods or crises ([Lins, Servaes, & Tamayo, 2017](#)). The explanation put forward by the authors is that CSR builds social capital and trust, which can act as a buffer in periods of uncertainty. In spite of these two opinions, we side with the majority. Our hypothesis is then:

H3: Leverage moderates negatively the relationship between CSR and financial performance.

Other studies found that industry type and regulatory environment play a significant role in moderating the relationship between CSR and financial performance. In sectors like energy, mining, manufacturing, and chemicals, strong CSR practices can be more impactful on financial performance as stakeholders (e.g., consumers, regulators, NGOs) place high expectations on responsible practices. Besides, in these highly regulated sectors companies that go beyond regulatory compliance with proactive CSR strategies can improve their financial performance by avoiding fines, reducing operational risks, and gaining favor with regulators and the public. Studies like those by [Ding et al. \(2024\)](#) and [Rezaee et al. \(2023\)](#) examine how ESG systems, which include CSR dimensions, influence financial performance in energy, mining, manufacturing, and chemicals industries. Their findings indicate that CSR in these sectors is often associated with improved financial outcomes, especially when coupled with green innovation and sustainability measures. Moreover, CSR can serve as a differentiation strategy in highly Competitive Industries as in the consumer goods industry, to enhance brand loyalty and increase sales. For industries that are consumer-centric (e.g., retail, food and beverages, fashion) more sensitive to CSR initiatives, positive actions can increase sales as well. As [Arian et al., \(2023\)](#), [Arian et al. \(2023\)](#) studies on Asian and European market, examining Australian firms, [Shin et al. \(2024\)](#) found that the positive impact of CSR on financial performance was more pronounced in consumer product industries, such as leisure and tourism. As to financial investment companies which try to manage and invest with a growing

emphasis on sustainability, ethics, and social impact, studies like that of [Brammer et al. \(2006\)](#) and [Belasri et al. \(2020\)](#) find that, by adhering to environmental, social, and governance regulations, these firms reduce regulatory risks, which translates into cost savings, operational efficiency, and improved financial outcomes. Through an alternative approach, [Eccles et al. \(2014\)](#) highlighted the influential role of financial investment companies in shaping CSR practices through capital allocation, the issuance of green bonds, and the provision of sustainability loans.

In light of all the studies that confirm the positive moderation effect of sector characteristics, our hypothesis is then:

H4a: Regulated industries, consumer-centric industry and financial investment companies moderate positively the relationship between CSR and financial performance.

In the context of less-regulated industries, where CSR might not be as strongly linked to regulatory pressures or consumer demands, studies often show that CSR's impact on financial performance can be weaker or more ambiguous in such sectors. Thus, the lack of industry-wide CSR norms and the competitive pressures that exist in less-regulated industries are critical factors that influence a company's decision to engage in CSR activities. Several studies, including those from [McWilliams and Siegel \(2001\)](#), [Baron \(2001\)](#), and [Peloza and Shang \(2011\)](#), highlight how firms in such industries tend to view CSR as a costly endeavor rather than a competitive advantage, especially when competitors do not adopt similar practices. The absence of clear consumer demand or regulatory mandates reduces the likelihood that companies will prioritize CSR unless there is a clear, short-term financial incentive or market-driven pressure. Similar to this category, real estate sector often reflects a tension between CSR adoption and market forces. As noted in the work of [Benlemlih and Bitar \(2018\)](#) and [Zhao and Tang \(2019\)](#), developers are more likely to hesitate in investing in CSR unless they see a clear return on investment or competitive pressures force them to engage in socially or environmentally responsible practices. Moreover, [Chiang et al. \(2020\)](#) found that CSR efforts in the real estate industry do not always lead to positive financial performance, particularly because consumer expectations in this sector are not as tightly linked to CSR activities compared to more regulated industries. Companies in this sector are often more focused on immediate financial returns from property transactions than on long-term CSR investments. They may not view CSR as a key driver of competitive advantage or financial performance in the short term because the external environment does not place enough importance on these initiatives. CSR activities in these sectors are often perceived as a cost rather than an investment, especially when consumer pressure or regulatory requirements are low. As a result, our hypothesis in less regulated, low-visibility and real estate industries of the impact of CSR may be stated as follows:

H4b: Real estate and less regulated industry moderate negatively the relationship between CSR and financial performance.

3. Data and Methodology

3.1. Sample and Data Description

To conduct the empirical analysis, a comprehensive dataset encompassing 138 listed companies on the Saudi Arabian stock exchange (Tadawul) during the period running from 2016 to 2022 was created. The selection process prioritized non-financial industries to ensure a distinct focus on fundamental business operations. Financial firms have been excluded mainly due to their unique regulatory environment, distinct capital structures, and different risk profiles, which could introduce confounding factors and skew the results. This exclusion ensured a more homogeneous sample, preserving comparability and allowing for a clearer analysis of the impact of CSR on corporate performance across non-financial industries. The companies were chosen based on the availability of extensive financial data and sustainability reporting, enabling the concurrent examination of their financial performance. They can be classified, as shown in **Table 1**, into five distinct industries, regulated (50% of the sample), consumer-centric (13.77%), real estate (7.25%), financial and investment (9.42%) and finally less competitive, less regulated, low visibility, or B2B industries (19.42%). This broader classification compared to [Homayoun et al. \(2023\)](#) allows for a more nuanced analysis of CSR's impact on financial performance across sectors with varying levels of environmental and social responsibility demands, which will enable us to confirm or refute our sector moderation hypothesis.

Table 1. Sample distribution by industry.

Code	Name sector	Number of companies	Percentage
1	Regulated industries or industries with higher visibility	69	50.00%
2	Industries that are consumer-centric (e.g., retail, food and beverages, fashion)	19	13.77%
3	Real estate	10	7.25%
4	Financial Investment companies	13	9.42%
5	Traditional or mature industries, less competitive, less regulated, low-visibility or B2B industries	27	19.57%
	Total	138	100.00%

3.2. Variable Measurement

Dependent variables: In this study, we use Return on Assets ROA, ROE and Tobin's Q as a dependent variable to measure corporate performance. The use of these three performance measures allows us to confirm the robustness of our empirical results. Tobin's Q is particularly more comprehensive for assessing long-term financial performance and Holistic view of performance. It evaluates how effectively a company is leveraging its assets to create value beyond their physical costs. This is particularly relevant in studies assessing the impact of strategic ini-

tiatives research that seeks to capture the effects of brand reputation, goodwill, and other non-financial assets often enhanced by CSR activities. A high Tobin's Q ratio suggests that a company is generating value that exceeds the replacement cost of its assets, indicating strong market confidence and better investment attractiveness. Besides, Tobin's Q is particularly useful for analyzing CSR's impact in sectors with different capital structures and asset intensities.

Independent variables: Our main independent variable is CSR. In empirical studies, researchers have used a variety of measures to capture different aspects of a company's social responsibility efforts (CSR Ratings and Indices, Surveys and Questionnaires, Third-Party Certifications, Environmental and Social Performance Metrics, Disclosure-Based Measures or Monetary Contributions and Philanthropy). In our empirical studies, we use these two later approaches. For the first, we use a variable where we attribute: 1 if company hasn't implemented programs to carry out social responsibility activities, 2 if company discloses in its board of directors' report programs to carry out social responsibility activities, 3 if company discloses one effective activity whether social or environmental and 4 if companies disclose more than one effective and real activity. This approach is useful for straightforward comparative analyses and often used when we want to highlight the presence or absence of specific CSR elements.

Although this CSR disclosure score (CSUS) is ordinal in nature, it is treated as a continuous variable in our regression model. This methodological choice follows common practice in CSR and accounting research, where ordinal indices with several approximately equidistant levels are assumed to reflect an underlying continuous construct, such as the intensity of CSR disclosure. Treating CSUS as continuous allows the use of the GMM estimator and facilitates interpretation, without materially biasing the results when the scale has four or more ordered categories. Nevertheless, this assumption is acknowledged as a methodological limitation, and future research may adopt ordered response models to verify the robustness of our findings.

As to the second approach, we use Zakat seen as a measure of a company's commitment to social responsibility, especially within Islamic finance and business practices. Researchers explain that Zakat goes beyond voluntary charity; it is an enforceable duty that impacts how businesses and individuals allocate resources. This form of CSR is framed as not just philanthropy but a religiously driven mechanism that ensures wealth redistribution and addresses poverty and inequality. The integration of Zakat into CSR is argued to enhance corporate reputation, improve stakeholder trust, and align business practices with broader socio-religious values. This approach has been used to analyze businesses in predominantly Muslim-majority countries where religious adherence influences economic and corporate behavior.

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Moderator variables: Three moderating variables will be considered in our study, auditing quality (AUD), leverage (LEV) and industry sector (SEC). Audit (AUD) is a dichotomous variable denoting 1 for companies auditing by big 4, and 0 otherwise. Leverage (LEV) is measured as a financial ratio that indicates the proportion of a company's debt relative to its total assets. For the moderator variable Sector, we decompose our sample into five categories as shown in **Table 1**.

Control variables: We follow prior research by specifying several control variables that affect the performance. Our first control variable is Firm-size (SIZE), measured as the neperian logarithm of the total assets. The size of a firm often moderates the relationship between CSR and financial performance by influencing resource availability, organizational structure, and stakeholder visibility. Larger firms tend to benefit more from CSR activities due to greater resources and visibility, whereas smaller firms may face resource constraints. Recently, [Zaiane and Ellouze \(2023\)](#) explored 407 European firms and found that firm size moderates the CSR-financial performance relationship differently depending on the industry's environmental sensitivity. In environmentally sensitive industries, larger firms benefit more from effective CSR initiatives, while smaller firms may struggle due to the costs of compliance. Conversely, in less sensitive industries, large firms often engage in symbolic CSR, which may not translate into financial benefits. The second variable is related to the tangibility (TANG) realized by the firm, measured as the amount of tangible assets divided by total assets. Firms with higher tangible assets procure higher stability which can improve their financial performance ([Chen & Strange, 2005](#)). The firm's age (AGE) is the third control variable. It is

measured by the number of years since the firm was established. In general, firm age is often controlled to account for its influence on resource availability, organizational learning, and the maturity of CSR practices, which can affect financial outcomes (Ji et al., 2024, Zaiane & Ellouze, 2023).

The definitions for each variable are presented in **Table 2**:

Table 2. Variables definition.

Dependent variable	Symbol	Measurement
Financial Performance PERF	ROE	Net Income to the Shareholder's Equity
	ROA	Net Income to the Total Asset
	Tobin'sQ	Market value of equity/book value of total assets
Independent variables		
Corporate Social Responsibility	CSUS	A variable noting 1 if company hasn't implemented programs to carry out social responsibility activities 2 if company discloses in its board of directors report programs to carry out social responsibility activities 3 if company discloses one effective activity whether social or environmental. 4 if companies disclosed more than one effective and real activity,
	ZAKAT	Tax and zakat Value/total expenses
Audit	AUD	A dichotomous variable denoting 1 for companies auditing by big 4, and 0 otherwise
Leverage	LEV	The ratio of total liabilities to total assets
Regulated industries	REGSEC	A dichotomous variable denoting 1 for Regulated industries, or industries with higher visibility energy, mining, chemicals, utilities, oil and gas, and healthcare, and 0 otherwise
Consumer industries	CONSEC	A dichotomous variable denoting 1 for Consumer industries: leisure and tourism., retail, food and beverages, fashion, and 0 otherwise
Real estate	REASEC	A dichotomous variable denoting 1 for Real estate, and 0 otherwise
Financial and Investment	FINSEC	A dichotomous variable denoting 1 for Financial and Investment, and 0 otherwise
Less regulated	LESRESEC	A dichotomous variable denoting 1for Traditional or mature industries, less competitive, less regulated, low-visibility or B2B industries, and 0 otherwise
Firm size	SIZE	LN of Total Assets
Tangible	TANG	Tangible assets/Total Assets
Firm Age	AGE	The number of years since the company was established

3.3. Methodology

To examine the hypotheses and address the research questions, we use two models where financial performance, the dependent variable is measured successively by

the return on equity (ROE), return on assets (ROA) and Tobin's Q. In order to achieve the study's goals and assess the impact of each independent variable on the corporate performance, we applied the system generalized method of moments (GMM) to the data.

The use of the GMM estimator is motivated by potential **endogeneity issues** that can bias conventional panel data estimations such as OLS or fixed effects models. Specifically, three main sources of endogeneity are addressed. First, simultaneity bias may occur since firms with better financial performance are more capable of investing in CSR initiatives, creating a two-way causality between CSR and performance. Second, omitted variable bias may result from unobserved firm-specific factors (such as managerial quality, corporate culture, or stakeholder orientation) that influence both CSR engagement and financial outcomes. Third, dynamic endogeneity arises because past financial performance can affect both current CSR activities and future firm results, implying persistence over time.

The GMM technique mitigates these problems by using internal instruments (lagged values of explanatory variables), thus ensuring more reliable and consistent coefficient estimates. This method is particularly suitable for dynamic contexts where past actions significantly influence present outcomes.

MODEL 1

$$\text{PERF}_{it} = \beta_0 + \beta_1 \text{CSUS}_{it} + \beta_2 \text{ZAKAT}_{it} + \beta_3 \text{AUD}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{LEV}_{it} + \beta_6 \text{TANG}_{it} + \beta_7 \text{AGE}_{it} + \beta_8 \text{REGSEC}_{it} + \beta_9 \text{CONSEC}_{it} + \beta_{10} \text{REASEC}_{it} + \beta_{11} \text{FINSEC}_{it} + \beta_{12} \text{LESRESEC}_{it} + \varepsilon_{it}$$

MODEL 2

$$\text{PERF}_{it} = \beta_0 + \beta_1 \text{CSUS}_{it} * \text{LEV}_{it} + \beta_2 \text{ZAKAT}_{it} + \beta_3 \text{CSUS}_{it} * \text{AUD}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{TANG}_{it} + \beta_6 \text{AGE}_{it} + \beta_7 \text{CSUS}_{it} * \text{REGSEC}_{it} + \beta_8 \text{CSUS}_{it} * \text{CONSEC}_{it} + \beta_9 \text{CSUS}_{it} * \text{REASEC}_{it} + \beta_{10} \text{CSUS}_{it} * \text{FINSEC}_{it} + \beta_{11} \text{CSUS}_{it} * \text{LESRESEC}_{it} + \varepsilon_{it}$$

We should note that before applying the GMM, several preliminary tests and diagnostic checks are necessary to ensure the robustness of the model and the validity of the instruments used. These tests help confirm that the assumptions underlying the system GMM estimation are met and that the model is appropriately specified. Three tests have been performed:

Sargan Test: it helps assess the validity of the instruments used in an econometric model by testing the overidentifying restrictions.

Arellano-Bond Test for Autocorrelation: one assumption of system GMM is that the errors are serially uncorrelated. The Arellano-Bond test checks for first-order (AR (1)) and second-order (AR (2)) autocorrelation in the differenced residuals.

Wald Chi-Squared Test: used to test the joint significance of one or more parameters in the model. It assesses the validity of a set of restrictions or hypotheses about the model's parameters.

4. Empirical Results and Analysis

4.1. Statistical Descriptive Analysis

Table 3 reflects that the mean of Tobin's Q in the sample during the period under

study was around 0.00131 with the highest and lowest values of 0.0245 and 0.0003 respectively. The mean value of return on assets ROA is around 2.70%. It varies between -76% and 38.69%. ROE had an average value of 1.69% during 2016-2022. The standard deviation statistic for this variable is 0.001552 reflecting low degree of volatility. The mean of the CSUS index is 3.498965 and it ranges between 4 and 1 and the standard deviation of the index is 0.879026. The average of zakat is found to be 0.062302 with the maximum and minimum values of 0.17 and 0.82, the standard deviation is 0.79. The leverage has a range between 0.052 and 0.999 with standard deviation 0.245. The maximum rate of size is 21.3726 while the minimum is 9.856606, and its standard deviation is 1.675247. The standard deviation of this latter is 0.001052. The range of the age parameter in the sample is 3 to 67 years; the standard deviation for age 13.94056 is high. Finally, the mean of size, tangible assets and age are 14.69279, 0.4159894 and 29.88693 respectively.

Table 3. Summary of descriptive statistics.

Variables	Obs	Mean	Std. Dev.	Min	Max
Tobin's Q	966	0.001309	0.001552	0.000283	0.024481
ROE	966	0.0169667	0.5209205	-0.69092	0.563875
ROA	966	0.0270621	0.2104256	-0.76092	0.3869818
CSUS	966	3.498965	0.879026	1	4
ZAKAT	966	0.062302	0.171779	-0.821912	0.791438
LEV	966	0.594167	0.245424	0.052355	0.969826
SIZE	966	14.69279	1.675247	9.856606	21.3726
TANG	966	0.4159894	0.2495504	0	0.972483
AGE	966	29.88693	13.94056	3	67

In order to ensure that we do not have a multicollinearity problem, we computed the Pearson and Spearman correlation matrix as shown in **Table 4**. According to **Table 4**, the highest correlation is 0.57 between the company size and the audit variable. Thus, as no bivariate correlation exceeds the value of 0.8 (Gujarati, 2021), there is no evidence of multicollinearity.

4.2. Regression Analysis

The coefficients of the regression analysis by using GMM estimation are presented in **Table 5**.

The empirical results in **Table 5** show that Corporate Social Responsibility, as measured by the CSUS, has a significant and negative impact on the financial performance of Saudi companies measured through ROE (model 1.1), ROA (model 1.2). This implies that the more resources a company spends on CSR activities, the lower its profitability might be. Companies might divert funds that could otherwise be used for reinvestment, R&D, or other growth-oriented activities, potentially

Table 4. Correlation matrix.

	Tobin's Q	ROA	ROE	CSUS	ZAKAT	AUD	TANG	AGE	LEV	SIZE
Tobin's Q	1									
ROA	0.0047	1								
ROE	0.0241	0.8545	1							
CSUS	0.072	-0.0314	-0.0724	1						
ZAKAT	0.1021	0.0093	0.0039	0.0309	1					
SIZE	0.312	0.1163	0.1209	0.0908	-0.0118	1				
AUD	0.1065	0.2041	0.1903	-0.0356	-0.0452	0.338	1			
TANG	-0.0316	-0.0235	-0.0148	-0.0082	-0.0958	0.059	0.184	1		
AGE	-0.1022	0.0092	-0.0055	0.0019	-0.0084	-0.16	-0.136	0.0064	1	
LEV	0.1984	-0.2596	-0.1832	-0.0751	-0.041	0.076	0.2375	-0.028	-0.118	1

Table 5. Regression analysis.

	Model (1.1) ROE		Model (1.2) ROA		Model (1.3) Tobin's Q	
	coef.	$p > z $	coef.	$p > z $	coef.	$p > z $
L1	0.2321619***	4.59	0.1982026***	3.88	0.3890749***	6.24
CSUS	-0.0314319*	-1.96	-0.019393**	-2.3	0.00143**	2.08
ZAKAT	0.1166285**	2.77	0.1266343*	6.16	0.000231	1.24
AUD	0.0307903	0.5	0.00201**	1.97	0.002223	0.933
SIZE	0.0465851**	2.04	0.0356572***	2.91	0.004053***	5.91
LEV	-0.049933**	-2.56	-0.0418764***	-4.63	-0.004937***	-3.7
TANG	-0.0388893**	-2	-0.0224399**	-2.51	-0.002436**	-1.96
AGE	-0.0010653	-0.09	-0.0049785	-0.92	0.004053***	5.91
REGSEC	0.2293729**	2.15	0.241392*	1.84	-0.099001***	-5.56
CONSEC	0.3828413**	2.43	0.1861019	1.38	-0.073723***	-4.66
FINSEC	0.3395311	1.3	0.4485068*	3.66	-0.0129547***	-6.43
LESRSEC	-0.1008717	-0.34	0.1997159	0.148	-0.0125797***	-5.5
CONS	-0.8615514**	-1.69	-0.6868004**	-2.6	0.0333965***	8.48
AR (1) p -value		0.058		0.063		0.1355
AR (2) p -value		0.6090		0.6789		0.7179
Sargan p -value		0.061		0.054		0.067
walk χ^2 p -value		0.000		0.000		0.000
Observations		966		966		966

***, **, and * represent $p < 0.01$, $p < 0.05$, and $p < 0.1$, respectively. Source: Results of data processing.

reducing profitability in the short-term. This result is well-supported by [Kramer and Porter \(2006\)](#). They note that firms may face trade-offs when allocating resources to social or environmental initiatives, especially in the short term. CSR investments can be costly and may divert funds from other potentially higher-return activities, such as R&D or capital expenditure. In other studies, such as [Homayoun et al. \(2023\)](#) and [Mahmood et al. \(2020\)](#), although the CSR initiatives may initially tighten profitability, as resource allocation is to be undertaken by firms for CSR initiatives, their impact changes to a positive trajectory in the long-term when the firm has better stakeholder relationships and achieves operational efficiencies. CSR negatively influences financial performance in the short run but provides long-term benefits as firms establish stronger reputations and customer loyalty. These findings support previous theoretical models that propose short-term costs associated with CSR act as a trade-off to secure sustainable long-term advantages. So, our empirical results from model (1.1) and model (1.2) show that the CSR initiatives are not aligned with short-term financial metrics. However, the model (1.3) demonstrates that the CSR influences positively and significantly the market-based indicator Tobin's Q, reflecting improved perceptions of value among investors and stakeholders ([Mahmood et al., 2020](#)). This Market-based measure reflects long-term value creation and investor expectations rather than short-term accounting metrics. Our empirical findings are confirmed by the study of [Yousefian et al. \(2023\)](#).

Related to Zakat as a measure of CSR, results show a positive link with firm performance, supporting the findings of [Khan et al. \(2020\)](#). In the Saudi context, where Zakat is perceived as a moral and religious duty, such firms may gain social capital and trust from consumers, investors, and society at large. Socially responsible strategies, particularly Zakat, enhance customer retention, attract potential clients, and stimulate profitability. In contrast, the general CSR disclosure measure (CSUS) may have short-term negative effects due to the immediate costs and resources required for implementing and reporting CSR initiatives. This contrast highlights the unique role of Zakat in Saudi Arabia: it not only fulfills religious obligations but also strengthens corporate reputation, investor confidence, and long-term financial performance, making it a culturally embedded and economically beneficial form of CSR.

Regarding control variables, our empirical findings suggest that leverage influences negatively and significantly all measures of financial performance. In fact, excessive debt increases the likelihood of financial distress ([Modigliani & Miller, 1958](#)), bankruptcy, and agency problems ([Meckling & Jensen, 1976](#)). All of which can erode firm performance. Firms that take on too much debt may find themselves struggling with high interest payments, reduced operational flexibility, and poor market perceptions, which can negatively impact both short-term and long-term financial performance. As to the firm size, this control variable has a significant and positive impact on the corporate financial performance, suggesting that larger firms tend to perform better. This aligns with theories of economies of scale

and market power. Large businesses are more likely to produce goods at a much lower cost which makes them more competitive. Our results are similar to Hadi and Chatterjee (2010) who argue that larger firms often operate across multiple markets or geographies, which allows them to diversify their risk. This diversification can help stabilize cash flows and earnings, protecting the company from downturns in any single market. By reducing volatility in earnings, large firms are more likely to achieve steady and strong performance. For the tangibility, similar to Fama and French (1992) study, the relationship with the profitability is found statistically significantly negative. Firms with high tangible assets may face higher costs of capital due to higher depreciation and maintenance expenditures, leading to lower returns. And for the firm's age, our result is similar to Gurbuz et al. (2010), Ghafoorifard et al. (2014) and Mallingu et al. (2020) studies. As in Turkey, Tehran or Kenyan contexts, the relationship with the profitability in Saudi context is not always straightforward. In some cases, older firms were observed to have lower profitability, especially in industries where innovation and adaptation to changing markets are crucial, sectors with rapid technological change and high competition.

In examining the moderating effect of the external audit on the relationship between CSR and firm performance (H2), the interaction term "CSUS * AUD" has a significant and positive coefficient (for all the models in Table 6), suggesting that higher quality of auditing significantly moderate this relationship. The combination of CSR practices and reputable auditors helps build greater stakeholder trust, increasing the financial benefits of CSR. This result explains that auditors belonging to the big 4 have a large role in defining the disclosure policy of their clients and discovering any possible manipulation of company decision-makers such as in the matter of CSR investment which can be used opportunistically. Our empirical results which confirm the second hypothesis are in accordance with those of Dakhli (2022).

For the Leverage moderating effect (H3), as shown by Table 6, the interaction has a significant and negative coefficient for models (2.1) and (2.2) where firm performance is measured by ROE and ROA and significant positive coefficient with Tobin's Q (model (2.3)).

On one hand, high leverage as key moderating factor can weaken or dampen the relationship between CSR activities and firm performance particularly when leverage financial constraints, short-term performance pressures, and conflicting interests between debt holders and shareholders are considered (Liang & Renneboog, 2017; Galbreath, 2018; Garcia-Sanchez et al., 2020). At the other hand, it can positively moderate the relation, particularly when firms view CSR as a way to enhance their reputation, reduce risk, or improve stakeholder relationships. High leverage may encourage firms to invest in CSR as a strategic tool to improve their long-term performance and market valuation, ultimately leading to a higher Tobin's Q (Luo & Bhattacharya, 2006).

As to the moderating effect of the sector based on our classification, hypothesis

H4a is partially confirmed. Along with [McWilliams and Siegel \(2001\)](#), [Mahmood et al. \(2020\)](#) and [Pham et al. \(2021\)](#) findings. Regulated industries and consumer-centric industry moderate positively the relationship between CSR and financial performance measured in terms of ROE and Tobin's Q (models (2.1) and (2.3)). Therefore, CSR is not just a cost or a legal obligation but can be a strategic driver of financial performance and long-term value creation. When the performance is measured in term of ROA, the moderation effect turns to be however, negative (model (2.2)) that can be easily explained from increased in the short term of operational costs, higher capital expenditures, delayed returns, and potential capital misallocation. That's why as was mentioned by earlier authors ([Aupperle et al., 1985](#), [Kramer & Porter, 2006](#), [Malik, 2015](#)), firms in regulated and consumer-centric industries must strategically balance their CSR initiatives to ensure they do not compromise asset efficiency and short-term profitability, which could harm ROA.

Related to investment and financial sector, results in [Table 6](#), confirm the

Table 6. Regression analysis (GMM) moderating factors.

	Model 2.1 ROE		Model 2.2 ROA		Model 2.3 Qtobin	
	coef.	$p > z $	coef.	$p > z $	coef.	$p > z $
L1	0.1625475***	3.71	0.2190099**	2.15	0.5842231*	7.51
CSUS * AUD	0.0017827**	2.17	0.0058509**	2.04	0.001007*	1.92
ZAKAT	0.0853125**	2.17	0.1086035**	2.43	-0.002984	-1.04
CSUS * LEV	-0.0791374***	-5.19	-0.0403473**	-2.50	0.002363**	2.16
SIZE	0.0558247***	4.24	0.0348724**	2.24	-0.00777**	-6.63
TANG	-0.0326774*	-1.95	-0.0207171**	-2.04	0.000482	0.967
AGE	-0.0020032	-0.26	0.0010412	0.21	0.001741	0.002
CSUS * REGSEC	0.0552899*	1.89	-0.0134083*	-1.86	0.005845***	2.55
CSUS * CONSEC	0.0862446***	2.79	-0.0027658**	-2.27	0.00192*	1.89
CSUS * REALSEC	0.0424529	0.78	-0.0588939	-1.58	0.010773	1.74
CSUS * FINSEC	0.0790283**	2.42	0.0003606**	2.21	0.00344	1.42
CUS * LESRSEC	0.0326871	1.06	-0.015207	-0.73	0.006124	1.49
CONS	-0.8913683*	-3.81	-0.4360689*	-1.82	0.076322***	3.99
AR (1) ρ -value	0.052		0.061		0.053	
AR (2) ρ -value	0.7436		0.6639		0.3769	
Sargan ρ -value	0.073		0.059		0.083	
wald chi ² ρ -value	0.000		0.000		0.000	
observations	966		966		966	

***, **, and * represent $p < 0.01$, $p < 0.05$, and $p < 0.1$, respectively. Source: Results of data processing.

hypothesis (H4a) when the financial performance of Saudi companies is measured through ROE and ROA (Models 2.1 and 2.2) but not the Tobin's Q (Model 2.3). CSR in these firms often aligns with regulatory standards for environmental, social, and governance, reducing the likelihood of legal penalties and improving the firm's ability to operate efficiently. This can lead to lower operating costs and better immediate financial outcomes, improving ROA and ROE. Even if these practices can enhance long-term value creation, in Saudi companies they might not show up immediately in Tobin's Q. Our findings are then similar to [Eccles et al. \(2014\)](#) provide empirical evidence that corporate sustainability (including CSR initiatives) may influence financial performance over time, but it does not necessarily result in immediate changes in market valuation as reflected by Tobin's Q.

Along with previous studies ([Aupperle et al., 1985](#); [Hart & Ahuja, 1996](#); [Aqabna et al., 2023](#)) for the real estate sector, and [Orlitzky et al. \(2003\)](#) for less regulated industries, our results across the three models show no significant impact of CSR efforts on financial performance, leading to the rejection of hypothesis H4b. While CSR can improve a company's brand image, enhance community relations, and contribute to sustainability, these benefits often accrue over time and do not directly influence short-term profitability or asset efficiency, resulting in non-significant effects on ROA and ROE ([Khan et al., 2016](#)). Moreover, companies that focus on environmentally-friendly construction may not see an immediate increase in Tobin's Q, as investors may prioritize short-term market trends despite long-term value improvements. Similarly, firms less scrutinized by government bodies or regulatory agencies have weaker incentives to adopt CSR practices, which may be perceived as non-essential or additional costs rather than as drivers of financial performance.

In summary, our empirical results support some of the findings in [Yin et al. \(2021\)](#), which emphasized that the relationship between CSR and firm performance varies significantly across different industries. Specifically, we found that industries in Saudi Market with high consumer visibility, such as retail and consumer goods, tend to experience more positive financial outcomes from their CSR activities. This finding aligns with the understanding that consumers in these sectors are more likely to be influenced by CSR initiatives, which can enhance brand reputation, customer loyalty, and ultimately drive sales and profitability. In contrast, in industries with Low Consumer Visibility, CSR may not directly influence consumer purchase decisions, and thus, the financial benefits are less immediate or apparent.

5. Conclusion

The aim of this study was to examine the extent to which corporate social responsibility contributes to financial performance for non-financial listed firms in the Saudi Stock Exchange (Tadawul) from 2016 to 2022. Additionally, we extend our analysis to evaluate the role of three moderator factors, leverage, high audit quality and the industry sector.

The study comprises several contributions to theoretical development and empirical research in the field by employing a system GMM analysis and conducting robustness tests (using ROA, ROE and Tobin's Q as measures of performance). In contrast to most studies that base their assessment on external factors (the judgment of experts, report analyses or the opinion of stakeholders), we use internal information. CSR was assessed using two key indicators. The first focuses on the fundamental Shari'a principle of paying Zakat, which serves as an effective means of implementing CSR programs. By helping to bridge the gap between different social classes, Zakat enables companies to achieve both short- and long-term objectives, ultimately enhancing their market value. The second indicator considers the CSR-related information disclosed by companies regarding their social and environmental initiatives.

Firstly, our study reveals that while CSR initiatives (measured by the CSUS) have a direct negative impact on short-term financial performance indicators such as ROE and ROA, it contributes positively to long-term value creation. The negative short-term effects can be attributed to the diversion of resources that might otherwise be used for growth-oriented activities. However, CSR initiatives strengthen stakeholder relationships, improve operational efficiencies, and enhance reputations, ultimately benefiting financial performance in the long term. This is consistent with the findings of previous studies (Homayoun et al., 2023). Furthermore, the positive influence of CSR on market-based indicators (Tobin's Q) demonstrates that CSR contributes to improved investor perceptions and market valuations (Yousefian et al., 2023). Additionally, in the Saudi context, fulfilling Zakat obligations represents an important aspect of social responsibility, reinforcing trust and enhancing a firm's reputation. This commitment helps strengthen customer relationships, attract new clients, and drive profitability (Khan et al., 2020).

Secondly, the study reinforces the viewpoint of the authors, who suggested that the relationship between CSR and financial performance should be mediated by other factors, especially audit quality, leverage and industry sector. Our empirical results confirm that high-quality audit moderates positively the relationship between CSR and the corporate performance. But this is not the case for leverage. Our study shows that leverage negatively moderates the relationship between CSR and firm performance (ROE and ROA) by creating financial constraints and pressures on short-term performance (Garcia-Sanchez et al., 2020). However, when combined with social disclosure activities, leverage positively moderates the relationship between CSR and Tobin's Q. CSR's impact on financial performance varies across industries. In regulated and consumer-centric sectors, CSR has a positive effect on both ROE and Tobin's Q by improving reputation, risk management, and operational efficiency. However, CSR may negatively affect ROA in the short term due to higher operational costs and capital expenditures. For the financial investment firms, CSR's alignment with regulatory standards enhances financial performance, improving both ROA and ROE. However, CSR's impact on To-

bin's Q is less immediate. In the real estate sector and less-regulated industries, this study finds that CSR initiatives have limited impact on financial performance. These empirical findings suggest that in such sectors, CSR is often seen as non-essential or merely an additional cost.

Thus, our results contribute to existing literature by highlighting the heterogeneity of the CSR-financial performance relationship across industries, particularly in the context of emerging markets. Consistent with Yin et al. (2021), we highlight that the financial impact of CSR varies across industries and depends on the visibility and relevance of CSR initiatives within each sector. This industry-specific distinction suggests that the relationship between CSR and firm performance should be adapted to align with the unique characteristics of each sector.

Notwithstanding the positive aspects mentioned above, it should be mentioned that the measurement of indices relative to CSR may have been affected by the subjectivity of authors responsible for extracting information in each company, as well as by the possibility of the provision of false data. The study is also based on a single-country analysis which may limit its empirical generalization. Another potential limitation is that our analysis is limited to non-financial companies. It is recommended to include financial companies in future research in order to get a wider view on the relationship between CSR and firm performance in Saudi Arabia.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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