



# Corporate Governance and Corporate Performance with a Mediating Role of Corporate Social Responsibility—Case Study of Companies Listed on Saudi Arabian Exchange

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## Abstract

The goal of the research was to find out how Corporate Governance, Corporate Social Responsibility, and Corporate Performance are linked in Saudi Arabian capital market. Domestic companies registered on the Arabian stock exchange make up the majority of the population. The research spans 11 years and includes data from 2010 to 2020. Data was extracted from audited annual reports of domestic companies listed on Saudi Arabian Exchange (SAE). The Hausman Test was used to determine that the Random Effect model was the best fit. To find endogeneity, we employed the Durbin-WU-Hausman test and the TSLS rather than the OLS. A model has been proposed to examine the relationship between corporate governance and performance, as well as that of corporate social responsibility (CSR) that acts as a partial mediator. This study has implications for the current and potential investors of the firms in the Kingdom Saudi Arabia in the context of choosing “socially participating” firms for their investment. Theoretically, this study also contributes to our understanding of some related concepts that have not been explored in previous researches concerning CG, CP and CSR. This can also be deduced from the finding that CSR partially contribute to enhance a firm’s performance in the context of Saudi companies.

## Keywords

Corporate Governance, Corporate Social Responsibility, Corporate Performance, Mediator, Saudi Arabian Stock Exchange

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## JEL Codes

G21, G34, M14, O16, O53

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### 1. Introduction

Companies employ corporate governance (CG) and corporate social responsibility (CSR) to improve their financial success. CSR and CG are important factors in developing countries' long-term growth. The importance of being socially responsible lies in its financial gain for the firms. "Corporate Governance" and "Corporate Performance" are investigated extensively by the researchers, using different methodologies, indicators, and contexts and using different intervening variables. One of the intervening variables that is often ignored and seems to have its influence over corporate performance is "Corporate Social Responsibility". Many researchers have conducted research to evaluate the effect of corporate governance on a firm's performance. Numerous studies indicate positive and negative direct and indirect links between corporate governance (CG) and corporate performance (CP). There are also some studies which indicate no relationship between them. The results of such studies are based on different theories, methodologies, indicators, and contexts. Saudi Arabia in the context of choosing "socially participating" firms for their investment. The theories on which previous researches are based include agency theory, stewardship theory, resources dependency theory, signaling theory and stakeholder theory (Rodriguez-Fernandez, 2016). The concept of "corporate social responsibility" is a relatively new concept in the business world. Researchers are increasingly studying the effects of CSR on business performance. The results from previous studies are debatable because of the many intervening variables outside of the context of these studies. CSR is defined as the obligation of businesses to use their limited resources in ways to benefit society. CSR aims to maximize shareholders' wealth, through committed participation as a member of society. Researchers are increasingly studying the effects of CSR on business performance and value for society. Carson (1993) is the pioneer of CSR theory with extremely important and influential position. His first position was stated in "Capitalism and Freedom" and second was stated in "Social Responsibility of Business". According to his first formulation, CSR is the obligation of business to maximize its profits while engaging in "open and free competition without deception or fraud". The second formulation states that business executives are obligated to follow the wishes of shareholders (which will generally be to make as much money as possible) while obeying the laws and the "ethical customs" of the society (Carson, 1993). Brin and Nehme (2019) compared three theories of CSR: (Carroll, 2016), the Triple Bottom Line CSR theory (TBL) and the stakeholder theory. Carroll's (2016) CSR theory takes into account four main responsibilities for the

CSR approach: economic, legal, ethical, and philanthropic; while the TBL CSR theory takes into account three main responsibilities for the CSR approach: economic, social, and environmental. In contrast, the stakeholder theory is a comprehensive approach to CSR, taking into account the interests of various stakeholders' groups, allowing the corporation to maintain a strong relationship with community and business components. The Stakeholder theory helps companies gain the trust and loyalty of all stakeholders.

The discussion of CSR remains meaningful as we pace in twenty first century. The issues will remain the same but more challenging, as the IT advancements come on the scene and forces all business to global scale (Carroll, 2000). The CSR disclosure benefits businesses in various ways. Through CSR disclosures, the firms can raise more funds at reduced cost as compare to those firms which do not disclose CSR activities (Dhaliwal et al., 2011). Organizations can become an employer-of-choice by providing sustainable HRM practices (Lis, 2012). Ethical concerns drive managers to produce high-quality financial reports implying that socially responsible firms are less likely inclined towards managing their earnings through discretionary accruals, manipulating real operating activities, and to be the subject of SEC investigations (Kim, Park, and Wier, 2012). A Firm's CSR activities aimed at a firm's secondary stakeholders such as customers or society at large demonstrate an "insurance-like" property that protects the firm in condition of negative event. On the other hand, technical CSRs targeting a firm's trading partners, possess no such property (Godfrey, Merrill, and Hansen, 2009). Among the many factors that could explain the "CSR Divide" between the developed and developing countries, the negative impact of CSR on comparative advantage is the final resort where developing countries are not inclined toward western style CSR. Developing countries, such as China, are adopting proactive approaches to use CSR as a comparative advantage in global trade (Gugler and Shi, 2009). All types of MNEs place similar importance on global CSR issues (e.g., environmental conservation), but the multi-domestic and transnational MNEs place greater importance on local CSR issues than do global MNEs. This notion is consistent with institutional theory (Husted and Allen, 2006).

His study contributes to exploring the effect of corporate social responsibility as a mediator in the relationship between corporate governance and corporate performance. This study is carried out in the context of the Saudi Arabian exchange due to its business importance in the area, as there are few studies specifically with reference to companies listed on that exchange specifically with reference to the "mediating role of corporate social responsibility". The investigation examined data from 14 Saudi companies for eleven years from 2010 to 2020. The Hausman Test was used to determine that the Random Effect model was the best fit. To find endogeneity, we employed the Durbin-WU-Hausman test and the TSLS rather than the OLS. This study is also based on the stakeholder theory of CSR; firms try to balance the interests of various interest groups

such as customers, suppliers, environment, the community, employees, etc. Once it is fulfilled, the firms' can win the loyalty and trust of their stakeholders, which is reflected in their business performance. This is particularly important since existing literature is silent on the effect of corporate governance mechanisms on improving performance indicators through CSR activities. This study distinguishes itself from others by expanding existing literature with a different insight and incorporating the mediating effect of CSR.

The study aims to examine how corporate governance influences operating, market, and financial performance of Saudi companies, using corporate social responsibility as a mediating variable. Further, along with the pursuance of the primary objective, other objectives of this study are:

- 1) To explore the direct relationship between corporate governance (CG) and corporate performance (CP).
- 2) To explore the direct relationship between corporate governance (CG) and corporate social responsibility (CSR).
- 3) To explore the relationship between corporate social responsibility (CSR) and corporate performance (CP).
- 4) To extend the literature by adding understanding of some meaningful concepts CSR that seems to be related to CG and CP, specifically, in the context of Saudi Arabia.
- 5) To provide a guide to executives and manager about their investment decisions in social causes.
- 6) To provide investors with valuables information regarding the role of CSR in organizational performance.

The following are the research questions:

- 1) What elements are utilized to assess corporate governance?
- 2) What factors are utilized to assess the financial, accounting, market, and operational performance of companies listed on Saudi Stock Exchange?
- 3) What effect does financial leverage and corporate governance have on companies' performance?
- 4) What role does Corporate Social Responsibility play as a mediator between Corporate Governance, and Financial Performance of companies Listed on the Saudi Stock Exchange as Independent Variables and Financial Performance of companies Listed on the Saudi Stock Exchange as a Dependent Variable?

The following is a breakdown of the paper's structure. The literature on corporate governance, corporate social responsibility, and financial performance measurements is examined in Section 1. The gap analysis and variables chosen for this study, justification of study, Conceptual Model and complete list of hypotheses to be used to achieve the objectives of the study are covered in Section 2. Section 3 contains the data analysis and methodology, as well as the results and output. The findings, discussion and conclusion of major findings are outlined in Section (4). The limits and guidelines for future investigations will be

discussed in Section (5).

## 2. Literature Review and Hypothesis Development

The theories, on which this study is based, are summarized here.

Agency theory explains the relationship between a principal and his agent. Agency theory states that in firms where the CEO and Chairman are two different persons, the Chairman requires the managers to engage and invest in social activities. In other words, the separate role of CEO and chairman can reduce agency problem and increase the CSR disclosure (Cherian et al., 2020).

The stakeholder theory asserts that the firms seek to balance the interest of multiple stakeholders that can directly or indirectly affect company's outcome. These stakeholders include customer, supplier, employees, shareholders, community, environment etc. By adopting transparent policy, a firm tries to gain the trust and loyalty of all stakeholders (Brin and Nehme, 2019).

The signaling theory states that corporations try to reduce information asymmetries between them and their stakeholders by disclosing information about their engagement and investment in social activities. This action pays the corporations in the form of increased sales and performance (Su et al., 2016).

This portion will consider the variables under study and their linkages in the different studies in Saudi Arabia and other markets. First of all, we will discuss corporate governance and corporate performance. Second, we will investigate the relationship between corporate governance and corporate social responsibility; third, we will investigate studies on corporate social responsibility and corporate performance; and finally, we will discuss the role of CSR as a mediator in previous studies.

### 2.1. Corporate Governance (CG) and Corporate Performance (CP)

The previous studies proved positive direct and indirect relationship between corporate governance and corporate performance. These include the work done by (Esteban-Sanchez et al., 2017; Gaio & Henriques, 2020; Jain et al., 2017; Malik & Kanwal, 2018; Mishra & Suar, 2010). On the other hand, the studies that establish the negative direct and indirect relationship between the aforementioned variables include (Adeusi et al., 2013; Al-ahdal et al., 2020; Palaniappan, 2017; Rossi, Nerino, and Capasso, 2015). Further, the literature which proves no relationship at all between the variables includes the research paper by (Shahwan, 2015). In sum, the research performed on the study variables produced conflicting results due to different methodologies, proxy variables, measurement approaches, and the contexts used in these studies.

With the right corporate governance mechanisms, the financial performance of a firm can be improved (Kyere and Ausloos, 2021). A firm's performance is measured in a number of ways. The usual indicators used for measuring corporate performance include ROA, ROE, and TobinQ. ROA is used to measure

firms' operating performance; ROE is used for financial performance and TobinQ for market-based performance. On the other hand, CG is measured through board size, board meetings, audit committee size, audit committee meetings, ownership concentration of individuals, institutions and family members (in case of family-owned business), CEO role-duality and percentage of independent director at the board and audit committee.

Our study uses Board Size (BS), Board Meeting Frequency (BMF), Audit Committee Size (AUCS) and Ownership Concentration of major shareholders (OWNCON) as indicators of corporate governance.

Literature indicates that the firms perform worse with increasing board and audit committee size and audit committee meetings, presence of independent members on board and the presence of CEO role duality (CEO also acting as chairman of the board) and vice versa (Basuony et al., 2015). Another study concluded that the corporate governance does not improve financial performance consistently, but through exploiting intangible resources. Firms that announce the enactment of corporate governance guidelines experience increased stock prices immediately after the announcement (i.e., days 1 - 4) as compared to other firms that only referenced the guidelines' enactment (days 8 - 10) (Picou and Rubach, 2006). Usually, the firms are ranked by market information intermediaries based on their adoption and implementation of CG rules and regulations. These rankings affect firm market as well as accounting results of (Berthelot, Morris, and Morrill, 2010) and (Kara, Erdur, and Karabiyik, 2015).

According to Awan & Jamali (2016), board size and audit committees have positive connection with profit margin and ROE. But, according to Palaniappan (2017), board size has significant negative relationship with TobinQ, ROA, ROE and this relationship is moderated by board independence and meeting frequency. According to Lekaram (2014), board size is negatively related to ROA and OE for listed manufacturing firms in Kenya.

Foreign and director ownership have significant positive influence firm financial performance measures i.e., ROA and ROE, TOBINQ and MTB (Rashid, 2020). Institutional ownership has significant positive relationship only with specific performance measures i.e., ROA (Rashid, 2020). Further, there exit significant positive association between ownership structure and board characteristics variables, and board characteristics and firm performance variables.

Board ownership, board education and experience, effectiveness and CEO role-duality has positive association with the firm's ROA, ROE, MTB, TobinQ, while board size has negative, whereas, independence of directors has no relationship between with firm's performance (Ali, 2018). CGQI is negatively related with Tobin's Q while positively related with ROE (Rossi et al., 2015).

Corporate governance codes are better followed in developed countries and more rigorous corporate governance structure is linked with better operating performance, according to a study by the University of British Columbia (UBC) published in the American Journal of Banking and Economics conducted by re-

searchers at the UBC (Sayari and Marcum, 2018). In developed countries, board meeting and female representation on board have significant positive. While board independence and board size have significant negative relationship with firms' financial performance. The results are conflicting in case of developing countries where financial performance of firms appears to be negatively associated with board independence. This difference can be attributed to different institutional settings in both developed and developing countries (Ali et al., 2020). In China, the ownership concentration and degree of board independence are closely related to a firm's performance—but only in the case of larger companies. The expertise of the supervisory board is not significant (Shan and McIver, 2011). In case of turkey, institutional ownership has positive influence on financial performance. This relationship is strong for firms listed on the corporate governance index (Gürbüz, Aybars, and Kutlu, 2010). In case of Saudi Arabia, corporate governance is not related to ROA, but related to Tobin's Q and market value of equity. Furthermore, this relationship is positive (Fallatah & Dickins, 2012). In case of Nairobi listed companies, specific aspects of board composition, experience, skills, expertise and separation of the role of CEO and Chair and leverage are positively associated with insurance firm financial performance, listed at the NSE (Mwangi, 2013).

Some researches, for example, (Shahwan, 2015) found insignificant and negative correlation between corporate governance and firm performance measure by TobinQ. According to (Adekunle, 2020), the composition and size of board have significant impact on a firm's performance, while the status of CEO has insignificant positive effect on firm performance. The ownership concentration of companies is negatively correlated with return on asset (ROA) but positive correlated with profit margin (PM). He recommends policy makers to have independent directors on board and the board size must be according to corporate size and activities. The presence of external directors, foreign institutional stockholders and domestic financial institutional stockholders are important factors to improve financial performance (Huang, 2010). The external directors and specific ownership have the greatest impact on the social performance of a firm's worker, customer, supplier, community and the society. Foreign institutional stockholders help to increase worker and supplier performance by paying more attention to employee policies and supply chain relationships. The government shareholders will be more likely to request that companies fulfill their social responsibilities. From the discussion above, it can be hypothesized that corporate governance and financial performance are positively related.

## 2.2. Corporate Governance (CG) and Corporate Social Responsibility (CSR)

Corporate governance mechanisms play a vital role in ensuring organizational legitimacy through CSR disclosures. The study conducted by (Filatotchev and Nakajima, 2014) indicated that linkage between CSR strategies and CG variables

such as boards of directors, ownership patterns, and executive incentives may differ based on the legal system and institutional characteristics in a specific country. CSP is the outcome of CSR activities (Le et al., 2013). The relationship between CSR and CG is widely researched, but the results are ambiguous and doubtful (Berber, Slavić, and Aleksić, 2019).

The composition of the board and the ownership scheme also contribute to how organizations behave towards society. The studies conducted by (Wang and Coffey, 1992) and (Zhang, Zhu, and Ding, 2013) revealed that the ratio of insiders to outsiders, the percentage of insider stock ownership, and the presence and proportion of female and minority in the board are positively and significantly associated with firms' charitable contributions. Nevertheless, stakeholder oriented directors, whether internal or external, are more inclined towards playing their role of DR-CSR which is directors role in CSR (Hung, 2011).

The power inherent in the role of manager/CEO also plays its role in determining the tendency of organizations of their CSR disclosure. The agency theory states that powerful CEOs may promote transparency about banks' CSR activities for their private benefits. While, on the other hand, they might abuse their power by providing a high degree of CSR disclosure, it could also be a sign of managerial risk aversion or managers' private reputational concerns (Jizi et al., 2014), (Sial et al., 2018), and (Szegedi, Khan, and Lentner, 2020).

Similar to CG, CSR is also responsive to country differences. In a developed country such as Singapore, with more public ownership of companies, more effective corporate governance structures, more international investment, and citizen voice and action, the nature of CSR is likely to be similar to that of multinational firms in the U.S. and U.K. However, in developing country like Turkey, private ownership of firms dominates that prefers to hold a broader notion of CSR as FDI increases and as it continues to seek membership in the EU (Robertson, 2009).

The relationship between CG and CSR is intervened by other factors such as ethical practices. According to El Gammal et al. (2020), ethical practices acts as a full mediator for the relationship between the audit committee component of corporate governance and the three corporate social responsibility initiatives towards stakeholders, customers and employees. To summarize, there are mixed results. So, it is hypothesized that there is a significant impact of Corporate Governance on Corporate Social Responsibility Disclosure.

### **2.3. Corporate Social Responsibility (CSR) and Corporate Performance (CP)**

The contradictions in literature about the relationship between CSR and CP can be attributed to different measurement approaches used by different researchers and researcher's subjectivity and selection bias (Galant and Cadez, 2017). CSR measures range from one-dimensional to multi-dimensional. CSR measurement approaches include reputation indices or one-dimensional measures that can be



computed through content analyses or questionnaire-based surveys. The CP is measured through accounting measures (ROA), financial measure (ROE) and market-based measures (Tobin's Q) or combined.

Some of the studies exhibiting positive, negative or no relationship between CSR and CP are listed under this section. Broadly, CSR governance generate good CSR outcomes that in return influence companies' financial performance (Wang and Sarkis, 2017). Social performance of an organization is positively associated with organization's prior and future financial performance. Prior relationship supports the theory of slack resource availability whereas future relationship supports the theory of good management (Waddock and Graves, 1997). CSR related benefits arise due to two main reasons. First, CSR causes increase in revenues from enhanced sales and increased price margins. Second, the CSR induces decrease in cost due to tax concessions, reduced duties by the government to promote CSR activities, efficiency gains from environment-friendly technologies, and reduced cost of capital. A stakeholder-oriented firm while generating value for its stakeholders also generates value for its shareholders (Mishra and Suar, 2010).

Mangers of public listed companies often invest in CSR activities in order to maximize market value (Mackey, Mackey, and Barney, 2007). Stakeholders' awareness of CSR initiatives taken by the companies results in financial gain (Rhou, Singal, and Koh, 2016). Direct relationship between CG, CSR and corporate performance as measured through ROA was reported by (Baig et al., 2021). Singh and Misra (2021) said that the CSR is linked with organizational performance and this linkage of CSR tends to vary between firms with high and week reputation.

Different results have been reported in the contexts of developing and developed countries. In case of the developing countries such as Eritrea, Pakistan, Turkey and Bangladesh, CSR has significant influence on the organizational performance (Bahta et al., 2021; Szegedi et al., 2020; Akben-Selcuk, 2019). Firms in these countries are increasingly share CSR disclosure in pursuit of improved financial results such as the case of pharmaceutical industry of Pakistan (Malik and Kanwal, 2018). Corporate social responsibility can build better corporate image through good controls and monitoring system hence improve firm performance (Marić et al., 2021).

In an empirical research conducted by Worokinasih and Zaini (2020) concluded that the Good Corporate Governance has a significant positive impact on Corporate Value; whereas GCG has a significant negative impact on CSR disclosure and further, CSR disclosure has no significant impact on Corporate Value (Worokinasih and Zaini, 2020). Another study observed mediating role of CG for the relationship between CSR and CP. Board size and gender diversity factors of CG moderate the CSR and firm's financial performance link positively and ownership concentration factor of CG affect this link negatively. (Pekovic and Vogt, 2021) found board independence to not moderate the link between CSR and firm's financial performance. Hence, from the above discussion, it is hypothesized that there is a significant impact of Corporate Social Responsibility

on Corporate Performance.

#### 2.4. Corporate Social Responsibility (CSR) as a Mediator

Different results have been reported, when it comes to discuss the mediating effect of CSR upon the relationship between CG and CP. A few, entailing different proxies for CG, CSR and CP, are listed under this section.

The board composition comprising of more sophisticated board of director and the boards which include family or foreign members provide more CSR disclosure which in return leads to greater stock returns (Abdelfattah and Aboud, 2020).

The previous researchers had tested the mediating effect of one of the three (i.e., CG, CSR, CP) on the other two, in different context, using different proxies and reported different results. For example, in Indonesia, there exist significant positive relationship among CG, CSR and corporate value and corporate governance mediates the link between corporate value and CSR disclosure (Purbawangsa et al., 2020). Machdar (2019) reported totally different result for Indonesia; CG does not affect the CSR disclosure in Indonesia and CG affects the CP. CG does not affect the CP through CSR disclosure. In China, there exist significant positive relationship among CG, CSR and corporate value. CP mediates the link between corporate value and CSR disclosure. In India, there exist significant positive relationship among CG, CSR and corporate profitability whereas CG and CP indirectly affect corporate value (Purbawangsa et al., 2020). The choice of CSR disclosure is positively related with the internal and external corporate governance and monitoring mechanisms, including board leadership, board independence, institutional ownership, analyst following, and anti-takeover provisions. (Cohen, Holder-Webb, and Khalil, 2017) asserted that Investment decisions are affected by CSR performance and that governance strength exerts a marginal effect on the investment decision only when CSR performance is strong. Further, the developing countries (Lebanese) appear to be more sensitive to weak performance (both CSR and governance) than developed countries (U.S.).

Company's size, the board commitment and profitability are positively associated with the extent of CSR disclosure. Financial leverage is associated negatively with the extent of CSR disclosure (Giannarakis, 2014). Corporate governance is positively linked to corporate sustainability performance, which leads to improved financial performance. Further, corporate sustainability performance mediates the link between corporate governance and financial performance (Asma et al., 2019). Hence, from this discussion, it is hypothesized that Corporate Social Responsibility mediates the relationship between Corporate Governance and Corporate Performance.

#### 2.5. Research Gap Analysis and Justification of the Study

The following Table 1 & Table 2 are showing the different recent studies and

**Table 1.** Contrasting results from previous researches.

Source	Independent Variables	Dependent variable	Mediator	Country	Results
<b>Studies related to Countries Other Than Saudi Arabis</b>					
(Maali, Rakia, and Khaireddine, 2021)	Corporate Governance	Sustainable performance	Corporate Social Responsibility	UK	<ul style="list-style-type: none"> <li>• Corporate governance has a positive effect on sustainability performance</li> <li>• Corporate social responsibility fully mediates the relationship between corporate governance and sustainability performance.</li> </ul>
(Worokinasih and Zaini, 2020)	Firm Performance	Corporate Social Responsibility	Corporate Governance	Ethiopia	<ul style="list-style-type: none"> <li>• Corporate Governance acts as a mediator between Firm performance and corporate social responsibility.</li> </ul>
(Purbawangsa et al., 2020)	Corporate Governance	Firm Value	Corporate Social Responsibility	Indonesia	<ul style="list-style-type: none"> <li>• Corporate social responsibility doesn't have impact on firm value</li> </ul>
(Salhi et al., 2020)	Corporate Governance, Corporate Profitability,	Corporate Value	Corporate Social Responsibility	Indonesia, China, India	<ul style="list-style-type: none"> <li>• The mediation role of corporate social responsibility exists in all three countries</li> </ul>
(Mahrani and Soewarno, 2018)	Corporate Governance, Corporate Social Responsibility,	Corporate Performance	Earnings Management	Indonesia	<ul style="list-style-type: none"> <li>• Earnings management acts as a partial mediator for GCG mechanisms on financial performance and full mediator for CSR on financial performance.</li> </ul>
(Sial et al., 2018)	Board Gender Diversity	Firm Performance	Corporate Social Responsibility	China	<ul style="list-style-type: none"> <li>• Corporate social responsibility fully mediates the relationship between board gender diversity and firm performance</li> </ul>
(Wang and Sarkis, 2017)	CSR Governance	Financial Performance	CSR Outcomes	United States	<ul style="list-style-type: none"> <li>• CSR outcomes mediate the relationship between CSR governance and Financial Performance</li> </ul>
(Omer, Aljaaidi, and Habtoor, 2020)	Corporate Governance	Corporate Performance	Corporate Social Responsibility	UAE	<ul style="list-style-type: none"> <li>• Corporate social responsibility partially mediates the relationship between corporate governance and corporate performance.</li> </ul>

summary of their results. We can observe that CSR has been used as a mediator showing different results in developing and emerging markets but not specifically in Saudi Market.

This study expands the existing literature on the relationship between corporate governance and a firm's performance through incorporating the mediating effect of CSR into the context of the Kingdom of Saudi Arabia. Saudi Arabia is considered the hub of business in its area, and many firms in the Kingdom frequently

**Table 2.** Contrasting results from previous researches.

Studies Related to Saudi Arabia					
Source	Independent Variables	Dependent variable	Mediator	Country	Results
(Buallay et al., 2017)	Corporate Governance	Firm Performance	None	Saudi Arabia	<ul style="list-style-type: none"> <li>• No significant relationship found</li> </ul>
(Habbash, 2016)	Corporate Governance	Corporate Social Responsibility	None	Saudi Arabia	<ul style="list-style-type: none"> <li>• Government and family ownership, firm size and firm age are positive determinants of CSR disclosure,</li> <li>• Company leverage is a negatively related,</li> <li>• Effective AC, board independence, role duality, institutional ownership, firm profitability and industry type are unrelated to CSR disclosure.</li> </ul>
(Fallatah & Dickins, 2012)	Corporate Governance	Firm performance (ROA) Firm Value (ROE)	None	Saudi Arabia	<ul style="list-style-type: none"> <li>• Corporate Governance is unrelated to ROA</li> <li>• Corporate Governance is related to ROE</li> </ul>
Al-Matari et al. (2012)	Corporate Governance	Firm Performance	None	Saudi Arabia	<ul style="list-style-type: none"> <li>• The study contributed to knowledge by providing a general understanding how corporate governance is considered in emerging markets, particularly in Saudi Arabia. It enhanced an understanding about board composition, roles, responsibilities, meetings and size.</li> </ul>

invest in different environmental, social, and welfare activities. This study was conducted to determine whether this trend of investing in social activities is fruitful for companies or just a drain on their funds. Firstly, it investigates the relationships between corporate governance, corporate performance, and corporate social responsibility for a sample of domestic firms listed on the Saudi Arabian Stock Exchange. While past studies in Saudi Arabia have linked corporate governance and corporate performance, this study also explores the mediating effect of corporate social responsibility. It aims to provide a guide for executives regarding the investment in, adoption, and implementation of social activities. This work is another step forward in starting to understand the importance of CSR activities towards improving business performance, with special reference to the Saudi financial market. As we can see from **Table 2**, we could not find any study that used CSR as a mediator. CSR has been used as a mediator in other developed and emerging markets. So, our study used CSR as a mediator in the Saudi market and will try to fill that gap. To fill in these gaps, we hypothesize that:

**H<sub>01</sub>:** Random Effect test is the appropriate test-Hausman Test.

**H<sub>02</sub>:** Independent variables are exogeneous-Durban-WU-Hausman Test.

**H<sub>03</sub>:** There is a significant impact of Corporate Governance on Corporate Performance.

**H<sub>04</sub>:** There is no significant impact of Corporate Governance on Corporate Social Responsibility Disclosure.

**H<sub>05</sub>:** There is no significant impact of Corporate Social Responsibility on Corporate Performance.

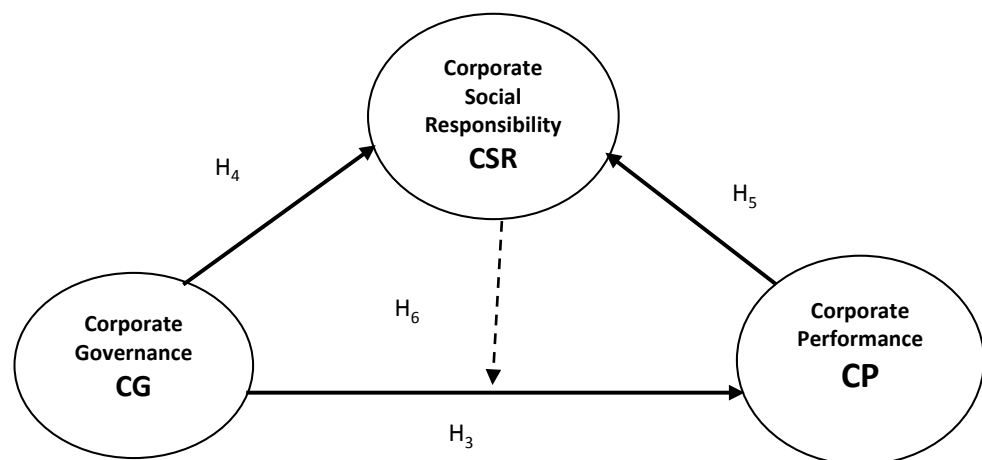
**H<sub>06</sub>:** Corporate Social Responsibility does not mediate the relationship between Corporate Governance and Corporate Performance.

On the basis of the above discussion and to test the hypotheses developed, the researchers proposed the model presented in **Figure 1**. This model incorporates all three of the study variables: corporate governance, corporate social responsibility, and corporate performance. The proposed model incorporates the direct link between corporate governance and corporate performance (**H<sub>03</sub>**), corporate governance and corporate social responsibility (**H<sub>04</sub>**), corporate social responsibility and corporate performance (**H<sub>05</sub>**), and further, it incorporates the mediating effect of CSR disclosure on the relationship between corporate governance and corporate performance (**H<sub>06</sub>**).

### 3. Methodology and Data Analysis

#### 3.1. Data Collection

This study spans over 11 years incorporating data for 2010-2020. The “purposive sampling” method was adopted in this study based on some considerations. From an initial population of 203 companies, those with corporate governance and corporate social responsibility disclosures (or separate form) were short listed. The final sample is comprised of 14 major representative companies in their respective sector. Data was extracted from audited annual reports, director’s reports, financial statements and notes to financial statements. This study considers only non-financial companies, as financial companies are subject to some different regulations and might cause misinterpretation of data. The audited



**Figure 1.** Conceptual model.

financial statements and annual reports of companies listed on Arabian stock exchange can be obtained from the website of Arabian Stock Exchange (<https://www.saudiexchange.sa/>) or from each company's website. The statistics for eligible-to-study firms (whose reports are available in English) is given in **Table 3**.

The following **Table 4** shows the list of companies included in the study and their sector.

The variables for which the values were not available were removed from the

**Table 3.** Statistics of sample firms.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Initial Total Firms</b>	<b>146</b>	<b>150</b>	<b>158</b>	<b>163</b>	<b>169</b>	<b>171</b>	<b>176</b>	<b>188</b>	<b>200</b>	<b>204</b>	<b>207</b>
<b>Less: Financial Firms</b>	-10	-10	-10	-10	-11	-11	-11	-11	-11	-11	-11
<b>Less: Insurance Firms</b>	-27	-28	-29	-30	-30	-30	-30	-30	-30	-30	-29
<b>Less: REITs</b>	0	0	0	0	-1	-2	-1	-7	-16	-17	-17
<b>Total Eligible Firms</b>	109	112	119	123	127	128	134	140	143	146	150
<b>Firms Selected</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>
<b>% Age of Selected to Total Eligible</b>	12.84%	12.50%	11.76%	11.38%	11.02%	10.94%	10.45%	10.0%	9.79%	9.59%	9.33%

**Table 4.** List of the Saudi companies included in our study.

	<b>Company</b>	<b>Sector</b>
1.	Aldrees	Energy
2.	Almarai	Consumer Goods
3.	Alujain	Materials
4.	Catering	Commercial & Professional Svc
5.	DaralArkan	Real Estate Mgmt. & Dev't
6.	Maaden	Materials
7.	Peter Rabigh	Energy
8.	Sabic	Materials
9.	Sadafco	Food & Beverages
10.	SaudiCables	Capital Goods
11.	Saudi Cement	Materials
12.	Savola	Food & Beverages
13.	Zain KSA	Telecommunication Services
14.	Zamil Indust	Materials

dataset. Moreover, the variable having zero variance or negative factor loading were also removed. The final set of constructs, and variables used to measure CG, CP and CSR are given in **Table 5**.

The corporate governance was analyzed through Board Size (BS), Board Meeting Frequency (BMF), Audit Committee Size (AUCS) and Ownership Concentration of major shareholders (OWNCON).

In order to assess the relationship between CG, and FP, the following models are drawn:

$$FP = f(CG)$$

**Table 5.** Description of variables.

Constructs	Variables	Measurement/Description
<b>Independent Variables</b>		
<b>Corporate Governance (CG)</b>	Board size (BS)	Number of directors on board
	Board meeting frequency (BMF)	Number of annual board meetings
	Audit committee size (AUCS)	Number of directors on audit committee
	Ownership concentration (OWNCON)	Percentage of total shares outstanding of largest shareholders (owning more than 10% of firm shares)
<b>Dependent Variables</b>		
<b>Corporate Performance (CP)</b>	Operational performance (ROA)	Net Income/Total Assets
	Financial performance (ROE)	Net Income/Shareholders' Equity
	Market performance (Tobin's Q)	(Market value of Equity/Book Value of Equity)
<b>Mediating Variables</b>		
<b>Corporate Social Responsibility (CSR)</b>	CSRDI	Ratio of no. of CSR items disclosed by a company in a given year in annual reports/CSR disclosure report to the total CSR items.
<b>Control Variables</b>		
	Company's Size (LnSize)	Measured by Natural log of Total Assets
	Company's Financial Leverage (FLEV)	Measured by Total Liabilities/Total Equity
	Company's Age (LnAge)	The number of years since incorporation.

Note: Banks, Insurance, REITs, Diversified Financials are Finance companies are subject to different rules and regulations as opposed to other sectors, So, not included in this analysis.

where corporate performance (CP) is a function of corporate governance (CG).

Panel regression model can be written as:

$$Y = \alpha_0 + \beta x + e \quad (1)$$

$$I = 1 \dots N \text{ and } t = 1 \dots T$$

where “ $I$ ” is cross-section dimensions ( $i = 1 \dots N$ ),  $t$  is time dimension (1, 5),  $Y$  is the dependent variable (CP) for companies  $I$  and period  $t$ ,  $x$  is a vector of explanatory variables,  $\beta$  is vector of parameters to be estimated and  $e$  is the error term. On the basis of research formulated the empirical model for banks  $I$  in period “ $t$ ” can be written as:

$$FP = \alpha_0 + \beta_1 CG + e \quad (2)$$

$$CSR = \alpha_0 + \beta_1 CG + e \quad (2a)$$

$$CSR = \alpha_0 + \beta_1 CP + e \quad (2b)$$

Further breaking corporate governance variable and adding mediating variable CSR in equation:

$$CP = \alpha_0 + \beta_1 BS + \beta_2 BMF + \beta_3 OWNCON + \beta_4 AUDCS + \beta_8 CSR + e \quad (3)$$

Learned from literature, the corporate performance was gauged through accounting and market-based measures. Accounting measures were used for gauging short term operational and financial performance through return on assets (ROA) and return on equity (ROE) respectively, while the market-based measures were used for gauging long term market performance through Tobin Q which was calculated as:

$$\text{TobinQ} = \frac{\text{Market value of equity}}{\text{Book value of equity}}$$

The mediating variable “corporate social responsibility” was measured through Corporate Social Responsibility Disclosure Index (CSDRI). In order to calculate CSRDI, this study used a checklist of CSR items taken from previous studies (Ezat et al., 2020). This checklist contains 7 CSR components that are: Environmental Component which includes 11 items, Employee Information component which includes 15 items, Community Involvement Information which includes 17 items, Products Information which includes 4 items, Customer Information which includes 6 items, Energy Information which includes 3 items, and finally Other Disclosures Regarding the Saudi Arabian Environment which includes 4 items. The CSRDI was estimated by means of un-weighted dichotomous scoring method; an item gets score of 1 if it is disclosed by the company, otherwise it gets 0. Scoring was based on content analysis of annual reports of the companies. Issuance of stand-alone CSR reports as proxy of non-financial disclosure plays a role complementary to financial disclosure as the issuance of stand-alone CSR reports is associated with lower analyst forecast error. This relationship is stronger in countries that are more stakeholder-oriented and for firms and countries with more opaque financial disclosure (Dhaliwal et al., 2012). The ad-



vantage of content analysis lies in its objectivity and replicability. The main disadvantage lies in the subjective choice of words. Moreover, disclosing items in reports does not guarantee that the companies are actually doing the same as they are writing in their reports (Kabir and Thai, 2017). The final CSRDI score was calculated as follows.

$$\text{CSRI} = \frac{\text{No. of CSR items disclosed by a company in a given year}}{\text{Total No. of Items in the List}}$$

The Company's size, company financial leverage and company's age were used as control variables.

## 3.2. Data Analysis

### 3.2.1. Results and Interpretation

This study uses the "SMART-PLS" to test the proposed hypotheses which have the ability of incorporating small samples for analysis. (Hair et al., 2019) recommended to use 11 times observations of number of indicators used in this study, which is true in this study (154 observations). Therefore, the data is sufficient to carry out analysis using SMART-PLS.

Common factor bias was checked through Herman's single factor test. This test revealed that a single factor solution only explains 23.91% of total variance, which is much below the threshold value of 50%. This result showed that common factor bias is not a problem in this study and the data is ready for further analysis.

Next, this part of the paper presents the results from data analysis using SMART-PLS. PLS SEM is comprised of two models; measurement model and structural model. The former is used to calculate reliability and validity of the construct whereas the latter is used to evaluate the significance of the hypotheses that are developed to test relationships among variable. The hypotheses subject to testing, in this case study, are the following:

### 3.2.2. Measurement Model and Its Assessment

The quality of constructs used in the study is evaluated through its measurement model that is based on factor's loadings and is followed by constructs reliability and validity.

#### ➤ Factor Loadings

The factor loadings measure the extent to which each item in the correlation matrix correlate to principal concept. Its value ranges from -1 to +1; the value closer to 1 shows high correlation whereas value closer to zero shows weak correlation. None of the items showed lesser value than threshold value of 0.5 recommended by Hair et al. (2019). The factor loading is presented in **Table 6**.

#### ➤ Indicator Multicollinearity

The values of VIF exhibit how much multicollinearity exists between indicators. The threshold value for VIF is 5. Multicollinearity is not an issue if its value is below 5 (Hair et al., 2019). All the VIF values, given in **Table 7** are below the

threshold value.

➤ **Reliability Analysis**

Stability and consistency of a scale is known as its reliability. The validity and reliability of an instrument is assessed through the most common method such as rho\_A and composite reliability. The threshold value for composite reliability is 0.7. The constructs' reliability values are above the threshold value as shown in **Table 8**.

➤ **Construct Validity**

Construct validity is established through (i) Convergent Validity and (ii) Discriminant Validity.

**Table 6.** Factor loadings.

	Age	CP	CG	CSR	FLEV	Size
AUCS			<b>0.674</b>			
BMF			<b>0.493</b>			
BS			<b>0.512</b>			
CSRDI				<b>1.000</b>		
ComFL					<b>1.000</b>	
LnAge	<b>1.000</b>					
LnSize						<b>1.000</b>
OWNCON			<b>0.841</b>			
ROA		<b>0.950</b>				
ROE		<b>0.902</b>				
TobinQ		<b>0.783</b>				

**Table 7.** Multicollinearity statistics for indicators.

	VIF
AUCS	<b>1.348</b>
BMF	<b>1.193</b>
BS	<b>1.136</b>
CSRDI	<b>1.000</b>
ComFL	<b>1.000</b>
LnAge	<b>1.000</b>
LnSize	<b>1.000</b>
OWNCON	<b>1.187</b>
ROA	4.756
ROE	3.673
TobinQ	<b>1.730</b>

**Table 8.** Construct reliability analysis (rho\_A, Composite Reliability).

	rho_A	Composite Reliability
Age	1.000	1.000
CP	0.865	0.912
CG	0.700	0.731
CSR	1.000	1.000
FLEV	1.000	1.000
Size	1.000	1.000

**(i) Convergent Validity**

Its assesses the degree of covariance between indicators of the same construct. The higher absolute value shows high degree of covariance and vice versa. It is measure through AVE values. All the constructs in this study have AVE values greater than the threshold value of 0.5, except corporate governance construct. However, the composite reliability value for CG is above the threshold value of 0.7. Hence, the convergent validity is acceptable. **Table 9** shows the AVE values for the constructs of the study.

**(ii) Discriminant Validity**

It measures the degree of uniqueness found between different constructs. It is established through *Fornell and Larckert criterion*; the square root of AVE of a construct is higher than its correlation with other constructs. Based on analysis, the constructs in this study have shown discriminant validity (**Table 10**).

**➤ Cross loadings**

The values in cross loading represent the strength of relationship of items with their underlying construct instead of other constructs. Highlighted values in **Table 11** shows values of factor loadings for factors and are stronger on the construct to which they belong instead of other constructs. Hence, discriminant validity is established.

**➤ Heterotrait Monotrait Ratio (HTMT)**

It shows the degree of correlation between constructs. Different studies reported different threshold values i.e., it should be less than 0.85 or 0.9. The HTMT ratios in this study lie below the threshold value, hence, discriminant validity establishes as shown in **Table 12**.

**➤ Goodness of Fit**

In order to check predictive capabilities of the model, the coefficient of determination ( $R^2$ ), effect size ( $F^2$ ) was analyzed. The results gave  $R^2$  equal to 0.553 (**Table 13**) for CP which shows 55.3% variation in CP is due to CG and CSR. The value of  $R^2$  is greater than cut-off value of 0.1.

In this study, two predictors were used to assess their influence on CP. According to **Hair et al. (2019)**, it is recommended to assess  $F^2$  too, which is used to determine the effect of removal of an independent variable from the model on

**Table 9.** Of AVE for construct convergent validity.

	Original Sample (O)
CP	0.776
CG	0.417
COMAGE	1.000
COMSIZE	1.000
CSR	1.000
FLEV	1.000

**Table 10.** Discriminant validity-Fornell and Larcket criterion.

	Age	CP	CG	CSR	FLEV	Size
<b>Age</b>	<b>1.000</b>					
CP	0.460	<b>0.881</b>				
CG	-0.239	0.110	<b>0.645</b>			
CSR	0.070	0.191	0.451	<b>1.000</b>		
FLEV	-0.358	-0.650	-0.123	-0.224	<b>1.000</b>	
Size_	-0.374	-0.238	0.580	0.557	0.062	<b>1.000</b>

Note: The highlighted values, in the table above, are the square root of the AVE values.

**Table 11.** Of cross loadings for discriminant validity.

	Age	CP	CG	CSR	FLEV	Size
AUCS	0.041	0.005	0.674	0.183	-0.096	0.229
BMF	0.038	-0.100	0.493	0.184	-0.021	0.200
BS	-0.176	0.078	0.512	0.200	-0.229	0.305
OWNCON	-0.304	0.160	0.841	0.451	-0.037	0.573
CSRDI	0.070	0.191	0.451	1.000	-0.224	0.557
ComFL	-0.358	-0.650	-0.123	-0.224	1.000	0.062
LnAge	1.000	0.460	-0.239	0.070	-0.358	-0.374
LnSize	-0.374	-0.238	0.580	0.557	0.062	1.000
ROA	0.428	0.950	0.011	0.039	-0.564	-0.366
ROE	0.339	0.902	0.133	0.203	-0.700	-0.178
TobinQ	0.464	0.783	0.152	0.274	-0.430	-0.072

the dependent variable. Based on analysis, it is obvious (**Table 14**) that the removal of CG would have a significant effect on CSR and removal of FLEV would have on CP.

**Table 12.** Discriminant validity—HTMT ratio.

	Age	CP	CG	CSR	FLEV	Size
Age						
CP	0.506					
CG	0.274	0.226				
CSR	0.070	0.212	0.500			
FLEV	0.358	0.696	0.188	0.224		
Size	0.374	0.253	0.642	0.557	0.062	

**Table 13.** Coefficient of determination.

	Original Sample (O)	Sample Mean (M)	STDEV	TStatistics	PValues
CP	0.553	0.568	0.053	10.469	0.000
CSR	0.203	0.211	0.042	4.807	0.000

**Table 14.** Effect size.

	Original Sample (O)	STDEV	TStatistics	PValues
CG -> CP	0.072	0.080	0.908	0.364
CG -> CSR	0.255	0.069	3.677	0.000
COMAGE -> CP	0.052	0.037	1.406	0.160
COMSIZE -> CP	0.133	0.070	1.889	0.059
CSR -> CP	0.033	0.030	1.095	0.274
FLEV -> CP	0.444	0.131	3.393	0.001

In addition, SRMR-Standardized Root Mean Square Residual is also used to assess goodness of fit. The threshold value for SRMR is 0.8 or 0.10. The SRMR value that is less than or equal to the threshold value is considered a good fit. In this study the value is 0.10.

Overall, the reliability and validity test performed to test measurement model are satisfactory, suggesting that the items used to measure constructs in this study are valid and fit to measure predictive parameters in the structural model.

### 3.2.3. Testing of Hypotheses

First of all, we will discuss the hypotheses related to Hausman test and see which model is suitable for this study. Second, we will see if any of the independent variable's is endogenous, that will help us to decide which of the two methods will be used for this study, i.e., Ordinary Least Square (OLS) or Two Stage Least Square (TSLS).

**H<sub>01</sub>: Random tests are independent of explanatory variables.**

The Hausman test is used to differentiate between fixed effects model and

random effects model in panel analysis. In this case, Random effects (RE) is preferred under the null hypothesis due to higher efficiency, while under the alternative Fixed effects (FE) is at least as consistent and thus preferred. If the  $p$ -value is significant (for example  $< 0.05$ ) then use fixed effects, if not use random effects (Tables 15-17).

**Table 15.** Hausman test with-ROA as dependent variable.

Correlated Random Effects—Hausman Test				
Equation: Untitled				
Test period random effects				
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Period random	5.694888	4	0.2231	
WARNING: estimated period random effects variance is zero.				
Period random effects test comparisons:				
Variable	Fixed	Random	Var (Diff.)	Prob.
AUCS	-0.201434	-0.522662	0.021889	0.0299
BMF	-1.539572	-1.251433	0.018154	0.0325
BS	1.079440	1.033327	0.005564	0.5364
OWNCON	0.026986	0.031651	0.000008	0.0899
Period random effects test equation: Dependent Variable: ROA				
Method: Panel Least Squares Sample: 2010 2020				
Periods included: 11				
Cross-sections included: 14				
Total panel (unbalanced) observations: 154				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.638639	4.936070	0.737153	0.4623
AUCS	-0.201434	0.644691	-0.312450	0.7552
BMF	-1.539572	0.582557	-2.642785	0.0092
BS	1.079440	0.552404	1.954078	0.0528
OWNCON	0.026986	0.036318	0.743033	0.4588
Effects Specification				
Period fixed (dummy variables)				
R-squared	0.096085	Mean dependent var	6.437279	
Adjusted R-squared	0.000215	S.D. dependent var	9.513824	
S.E. of regression	9.512800	Akaike info criterion	7.439604	
Sum squared resid	11945.12	Schwarz criterion	7.744751	
Log likelihood	-531.8109	Hannan-Quinn criter.	7.563589	
F-statistic	1.002247	Durbin-Watson stat	0.241128	
Prob (F-statistic)	0.454953			

**Table 16.** Hausman test with-ROE as dependent variable.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	8.595263	4	0.0721

Correlated Random Effects—Hausman Test  
Equation: Untitled  
Test period random effects

WARNING: estimated period random effects variance is zero.  
Period random effects test comparisons:

Variable	Fixed	Random	Var (Diff.)	Prob.
BS BMF AUCS	2.843283	2.631495	0.026531	0.1935
OWNCON	-1.975466	-1.350712	0.086570	0.0337
	-0.340341	-1.177608	0.104379	0.0096
	0.146938	0.160322	0.000036	0.0259

Period random effects test equation: Dependent Variable: ROE  
Method: Panel Least Squares Sample: 2010 2020  
Periods included: 11  
Cross-sections included: 14  
Total panel (unbalanced) observations: 154

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C BS BMF AUCS	-13.90848	10.77895	-1.290337	0.1992
OWNCON	2.843283	1.206291	2.357046	0.0199
	-1.975466	1.272136	-1.552873	0.1228
	-0.340341	1.407819	-0.241750	0.8093
	0.146938	0.079308	1.852739	0.0662

Effects Specification

Period fixed (dummy variables)

R-squared	0.118848	Mean dependent var	7.623537
Adjusted R-squared	0.025392	S.D. dependent var	21.04208
S.E. of regression	20.77321	Akaike info criterion	9.001656
Sum of squared resid	56961.45	Schwarz criterion	9.306802
Log likelihood	-646.6217	Hannan-Quinn criter.	9.125640
F-statistic	1.271705	Durbin-Watson stat	0.519173
Prob (F-statistic)	0.233233		

The results of the Hausman Random Effect Model are shown in **Tables 15-17**. As the  $p$  value is greater than 0.05 in all three situations examined above, Random tests are independent of explanatory variables. As a result, the results support the RE model. The RE and FE estimators of  $\beta$  will converge to the same result if the specific effects are random, but the RE estimator is more efficient.

All the three equations developed are given below:

$$D(\text{ROA}) = C(1) + C(2) * \text{BS} + C(3) * \text{BMF} + C(4) * \text{AUCS} + C(5) * \text{OWNCON}$$

$$D(\text{ROE}) = C(1) + C(2) * \text{BS} + C(3) * \text{BMF} + C(4) * \text{AUCS} + C(5) * \text{OWNCON}$$

**Table 17.** Hausman test with-TobinQ as dependent variable.

Correlated Random Effects—Hausman Test  
Equation: Untitled  
Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	2.860933	4	0.5814

WARNING: estimated period random effects variance is zero.  
Period random effects test comparisons:

Variable	Fixed	Random	Var (Diff.)	Prob.
BS	-0.072334	-0.025366	0.000815	0.1000
BMF	-0.399033	-0.392908	0.002661	0.9055
AUCS	0.092175	0.106620	0.003208	0.7987
OWNCON	0.034930	0.033933	0.000001	0.3440

Period random effects test equation:  
Dependent Variable: TOBINQ Method:  
Panel Least Squares  
2010 2020  
Periods included: 11  
Cross-sections included: 14  
Total panel (unbalanced) observations: 154

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.389343	1.889672	2.851999	0.0050
BS	-0.072334	0.211476	-0.342043	0.7329
BMF	-0.399033	0.223020	-1.789228	0.0759
AUCS	0.092175	0.246807	0.373470	0.7094
OWNCON	0.034930	0.013904	2.512277	0.0132

**Effects Specification**

Period fixed (dummy variables)

R-squared	0.108570	Mean dependent var	4.713061
Adjusted R-squared	0.014025	S.D. dependent var	3.667587
S.E. of regression	3.641778	Akaike info criterion	5.519272
Sum squared resid	1750.656	Schwarz criterion	5.824418
Log likelihood	-390.6665	Hannan-Quinn criter.	5.643256
F-statistic	1.148336	Durbin-Watson stat	0.194103
Prob (F-statistic)	0.322815		

$$D(\text{TOBINQ}) = C(1) + C(2) * \text{BS} + C(3) * \text{BMF} + C(4) * \text{AUCS} + C(5) * \text{OWNCON}$$

**H<sub>02</sub>: Independent variables are exogeneous**

Endogeneity, which is an essential assumption in any Classical Linear Regression Model, is a concern in many sectors of business and management research that rely on regression analysis to draw causal inference (CLRM). Endogeneity is assessed using the Durbin-WU-Hausman test (augmented regression test) or the



Hausman Specification test. We'll utilize TSLS (Two Stage Least Square) instead of OLS to produce unbiased and consistent findings asymptotically once we have evidence of endogeneity.

The following latent variables Corporate Governance had endogeneity, as evidenced by the results. As a result, we'll employ TSLS rather than OLS. The endogeneity test (Durbin-WU-Hausman Test) results are shown below, illustrating the endogenous factors in our three equations with various dependent variables such as ROA, ROE and TobinQ.

**Table 18** shows the results of the Durbin-WU-Hausman Endogeneity Test among the independent variables. A few independent variables with  $p$  values less than 0.05 indicate endogeneity, indicating that the null hypothesis is rejected. This test helps us decide whether to use OLS or TSLS. We have found the endogeneity among our independent variables, so we will use TSLS.

Due to endogeneity among our independent variables, we will apply the TSLS. The results of TSLS for all the three dependent variables are as follows (**Table 19-21**):

**Table 18.** Results of Durbin-WU-Hausman endogeneity test.

Dependent Variable	ROA		ROE		TobinQ	
	Durbin Score Chi2	WU-Hausman	Durbin Score Chi2	WU-Hausman	Durbin Score Chi2	WU-Hausman
BS	0.3915	0.000*	<b>0.0271*</b>	<b>0.0288*</b>	0.9005	0.9024
AUCS	0.3327	0.3394	0.2672	0.2753	<b>0.0033*</b>	<b>0.0035*</b>
BMF	<b>0.0442*</b>	<b>0.0441*</b>	0.0646	0.0681	0.2309	0.2370
OWNCON	0.7119	0.7116	<b>0.0413*</b>	<b>0.0438*</b>	0.8380	0.8405

\*Variables where endogeneity exist.

**Table 19.** TSLS with "roa" as dependent variable

ROA	Coef.	St. Err.	$t$ -value	$p$ -value	[95% Conf Interval]	Sig
AUCS	-0.59	0.616	-0.96	0.34	-1.808 0.628	
BMF	-1.254	0.558	-2.25	0.026	-2.356 -0.152	**
BS	0.995	0.538	1.85	0.067	-0.07 2.059	*
OC	0.044	0.037	1.19	0.238	-0.029 0.117	
Constant	3.906	4.77	0.82	0.414	-5.523 13.335	
Mean dependent var		6.437		SD dependent var		9.514
R-squared		0.058		Number of obs		154
F-test		2.182		Prob > F		0.074

\*\* $p < 0.05$ , \* $p < 0.1$ .

**Table 20.** 2SLS with “roe” as dependent variable.

ROE	Coef.	St. Err.	t-value	p-value	[95% Conf Interval]	Sig
AUCS	-1.335	1.355	-0.99	0.326	-4.014 1.344	
BMF	-1.346	1.226	-1.10	0.274	-3.77 1.079	
BS	2.446	1.184	2.07	0.041	0.106 4.787	**
OC	0.193	0.081	2.38	0.019	0.033 0.353	**
Constant	-11.259	10.492	-1.07	0.285	-31.999 9.482	
Mean dependent var		7.624		SD dependent var	21.042	
R-squared		0.068		Number of obs	154	
F-test		2.602		Prob > F	0.039	

\*\* $p < 0.05$ .

**Table 21.** 2SLS with TobinQ as dependent variable.

TobinQ	Coef.	St. Err.	t-value	p-value	[95% Conf Interval]	Sig
AUCS	0.161	0.238	0.68	0.5	-0.31 0.632	
BMF	-0.383	0.215	-1.78	0.078	-0.809 0.043	*
BS	-0.059	0.208	-0.29	0.775	-0.471 0.352	
OC	0.027	0.014	1.92	0.057	-0.001 0.055	*
Constant	5.231	1.843	2.84	0.005	1.587 8.876	***
Mean dependent var		4.713		SD dependent var	3.668	
R-squared		0.053		Number of obs	154	
F-test		1.995		Prob > F	0.098	

\*\*\* $p < 0.01$ , \* $p < 0.1$ .

First table is showing results of TSLS with ROA, second one for the ROE and third one is with TobinQ as dependent variable.

**Estimated Equation:**

$$D(\text{ROA}) = C(1) + C(2) * \text{AUCS} + C(3) * \text{BMF} + C(4) * \text{BS} + C(5) * \text{OWNCON}$$

**Substituted Coefficients:**

$$\text{ROA} = 3.906 - 0.59 * \text{AUCS} - 1.254 * \text{BMF} + 0.995 * \text{BS} + 0.044 * \text{OWNCON}$$

Value of  $R^2$  (Coefficient of Determination) is 0.058 which means that one unit change in “IV” will bring 5.8% change in the dependent variable which is Return on Asset in the above-mentioned case.

**Estimated Equation**

$$D(\text{ROA}) = C(1) + C(2) * \text{AUCS} + C(3) * \text{BMF} + C(4) * \text{BS} + C(5) * \text{OWNCON}$$

**Substituted Coefficients:**

$$\text{ROA} = -11.259 - 1.335 * \text{AUCS} - 1.346 * \text{BMF} + 2.446 * \text{BS} + 0.193 * \text{OWNCON}$$

Value of  $R^2$  (Coefficient of Determination) is 0.068 which means that one unit change in “IV” will bring 6.8% change in the dependent variable which is operating profit in the above-mentioned case.

**Table 20** is showing results of TSLS with TobinQ as dependent variable.

Due to endogeneity among our independent variables, we used TSLS. **Tables 11-13** are showing results of TSLS. Hence, estimated equations are mentioned under each table.

#### Estimated Equation

$$D(\text{Tobin Q}) = C(1) + C(2) * \text{AUCS} + C(3) * \text{BMF} + C(4) * \text{BS} + C(5) * \text{OWNCON}$$

#### Substituted Coefficients:

$$D(\text{Tobin Q}) = 5.231 + 0.161 * \text{AUCS} - 0.383 * \text{BMF} - 0.059 * \text{BS} + 0.027 * \text{OWNCON}$$

Value of  $R^2$  (Coefficient of Determination) is 0.053 which means that one unit change in “IV” will bring 5.3% change in the dependent variable which is TobinQ in the above-mentioned case.

Now we will check for the impact of mediator CSR on the relation between the Corporate Governance and financial performance. In order to find out the mediating impact of CSR between the CG and FP our hypotheses will be as follows.

**H<sub>06</sub>:** There is no mediating effect of M (Mediator: Corporate Social Responsibility-CSR) on relationship between “X” (Independent Variable-Corporate Governance-CG) and “Y” (Dependent Variable-Corporate Performance-CP).

#### 3.2.4. Structural Model

The Structured Equation Model (SEM) is used to test the hypotheses.

**H<sub>3</sub>:** There is no significant impact of Corporate Governance on Corporate Performance.

The results revealed that CG has a significant effect on CP ( $\beta = 0.230$ ,  $t = 2.242$ ,  $p < 0.05$ ). Hence, H<sub>3</sub> was supported.

**H<sub>4</sub>:** There is no significant impact of Corporate Governance on Corporate Social Responsibility.

The results revealed that CG has a significant effect on CSR ( $\beta = 0.451$ ,  $t = 9.703$ ,  $p < 0.05$ ). Hence, H<sub>4</sub> was supported.

**H<sub>5</sub>:** There is a significant impact of Corporate Social Responsibility on Corporate Performance.

The results revealed that CSR has a significant effect on CP ( $\beta = 0.163$ ,  $t = 2.425$ ,  $p < 0.05$ ). Hence, H<sub>5</sub> was (not) supported. The results of Hypotheses confirmation are given in **Table 22**.

#### 3.2.5. Mediation Analysis

**H<sub>6</sub>:** Corporate Social Responsibility does not mediate the relationship between Corporate Governance and Corporate Performance.

Mediation analysis was performed to evaluate the mediating effect of CSR.

The results (see **Table 23**) revealed that CSR partially mediates the relationship between CG and CP ( $\beta = 0.074$ ,  $t = 2.141$ ,  $p < 0.05$ ). Hence,  $H_4$  is supported. The total effect of CG on CP is significant ( $\beta = 0.303$ ,  $t = 3.238$ ,  $p < 0.05$ ). With the inclusion of CSR, the direct effect is also significant ( $\beta = 0.230$ ,  $t = 2.242$ ,  $p < 0.05$ ). Hence, CSR acts as a partial mediator. The results are organized in **Table 23** and the structural model is given in **Figure 2**.

#### 4. Results and Findings

Random Effect Model was confirmed as a suitable model for our data rather than the Fixed Effect Model. Endogeneity existed among the independent variables therefore we used TSLS instead of OLS and discussed.

There is a statistically significant relation between CG and corporate performance of the companies. Overall relation of CG with corporate performance was significant. CG is also statistically significant and positive relation with CSR, whereas, CSR is statistically significant but negative relation with corporate performance. This confirms the existence of the role of CSR as a partial mediator.

#### Discussion

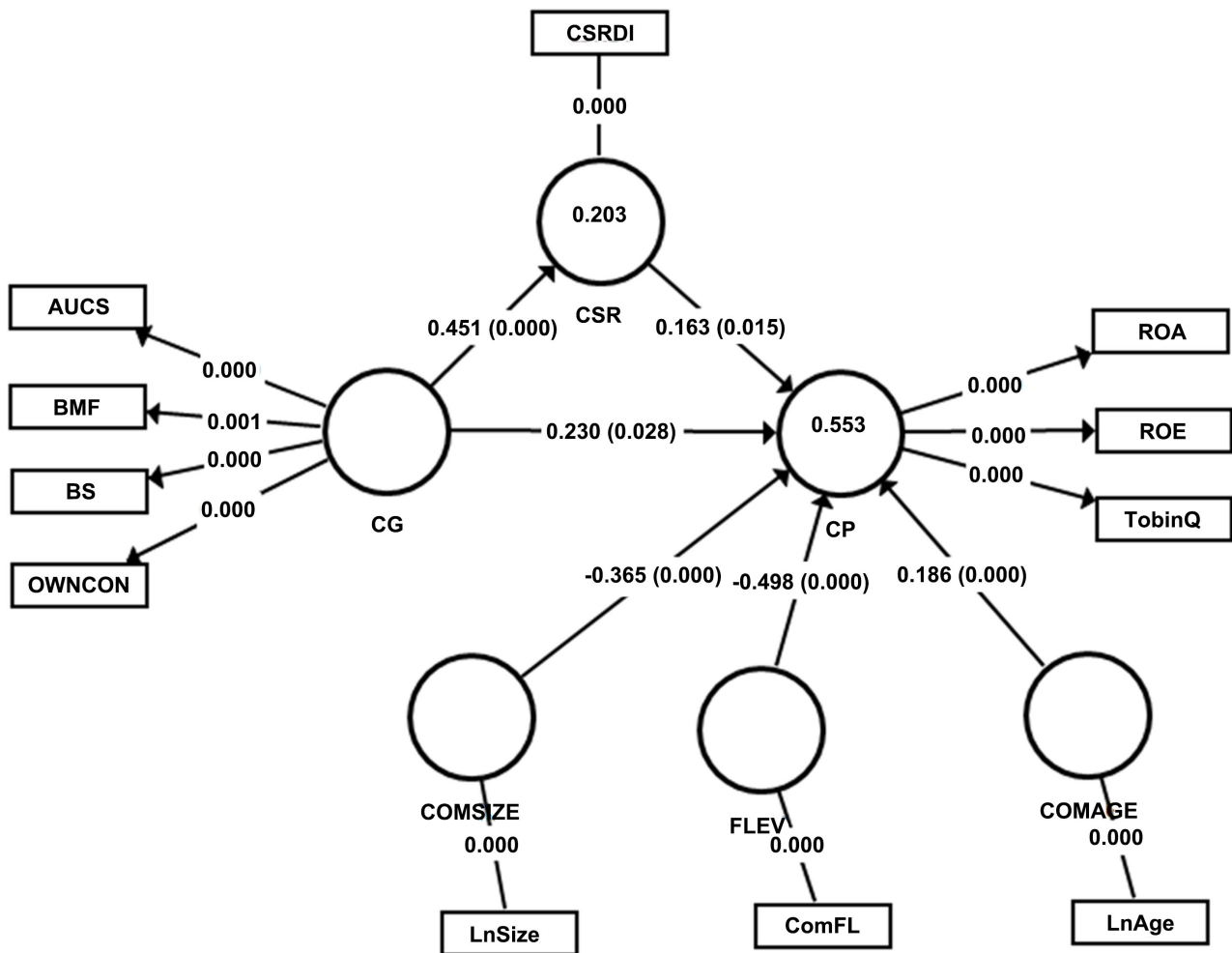
Corporate governance has a significant effect on corporate performance ( $H$ :  $\beta = 0.230$ ,  $t = 2.242$ ,  $p < 0.05$ ), confirming the earlier studies by (Fallatah & Dickins, 2012) and (Bazhair, 2021) and negating (Buallay et al., 2017). The confirmation of  $H_3$  supports the notion that those companies that actively focus on CG practices outperform operationally, financially and in market-based terms.

**Table 22.** Path coefficients.

Hypotheses		Beta Coefficients	STDEV	T Statistics	P Values	Status
$H_1$	CG -> CP	0.230	0.103	2.242	0.025	Confirmed
$H_2$	CG -> CSR	0.451	0.046	9.703	0.000	Confirmed
$H_3$	CSR -> CP	0.163	0.067	2.425	0.016	Confirmed
	FLEV -> CP	-0.498	0.049	10.158	0.000	
	COMAGE -> CP	0.186	0.058	3.192	0.002	
	COMSIZE -> CP	-0.365	0.079	4.631	0.000	

**Table 23.** Mediation results.

Total Effect (CG -> CP)		Direct Effect (CG -> CP)		Indirect Effect (CG -> CP)				Hypothesis Status	
Coefficient	P Value	Coefficient	P Value	Coefficient	SDEV	T Value	P Value		
0.303	0.001	0.230	0.025	$H_4$ : CG -> CSR->CP	0.074	0.034	2.141	0.033	Confirmed



**Figure 2.** Structural model ( $P$ values).

Corporate governance has a significant effect on corporate social responsibility ( $H_2$ ;  $\beta = 0.451$ ,  $t = 9.703$ ,  $p < 0.05$ ), confirming the previous finding of (Habash, 2016). This finding aligns with stakeholder theory which states that companies, instead of creating value for their shareholders, focus on the interest of all stakeholders including society in which these companies operate. Companies recognize the fact that their activities affect the society and this recognition leads them to invest and contribute in social and environmental activities intended for society's improvement. Corporate social responsibility disclosure is actually the implementation of corporate governance principles on the social environment; therefore, good corporate governance leads towards higher disclosure of CSR initiatives in the annual reports of the companies.

Corporate social responsibility has a significant effect on corporate performance ( $H_3$ ;  $\beta = 0.163$ ,  $t = 2.425$ ,  $p < 0.05$ ), confirming the findings of the following researches (Omer et al., 2020; Javaid and Al-Malkawi, 2018; Dkhili and Dhiab 2019; Lau, Lu, and Liang, 2016; Su et al., 2016). This result confirms the notion exerted by signaling theory; firms try to reduce information asymmetries

between them and their stakeholders by disclosing information about their social-oriented activities which leads to repay firms in the form of increased operational and financial returns (Su et al., 2016).

Corporate social responsibility has mediating effect on the relationship between corporate governance and corporate performance ( $H_4$ :  $\beta = 0.074$ ,  $t = 2.141$ ,  $p < 0.05$ ) Corporate social responsibility acts as a partial mediator that strengthens the effect of corporate governance to enhance business performance. Corporate governance bodies of firms put pressure on firms' management to disclose information regarding their investment and engagement in social activities either in their annual reports or standalone CSR reports, which reduces the information asymmetries between firms and their stakeholders. This leads the firms win hearts of various stakeholders which reflect in firms' improved sales and performance depicted by their improved ROA, ROE and TobinQ. **Table 2** presents the findings of current and previous related researches.

The findings for overall data revealed a positive and direct relationship between CG and CP (**H<sub>3</sub> accepted**). The confirmation of H<sub>3</sub> supports the notion that those companies that actively focus on CG practices outperform operationally, financially and in market-based terms. There is positive direct relationship between CG and CSR (**H<sub>4</sub> accepted**). This finding supports the stakeholder theory which emphasize on the interests of various stakeholder groups, instead of only shareholders. CSR was found to have a positive direct link with CP (**H<sub>5</sub> accepted**). This result confirms the notion exerted by signaling theory; firms try to reduce information asymmetries between them and their stakeholders by disclosing information about their social-oriented activities which leads to repay firms in the form of increased financial returns (Su et al., 2016). The overall data analysis revealed CSR as a partial mediator for the relationship between CG and CP (**H<sub>6</sub> accepted**). The findings of this study imply that investing in social and environmental activities reflect in corporate performance as indicated by ROA, ROE, and TobinQ. Therefore, the management should focus their efforts on social activities in order to outperform operationally and financially.

The empirical result is authentic and verifiable but not without limitation. First, this research only uses the data of only those domestic companies listed on Saudi Arabian stock exchange for which data is readily available that may create different results when incorporating data for more or all companies. Secondly, this research used CSRDI as a sole proxy to overall corporate social responsibility and confirms the hypothesis about the mediating role of CSR upon CG and CP, hence, ignores the effect of individual indicators of CSR (i.e., environmental employee, product, community involvement etc.).

## 5. Conclusion

This study is an initiative to start considering and incorporating the effect of corporate social responsibility while formulating effective corporate governance

strategies to maximize stakeholder benefits. This study covers 14 major companies listed on Saudi exchange to reveal partial effect of corporate social responsibility on corporate governance and corporate performance, which proved true.

Firms' involvement in CSR activities tends to instill favorable customer attitudes required to increase sales and hence, profitability, ROA, ROE, and TobinQ based on market value of a firm. The firms in the kingdom should invest in CSR practices to build and sustain a strong relationship with its stakeholders.

Management should also focus on having good corporate governance mechanisms in place to improve company's performance by supervising and monitoring of the company's operations and to ensure the fulfillment to the stakeholder's interest. The firms in the kingdom are, therefore, suggested to concentrate on socially oriented activities.

### 5.1. Implications

Theoretically, this study contributes to our understanding of some related concepts that have not been explored in previous researches concerning CG, CP and CSR in reference to Saudi listed companies.

Hence, trying to developing a better understanding of the impact of CG on CP through CSR is the key contribution to the literature.

As far as managerial implications are concerned, it is evident from this research that CG affects CP through CSR. The direct as well as indirect relationship between CG and CP is significant. This can be deduced from this finding that CSR partially contribute to enhance a firm's performance in Saudi context.

### 5.2. Study Limitations

This study investigates the relationships among corporate governance, corporate social responsibility and corporate performance and confirms the mediator role of corporate social responsibility on the relationship between the other two. The empirical result is authentic and verifiable but not without limitation.

1) First, this research only uses the data of only those domestic companies listed on Saudi Arabian stock exchange for which data is readily available in English language and may create different results when incorporating data for more or all companies.

2) Secondly, this research used CSRDI as a sole proxy to overall corporate social responsibility and confirms the hypothesis about the mediating role of CSR upon CG and CP, hence, ignores the effect of individual indicators of CSR (i.e., environmental employee, product, community involvement etc.) on CG and CP.

3) Different modes of collecting data were not used to know the real scenario.

4) This study uses three measures for financial performance (ROA, ROR and TobinQ), while other measures of performance are not included.

5) CSR is a recent phenomenon; therefore, only latest years data were included so that CSR data is available.

6) Only published data is used to measure CSR, there is a gap to examine ac-

tual CSR activities.

7) Non-financial impacts of CSR (effect on brand image and customer trust, which leads to customer loyalty) were not included in the study, as emphasized by, who argued that the majority of research has been done on economic performance scenarios and insisted on including non-financial outcomes of CSR.

8) Data availability in developing economies is still difficult, therefore, more effort is required to establish a large database on governance and CSR data.

9) Customers in different cultures see CSR efforts differently, this type of research may yield different results in different countries.

10) Because consumers in different cultures see CSR efforts differently, doing this type of research in other developing nations may yield different results.

### **5.3. Future Directions**

1) Researchers can also analyse the lagged influence of CG and leverage on CSR activities, as well as social and financial performance, using the longitudinal data set.

2) Financial, operational, and marketing performance can all be included in corporate studies. Other aspects of performance could be evaluated as well.

3) Because it is not clearly articulated in literature, especially in the context of emerging economies, the notion of CG is suited to explain a firm's CSR performance. There is a conceptual and empirical research gap that could be filled in the future.

4) You can study level of investment required in CSR for achieving optimal performance by companies so that demand of different stakeholders can be met.

5) Most of the researches are done on financial and operating performances of firms, there is a gap to study the impact of corporate governance on non-financial indicators such as customer trust, brand image and loyalty.

6) Several studies have been conducted on the overall performance of companies in a certain industry that are publicly traded in a country.

7) The research should focus on different industrial sectors to examine if the results of different industries in a country are consistent or vary. In future investigations, Type of Industry could be used as a moderator.

8) The potential researchers might consider large sample size to verify the results.

9) In order to deal with human error, inescapable in collecting primary data, the future studies can also use ESG (Environmental, Social and Governance) rankings of companies issued by various international agencies (i.e., Moody's and S&P Global) as a standardized proxy to corporate social responsibility to verify mediating effect of the same.

### **Conflicts of Interest**

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



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## **List of Abbreviations**

- CG:** Corporate Governance  
**CSR:** Corporate Social Responsibility  
**BS:** Board Size, (BMF)  
**BMF:** Board Meeting Frequency  
**AUCS:** Audit Committee Size  
**ROA:** Return on Assets  
**ROE:** Return on Equity  
**AUCMF:** Audit Committee Meeting Frequency  
**OWNCON:** Ownership Concentration  
**CDLTY:** CEO Duality  
**BS:** Board Size  
**AQ:** Audit Quality  
**SEM:** Structured Equation Modelling  
**FEM:** Fixed Effect Model  
**REM:** Random Effect Model  
**CP:** Corporate Performance  
**LnSize:** Company Size  
**FLEV:** Financial Leverage  
**TSLs:** Two Stage Least Square  
**OLS:** Ordinary Least Square