



# The Role of Corporate Social Responsibility, Ownership Structure, and Gender Diversity in Firm Performance

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## ABSTRACT

Corporate social responsibility (CSR) is now at the heart of corporate sustainability, and as such should have a significant impact on firm performance. However, the ownership structure (OS) is one element in the inner functioning of corporate governance (CG). Further, diversity by gender is one of the variables affecting FP. This paper examines the impact of CSR, ownership structure and gender diversity on FP. That is, we use panel data from non-financial firms in South Asian economies. Data for the years 2010-2022 are drawn from players 'DataStream. We use fixed effect, GMM (generalized method of moments) analysis and propensity score matching to study the data. However, we discover CSR and ownership concentration as well as institutional ownership and gender diversity have positive impacts on FP. study provides the policy implications for both investors and firms. As FP increases with more CSR activities, investors prefer to invest in firms that are more socially connected. Firms should provide more chances to the women on the board to improve performance. Further, ownership structure helps to overcome agency costs, therefore, investors are more attracted to provide funds to the firms that have a higher share of concentrated and institutional ownership.

**Keywords:** Corporate Social Responsibility, Ownership Concentration, Institutional Ownership, Gender Diversity, Firm Performance

**JEL Classifications:** G30, G32, G34

## 1. INTRODUCTION

In recent years, firms have paid more attention to sustainability, and socially responsible investors have been taking a significant interest in firms' social activities. Corporate social responsibility (CSR) embeds the idea of "doing good" into the firm's business models. Accordingly, the firm gives special attention to social activities including being socially and environmentally responsible; promoting, equality, and inclusion in the workplace; supporting sustainable legislation, giving back to the community; and ensuring business decisions are ethical (Mallouh and Tahtamouni, 2018). Businesses use CSR to get a competitive advantage and build a sustainable association with stakeholders (Hunjra et al., 2021). Firms engaging in CSR activities enjoy moral prospects of the society with effective business operations, and provide more transparency in financial reporting and moral standards (Lee, 2016).

Interestingly, firms engaged in CSR activities, perform their tasks for the betterment of society through good corporate governance practices, which are key elements that describe the firm decision of voluntary disclosure from the perspective of agency theory (Samaha et al., 2012). For the effective proper application of CSR practices, it is vital to work with efficient corporate governance. Evidence suggests that implementing good CG practices tends to have a beneficial role in achieving FP and survival of firms. Generally, corporate governance regulates the board of directors' actions while they monitor the activities of the management to increase shareholders' value.

However, if firms are managed carefully, the value of the firm can be increased and the need for external financing is reduced. Management, rather than the owners themselves, is responsible for running firms. The owners employ administration to enable them to

optimize their resources (Tayachi et al., 2021). However, corporate governance literature shows that controlling owners who prefer self-interest may divert firm resources for their benefit at the cost of other owners (Ben-Nasr et al., 2015). Moreover, OS represents the basis of the CG system (Arosa et al., 2010), which influences the financial outcomes of the firms. Therefore, owners are more important in influencing the FP of the firms when they take part in the board while using ownership capacity. Good corporate governance practices may reduce firm risks and guarantee survival and competitive edge which ultimately positively affect firm value. However, ownership structure is an important aspect of CG as it influences the value of a firm. The effective OS represents an internal characteristic of CG which may lead to overcoming the issue of conflict between shareholders and the management (Haque et al., 2011). Different aspects and structures of the ownership of firms play a pivotal role in confirming an effective system of corporate governance. Owners being the source of providing wealth to a firm may help to enhance financial performance and monitoring (Boubaker et al., 2012). Further, it is imperative to indicate that owners of the firms take less part in management because of the limited capacity they have.

Moreover, female directors' representation on the board may help to improve FP due to more diligence monitoring capabilities (Vieira, 2017). Gender diversity has gained a vast consideration from various firms, governments, and researchers (Dwaikat et al., 2021). The increasing mandatory legal provisions regarding the representation of women directors on the board have gained the attention of researchers in this area (Singhania et al., 2022). Therefore, it is interesting to analyze how female directors influence financial performance. Females on the board of directors may lead to greater improvement in the FP of the business (Báez et al., 2018). Positive financial outcomes due to the inclusion of females on board have increased the attention of the firms to increase diversity on board. However, encouraging diversity strategies promotes complex issues mainly in the business world where financial sustainability is more vital. Female representation on the board encourages new talents and provides an approach to the parties from the external environment (Robiyanto et al., 2022). In addition, the matter of equal chances for women and their part in sustainable economic growth is increasingly becoming an area of frequent debate in the political environment at local and international organizational environments. Therefore, the relevance of female board members signifies that gender diversity and effective corporate governance practices ensure firm success.

Previous studies exhibit varying results concerning the issue presented in this study. Perrini et al. (2008) conducted a study on the connection between OS and the FP of Italian firms. Yeh (2019) provides the positive effects of institutional ownership and FP in Taiwan. In addition, Wang and Cao (2022) also conclude the positive effects of institutional investors on FP in Taiwan. Alshirah et al. (2022) analyze the influences of CG and gender diversity on FP in Jordan. Adams and Ferreira (2009) explored the effects of female diversity on FP in emerging nations. Other studies are also conducted in developed countries (Isidro and Sobral, 2015; Ahmadi et al., 2018). Moreover, very few studies

provide evidence of the effects of CSR on FP in developing countries. Further, studies show that developing countries lack CSR education as well as institutional support; therefore, CSR practices as an environmental factor still need to be explored in developing economies (Ali and Frynas, 2018).

Past literature is mostly based on developed economies and developing economies such as South Asian countries still need research on this area. Although firms are aware of CSR practices, the area is mostly analyzed in developed nations, while CSR practices present different aspects both in developed and developing nations. Therefore, there is still a need to investigate how CSR practices affect FP in developing countries (Tilt, 2018). Moreover, there is a lack of literature regarding CSR practices along with corporate governance in influencing the financial performance of firms in South Asia. The current research is conducted in developing countries like Pakistan, Sri Lanka, India, and Bangladesh. These economies normally face uncertainties from political and economic instabilities that ultimately influence investors' attitudes (Hunjra et al., 2022). The need for CSR activities in emerging world is more serious as most firms in developing countries do not take care of CSR (Dobers and Halme, 2009). Further, CRS in South Asian countries does not apply to the standards, and firms in developing economies lack CSR education (Ali and Frynas, 2018). In addition, firms in these economies face governance problems due to a lack of effective implementation of CG practices (Boubaker and Nguyen, 2014). These are emerging economies that are at growing stages and represent unique economies. Corporate governance is at a growing stage in these economies. Due to the lack of proper establishment of CG in emerging economies, there is a lack of evidence of corporate governance and financial performance. Various firms in emerging nations find the problem of a good governance system and therefore they try to overcome the issue to compete in the market and attract investors.

The CG system of firms in emerging nations is still not very effective (Mehmood et al., 2019). Furthermore, the business market in developing economies presents a different environment as compared to the developed economies. In these economies, females have little presence on the board of directors. However, female members are now increasingly taking part in the management of the firms and have higher level positions such as chairperson of the board and other similar top positions. It is particularly interesting to determine the potential benefits of having women on the board in emerging markets such as South Asian countries. In addition, the study takes the non-financial sector for analysis because the need for liberalization and globalization has provided this sector with an opportunity to grow the business internationally to generate more profit.

Considering the importance of CSR, ownership structure, and gender diversity to influence firm performance in South Asia, current research mainly is an attempt to address this issue. Furthermore, the present study considers the significance of accounting and market measures of financial performance for in-depth analysis. This research employs a fixed effect regression model to analyze the data of 520 non-financial listed firms from

South Asia. Results show that CSR, OS, and gender diversity have significant and positive relationships with FP.

The remaining part of this paper is managed as follows. 2<sup>nd</sup> Section combines the existing research; 3<sup>rd</sup> Section provides data and methods followed by 4<sup>th</sup> Section which explains the findings of the study. 5<sup>th</sup> Section concludes this research.

## 2. LITERATURE REVIEW

CSR is indeed a growing force for improving firm performance. CSR is a definite win-win situation, with companies that take an active interest in it benefiting from a wide range of benefits extending both to their altruism and bottom line. These firms also tend to integrate societal and ecological issues into their business models, earning trust as ethical companies through this approach. In addition, strong CSR practices can save costs and increase efficiency by being sustainable in their use of resources, eliminating waste from manufacturing procedures, and lowering emissions. This concern for the environment and society also helps to attract talent, creating a motivated workforce. But most significantly, CSR reduces risks by actively addressing societal problems in a way that increases resilience and long-term sustainability. Research has also confirmed that companies with better CSR frameworks generally outperform their rivals, which proves once again that companies can enjoy strategic advancement when they implement ethical and socially responsible principles from a multitude of angles.

CSR is the area of interest of firms as fulfilling social responsibilities may help them to get social benefits and enhance firm performance. The concept of CSR has international attraction and is a new idea in the global economy (Hai et al., 2022). Implementing CSR practices has a significant impact on financial and market outcomes of firms. Theoretically, CSR plays a significant role in impacting the values of the firms and information disclosure. Agency theory argues that implementing CSR is considered an expense of the owners and hence reduces firm performance (Pagano and Volpin, 2005). Many researchers provide positive influences of CSR on firm performance. Social impact theory states that firms with CSR maximize the interests of stockholders including stakeholders (Cornell and Shapiro, 1987), however, sometimes firms fail to fulfil the expectations of the stakeholders which creates fear in the market, and financial performance is reduced. Feng et al. (2018) conclude the positive effects of CSR on economic performance. CSR has a positive relationship with firm performance as it provides a way of attracting stakeholders and therefore improves FP. CSR improves relationships with stakeholders and firm performance is positively affected (Waddock and Graves, 1997). Javeed and Lefen (2019) discovered a positive relationship between CSR and FP. On the other hand, Jones et al. (2006) discover a negative relationship between CSR and firm FP. A negative relationship indicates that when firms invest in CSR, resources available for use are reduced and production suffers resulting in lower performance. After reviewing the literature, the study suggests the following hypothesis.

H1: There is a positive influence of CSR on FP.

This concentration of power structure tends to have a positive impact on firm performance. In addition, the smaller group dominating a board tends to have better control over decision-making processes if there are high levels of share ownership. The advantage of this concentrated ownership structure is a speedier adjustment to changes in the market and fewer people to satisfy when making executive decisions. In addition, it provides owners and management with the same direction of incentives, minimizing agency friction and providing greater impetus to concentrate on long-term sustainable growth (Al-Janadi, 2021). Such often results in resource allocation, risk management, and vision becoming more targeted. Also, concentrated ownership brings along investors seeking stability and decisiveness, which can reduce the cost of capital and strengthen the company's financial position. However, the advantages of concentration in ownership are conditional on whether or not the big shareholders can be skillful and their interests coincide with those of the company. This concentration of ownership can also enhance firm performance, but only if it is properly managed to avoid all types of abuse.

Jensen and Meckling (1976) provided agency theory and argued that there exists a conflict of interest between managers and owners. The theory suggests that managers work for self-interest and ignore the interests of the firms which causes inefficiencies and creates agency costs. When managers have more part in ownership, they possess more power which leads them to favor their interests. Due to this agency issue, firm performance is adversely affected. Agency issues create agency costs which can influence the valuation of the stock market and FP in emerging nations where CG is ineffective. In emerging countries, the agency issues between majority and minority shareholders are more serious than agency issues between management and shareholders (Lei et al., 2013). Therefore, ownership dispersion is important for emerging markets. Donaldson and Davis (1991) developed stewardship theory which supports no conflict of interests and managers prefer to work for the benefit of the firms. If the board members are insiders, they work to maximize shareholders' value and ultimately there is an increase in the firm's FP.

There has been literature relating to the concerned issue and the body of various arguments provides mixed outcomes. Agency theory argues that ownership concentration overcomes the issue of conflict of interests by directly affecting the management to act for the benefit of the owners, which can decrease the cost related to conflict of interests between management and the ownership. Developing countries have weak legal systems; therefore investors involve themselves in management control. They use concentrated ownership as a tool to affect management by being involved in governance and decision-making (Claessens et al., 2006). Al-Janadi (2021) and Abdullah and Ismail (2017) found positive effects of OC on FP. Saleh et al. (2017) conclude a positive influence of concentrated ownership on the FP of Chinese firms. The negative view of La Porta et al. (1999) suggests that OC try to possess the resources of the firm such as assets and profit and use them for their interests which adversely influences firm performance. Amin and Hamdan (2018) also describe the negative influence of concentrated ownership on FP.

H2: There is a positive influence of ownership concentration on FP.

Higher institutional ownership is often a positive factor for the overall performance of companies. Bringing these institutional investors into a firm's ownership system generally provides the company with a degree of stability and expertise. Institutional investors often do in-depth due diligence before investing. Such behavior demonstrates how much they trust the company's future and management. Their very existence often calls for constant vigilance and active participation, heightening the establishment of effective governing practices and strategic guidance (Alshirah et al., 2022). Moreover, institutional investors often have a lot of specialized knowledge and enormous resources. They can advise management from outside the box so it will be easier for them to make decisions and plan future actions. Their large capital investment often makes their interests closely linked to the company's long-term development, making them less prone to short-term thinking and more conducive to a focus on sustainable growth. Furthermore, the credibility that accompanies institutional ownership can help enhance a company's reputation among investors and other stakeholders (Lin and Fu, 2017). This in turn will strengthen its capacity to raise funding and lower borrowing costs. However, whether or not institutional ownership has any effect on the company's performance will depend on a variety of factors including what quality and quantity institutions are involved and how interests coincide. It indicates just how important effective corporate governance is in reaping the benefits of institutional ownership.

Institutional ownership refers to large investors such as investment firms, banks, and other large legal shareholders (Alshirah et al., 2022). In emerging countries, institutional investors are rapidly growing (Khorana et al., 2005). Institutional investors are an important part of CG that contributes to controlling agency issues and protects the interests of the investors. Further, institutional owners efficiently play a monitoring role in overcoming asymmetric information and agency issues (Jensen and Meckling, 1976; Hussainey and Aljifri, 2012). However, past literature presents inconsistent outcomes on this issue. Lin and Fu (2017) conclude that institutional investors enhance FP, while Epps and Cereola (2008) find a negative effect, because when institutional investors own large amounts of shares, they may adversely influence firm performance (Lin and Fu, 2017). Therefore, institutional investors should not own more shares to avoid adverse effects on performance. After reviewing the literature, it is posited that.

H3: There is a positive influence of institutional ownership on FP

Studies constantly confirm the beneficial impact of having a diverse range of genders on the overall success of companies in many industries and sectors. Companies that prioritize and promote gender diversity (GD) typically enjoy a wide range of advantages that contribute to improved performance. Diverse teams, with an equal representation of both genders, frequently provide a wider variety of viewpoints, ideas, and methods to the processes of solving problems and making decisions. Since the organization itself is comprised of so many disparate viewpoints,

it encourages creativity and originality. This results in products and services much more imaginative about meeting consumers 'multicolored wants. In addition, for those teams with members of both genders. They are thought to be better able to cooperate and they have a good group dynamic so that in the end, both their efficiency is higher. Outside forces Other than these internal factors, organizations with a combination of sex have better reputations. This in turn attracts even more highly skilled people and work for them from greater numbers of clients. Studies indicate that the more gender diversity there is at leadership levels, the better companies perform financially. This shows just how much influence different ways of leading can have on a company's profitability. Further, promoting gender diversity is not merely a matter of openness; it also contributes to the making of strategic decisions by stimulating innovation and having a beneficial effect on company performance as whole.

The increasing participation of females on the board has influenced firm management and performance positively. Board composition plays a significant role in affecting FP. GD is one of the features of the board composition that has gained more attention in the recent past from policymakers and researchers (Ben Slama et al., 2019). The increasing regulatory provisions in developed countries regarding the females board members appointment have attracted the focus of firms in this area (Singh et al., 2022; Abdullah et al., 2016). The agency as well as the resource dependence theory state that women's participation on the board may improve firm performance as well as interactions with the environment. Women directors take more interest in the operational activities of the firm than men (Adams and Ferreira, 2009). Past studies on average document the evidence that firms with females on the board provide better results. Carter et al. (2003) and Salloum et al. (2016) document the benefits of females board members inclusion and the market performance of the firms. Moreover, Terjesen et al. (2016) and Ahmadi et al. (2018) also conclude that gender diversity provides a better image of firms and hence improves financial performance. Promoting females on the board may help firms improve corporate governance because female directors monitor to reduce fraud (Capezio and Mavisakalyan, 2016). Firms with a higher proportion of females on the board are well admired and are regarded to be ethical (Landry et al., 2016).

H4: There is a positive influence of GD on FP.

Existing research provides contradicting results on the effects of selected control variables on FP. Titman and Wessels (1988) argue that large-sized firms experience lesser financial distress and therefore have more profit. Buallay et al. (2020), and Alshirah et al. (2022) find positive effects of firm size on performance. Sales growth also plays an important role in affecting FP. Higher growth in sales is expected to increase profit and investment opportunities. Jang and Park (2011) find an inverse impact of growth on firm performance. However, Markman and Gartner (2002) reveal insignificant effects of sales growth on firm performance. Leverage increases bankruptcy chances of a firm and also decreases financial performance (Salim and Yadav, 2012). Georgakopoulos et al. (2022) show a negative relationship between leverage and FP. Asset tangibility is assumed to be the important determinant of

**Table 1: Summary of measurement of study variables**

| Variables                       | Proxy                               | Measurements  | Reference/s                                 |
|---------------------------------|-------------------------------------|---|---|
| Firm Performance                | Return on Assets                    | Net income divided by total assets  | Mehmood et al. (2019)                       |
|                                 | Return on Equity                    | Net income over total equity  | Buallay et al. (2020), Alodat et al. (2022) |
|                                 | Tobin's Q                           | Market value of equity plus total debts over book value of total assets   | Alodat et al. (2022)                        |
| Corporate Social Responsibility | Social Contribution Value per Share | Earnings per share + (Total tax + Staff Expense + Interest Expense + Public Welfare Payouts - Social Cost)/Equity | Feng et al. (2018), Javeed and Lefen (2019) |
| Ownership Structure             | BM_CSR                              | Binary method of assigning value 1 or 0.  | Hategan et al. (2018)                       |
|                                 | Ownership Concentration             | The proportion of total shares held by the top five shareholders  | Al-Jaifi (2017)                             |
|                                 | Institutional Ownership             | Proportion of the total shares held by institutions   | Uddin et al. (2019)                         |
| Gender Diversity                | Women on the Board                  | Percentage of females on the board  | Alshirah et al. (2022)                      |
| Control Variables               | Firm Size                           | Natural log of assets   | Chancharat and Kumpamool (2022)             |
|                                 | Leverage                            | Total debts over total assets   | Chancharat and Kumpamool (2022)             |
|                                 | Sales growth                        | Change in sales as a percentage   | Fernando et al. (2020)                      |
|                                 | Tangibility                         | Fixed assets over total assets  | Ahmed and Bhuyan (2020)                     |

financial performance. Ahmed and Bhuyan (2020) and Gharaibeh and Khaled (2020) find negative effects of asset tangibility on firm profitability.

### 3. DATA AND METHODOLOGY

The present study selects panel data of 520 non-financial firms from South Asia (Pakistan, India, Sri Lanka, and Bangladesh) from 2009 to 2021, extracted from DataStream. Out of 520 firms, 262 firms belong to Pakistan, 120 to India, 92 to Sri Lanka, and 46 to Bangladesh. Firms are selected based on the highest market capitalization in their respective stock exchanges. The dependent variable measures the firm performance. In this regard, we use accounting measures of FP as well as a market measure of performance. The main independent variable reflects the firm's CSR activities. The other independent variables include ownership structure and gender diversity. Table 1 explains the various variables.

For the empirical analysis, the panel regression technique is used. Notably, a fixed effect regression model is applied whereas a dynamic panel regression GMM is used for robustness checking.

The fixed effect regression model is given by:

$$ROA_{i,t} = \alpha + \beta_1 SCV_{i,t} + \beta_2 BM\_CSR_{i,t} + \beta_3 OC_{i,t} + \beta_4 IO_{i,t} + \beta_5 GDiv_{i,t} + \beta_6 FSZ_{i,t} + \beta_7 LEV_{i,t} + \beta_8 GRW_{i,t} + \beta_9 TANG_{i,t} + \beta_{10} YD_{i,t} + \beta_{11} IND_{i,t} + \epsilon_{i,t} \quad (1)$$

$$ROE_{i,t} = \alpha + \beta_1 SCV_{i,t} + \beta_2 BM\_CSR_{i,t} + \beta_3 OC_{i,t} + \beta_4 IO_{i,t} + \beta_5 GDiv_{i,t} + \beta_6 FSZ_{i,t} + \beta_7 LEV_{i,t} + \beta_8 GRW_{i,t} + \beta_9 TANG_{i,t} + \beta_{10} YD_{i,t} + \beta_{11} IND_{i,t} + \epsilon_{i,t} \quad (2)$$

$$TQ_{i,t} = \alpha + \beta_1 SCV_{i,t} + \beta_2 BM\_CSR_{i,t} + \beta_3 OC_{i,t} + \beta_4 IO_{i,t} + \beta_5 GDiv_{i,t} + \beta_6 FSZ_{i,t} + \beta_7 LEV_{i,t} + \beta_8 GRW_{i,t} + \beta_9 TANG_{i,t} + \beta_{10} YD_{i,t} + \beta_{11} IND_{i,t} + \epsilon_{i,t} \quad (3)$$

Where,  $\alpha$  = Constant,  $\beta$  = Intercept,  $i$  = Firms,  $t$  = Period, ROA = Return on assets, ROE = Return on equity, TQ = Tobin's Q, SCV = Social contribution value per share, BM\_CSR = Binary number of corporate social responsibility, OC = Ownership concentration, IO = Institutional ownership, GDiv = Gender

**Table 2: Descriptive statistics**

|        | Mean   | SD    | Median | Minimum | Maximum |
|--------|--------|-------|--------|---------|---------|
| ROA    | 0.082  | 0.292 | 0.058  | -0.056  | 0.187   |
| ROE    | 0.176  | 0.315 | 0.157  | -0.061  | 0.208   |
| TQ     | 1.158  | 0.195 | 1.043  | 0.846   | 3.915   |
| SCV    | 0.082  | 0.134 | 0.071  | 0.006   | 0.311   |
| BM-CSR | 0.826  | 0.435 | 0.792  | 0       | 1       |
| OC     | 0.607  | 0.837 | 0.594  | 0.192   | 0.814   |
| IO     | 0.283  | 0.653 | 0.273  | 0.137   | 0.428   |
| GDiv   | 0.073  | 0.934 | 0.059  | 0.052   | 0.350   |
| FSZ    | 20.934 | 0.722 | 19.973 | 14.925  | 26.925  |
| LEV    | 0.618  | 0.624 | 0.597  | 0.315   | 0.822   |
| GRW    | 0.148  | 0.816 | 0.117  | 0.092   | 0.419   |
| TANG   | 0.492  | 0.237 | 0.473  | 0.117   | 0.876   |

ROA: Return on assets, ROE: Return on equity, TQ: Tobin's Q, SCV: Social contribution value per share, BM-CSR: Binary method of corporate social responsibility, OC: Ownership concentration, IO: Institutional ownership, GDiv: Gender diversification, FSZ: Firm size, LEV: Leverage, GRW: Sales growth, TANG: Assets tangibility, SD: Standard deviation

diversity, FSZ = Firm size, LEV = Leverage, GRW = Sales growth, TANG = Assets tangibility, YD = Year dummy, IND = Industry dummy and  $\epsilon$  = Error term.

## 4. RESULTS

### 4.1. Main Results

Table 2 represents descriptive statistics of the data. The results indicate low FP measures with low variation in the values. Low financial performance may be due to the reason of slow growth in the economy and decreasing stock market performance of this region. The average values of both measures of CSR suggest firms in this region are contributing to the environment and they keep progressing towards social contributions along with their traditional earnings. Ownership is highly concentrated indicating that most of the shares are owned by the top five shareholders. Further, institutional investors are also encouraged to buy the stocks of non-financial firms. The part of institutional investors is nearly one-third of the total outstanding shares. However, high deviation in the values of concentrated ownership and institutional investors may be due to the uncertain economic environment of the countries. %

of female board directors is very low with less deviation suggesting that women are not encouraged to top positions in developing countries. High variation in the values of firm size indicates that firms generate assets according to the needs and available financial resources because sometimes firms face issues with financial resources to increase the level of assets. Average sales growth is low with more variation in the values suggesting different levels of sales growth of the firms in countries. Investment in tangible assets is less than half of the total assets as more tangible fixed assets generate more debts because of being used as collaterals.

Table 3 provides the correlation matrix among explanatory variables and the variance inflation factor (VIF) as well as the

Tolerance (1/VIF) values, which can be used to identify potential issues of multicollinearity. The estimated correlation coefficients are moderate. Furthermore, looking into the low VIF values and the levels of 1/VIF values, it seems that multicollinearity is not an issue in the study.

The results of the impact of CSR, OS, and GD on FP are presented in Table 4. They are estimated based on panel regression, involving a fixed effect model. We obtained significant p-values of the Hausman and the Redundant tests, suggesting the suitability of the FE model for the analysis. The FE model provides the benefits of controlling the bias of unobserved and omitted variables. Model 1, which involves the SCV, shows a positive and significant

**Table 3: Test of multicollinearity and Pearson/ Spearman correlation matrix**

|        | VIF   | 1/VIF | ROA    | ROE   | TQ     | SCV    | BM-CSR | OC     | IO    | GDiv   | FSZ    | LEV    | GRW    | TANG   |
|--------|-------|-------|--------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| ROA    |       |       | 1      | 0.173 | 0.113  | 0.167  | 0.221  | 0.231  | 0.245 | 0.124  | 0.138  | 0.213  | 0.113  | -0.151 |
| ROE    |       |       | 0.167  | 1     | 0.225  | 0.281  | 0.231  | 0.184  | 0.219 | 0.125  | 0.452  | 0.094  | 0.146  | 139    |
| TQ     |       |       | 0.092  | 0.215 | 1      | 0.237  | 0.256  | 0.128  | 0.324 | 0.267  | 0.332  | -0.094 | 0.146  | -0.184 |
| SCV    | 1.351 | 0.740 | 0.153  | 0.272 | 0.223  | 1      | 0.312  | 0.102  | 0.113 | -0.451 | 0.413  | -0.161 | 0.142  | -0.162 |
| BM-CSR | 1.513 | 0.661 | 0.192  | 0.219 | 0.243  | 0.282  | 1      | 0.081  | 0.193 | 0.384  | -0.160 | -0.273 | 0.433  | 0.094  |
| OC     | 1.377 | 0.726 | 0.198  | 0.175 | 0.117  | 0.082  | 0.067  | 1      | 0.096 | -0.382 | -0.124 | 0.131  | -0.192 | 0.463  |
| IO     | 1.798 | 0.556 | 0.218  | 0.193 | 0.317  | 0.109  | 0.182  | 0.081  | 1     | 0.086  | 0.284  | 0.213  | 0.285  | 0.134  |
| GDiv   | 1.325 | 0.755 | 0.095  | 0.116 | 0.251  | -0.426 | 0.375  | -0.371 | 0.072 | 1      | 0.096  | 0.189  | 0.132  | 0.084  |
| FSZ    | 1.534 | 0.652 | 0.127  | 0.418 | 0.307  | 0.391  | -0.153 | -0.108 | 0.277 | 0.082  | 1      | -0.327 | 0.094  | 0.163  |
| LEV    | 1.291 | 0.775 | 0.188  | 0.071 | -0.081 | -0.146 | -0.255 | 0.113  | 0.197 | 0.183  | -0.318 | 1      | -0.224 | 0.572  |
| GRW    | 1.537 | 0.651 | 0.093  | 0.137 | 0.137  | 0.127  | 0.416  | -0.182 | 0.271 | 0.128  | 0.079  | -0.213 | 1      | 0.121  |
| TANG   | 1.411 | 0.709 | -0.146 | 0.129 | -0.179 | -0.155 | 0.083  | 0.452  | 0.122 | 0.062  | 0.153  | 0.561  | 0.098  | 1      |

VIF: Vactor inflation factor, 1/VIF: Tolerance; Pearson correlation is below the diagonal, while Spearman correlation is above the diagonal, ROA: Return on assets, ROE: Return on equity, TQ: Tobin's Q, SCV: Social contribution value per share, BM-CSR: Binary method of corporate social responsibility, OC: Ownership concentration, IO: Institutional ownership, GDiv: Gender diversification, FSZ: Firm size, LEV: Leverage, GRW: Sales growth, TANG: Assets tangibility

**Table 4: Fixed effect estimation**

| Variables                  | ROA                  |                      |                     | ROE                  |                      |                      | Tobin's Q            |                      |                     |
|----------------------------|----------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|
|                            | Model 1              | Model 2              | Model 3             | Model 1              | Model 2              | Model 3              | Model 1              | Model 2              | Model 3             |
| C                          | 0.192***<br>(9.095)  | 0.094***<br>(12.624) | 0.218***<br>(6.234) | -0.175*<br>(-1.715)  | -0.168*<br>(-1.829)  | -0.281**<br>(-2.342) | 0.095***<br>(3.955)  | 0.004***<br>(4.392)  | 0.019**<br>(2.112)  |
| SCV                        | 0.068**<br>(2.128)   | —                    | 0.182*<br>(1.917)   | 0.514*<br>(1.806)    | —                    | 0.329*<br>(1.769)    | 0.395*<br>(1.764)    | —                    | 0.545**<br>(2.216)  |
| BM_CSR                     | —                    | 0.135**<br>(2.213)   | 0.014**<br>(2.052)  | —                    | 0.116*<br>(1.901)    | 0.126**<br>(2.131)   | —                    | 0.085**<br>(2.341)   | 0.015***<br>(5.213) |
| OC                         | 0.193***<br>(10.927) | 0.135***<br>(5.692)  | 0.002***<br>(8.206) | 0.334**<br>(2.105)   | 0.421***<br>(6.235)  | 0.514**<br>(2.115)   | 0.005***<br>(11.394) | 0.034***<br>(7.524)  | 0.193**<br>(2.037)  |
| IO                         | 0.095*<br>(1.816)    | 0.216<br>(0.937)     | 0.213**<br>(2.312)  | 0.184***<br>(7.925)  | 0.265**<br>(2.196)   | 0.004***<br>(5.129)  | 0.928*<br>(1.796)    | 0.622*<br>(1.751)    | 0.195*<br>(1.873)   |
| GDiv                       | 0.211**<br>(2.215)   | 0.062*<br>(1.698)    | 0.316*<br>(1.819)   | 0.915*<br>(1.853)    | 0.846<br>(0.667)     | 0.231**<br>(2.237)   | 0.536*<br>(1.716)    | 0.274**<br>(2.295)   | 0.118*<br>(1.912)   |
| FSZ                        | 0.185*<br>(1.805)    | 0.137*<br>(1.835)    | 0.322*<br>(1.174)   | 0.295<br>(1.157)     | 0.552*<br>(1.824)    | 0.395*<br>(1.737)    | 0.002***<br>(5.927)  | 0.132**<br>(2.185)   | 0.008***<br>(8.095) |
| LEV                        | -0.315*<br>(-1.719)  | -0.051**<br>(-2.241) | 0.426*<br>(1.824)   | -0.823*<br>(-1.698)  | -0.374**<br>(-2.305) | -0.476*<br>(-1.825)  | -0.905*<br>(-1.711)  | -0.248**<br>(-2.327) | -0.617*<br>(-1.849) |
| GRW                        | -0.628<br>(-0.925)   | -0.063**<br>(-2.320) | -0.627*<br>(-1.827) | -0.209**<br>(-2.128) | -0.342*<br>(-1.897)  | -0.759*<br>(-1.912)  | -0.711<br>(-0.881)   | -0.855*<br>(-1.708)  | -0.376*<br>(-1.920) |
| TANG                       | 0.928<br>(0.629)     | 0.325*<br>(1.735)    | 0.834<br>(0.542)    | -0.109*<br>(-1.853)  | -0.766<br>(-0.781)   | -0.497<br>(-1.210)   | -0.521<br>(-0.738)   | -0.776*<br>(-1.821)  | -0.824<br>(-1.052)  |
| Year dummy                 | Yes                  | Yes                  | Yes                 | Yes                  | Yes                  | Yes                  | Yes                  | Yes                  | Yes                 |
| Industry dummy             | Yes                  | Yes                  | Yes                 | Yes                  | Yes                  | Yes                  | Yes                  | Yes                  | Yes                 |
| R-square                   | 0.491                | 0.421                | 0.394               | 0.527                | 0.441                | 0.459                | 0.447                | 0.431                | 0.392               |
| F-statistics               | 11.394***            | 9.435***             | 12.342***           | 15.627***            | 12.815***            | 11.255***            | 10.924***            | 8.165***             | 11.214***           |
| Likelihood test (P-values) | 0.000                | 0.000                | 0.000               | 0.000                | 0.002                | 0.000                | 0.000                | 0.001                | 0.000               |
| Hausman test (P-values)    | 0.000                | 0.000                | 0.000               | 0.000                | 0.000                | 0.000                | 0.000                | 0.000                | 0.000               |

Model 1 shows the first measure and Model 2 shows the second measure of CSR, while Model 3 represents both measures of CSR, C: Constant, SCV: Social contribution value per share, BM-CSR: Binary method of corporate social responsibility, OC: Ownership concentration, IO: Institutional ownership, GDiv: Gender diversity, FSZ: Firm size, LEV: Leverage, GRW: Growth, TANG: Assets tangibility, \*, \*\*, and \*\*\* represent levels of significant at 10%, 5% and 1% respectively

effect on FP. In Model 2, which involves the binary variable representing CSR, the estimated coefficient is also positive and significant (0.094). When both measures of CSR are included in the same regression, the results from Model 3 show significant and positive effects for both measures. The results hold irrespective of the proxy used to measure financial performance (ROA, ROE, or TQ), despite some variability in the magnitude of impact and the level of significance. Overall, Models 1-3 reveal that CSR significantly improves firm performance implying that more active firms contribute towards society. This suggests that shareholders get an advantage from the social activities of the firms because it has a positive impact on FP (Javeed and Lefen, 2019).

Regarding the impact of ownership structure, Table 4 shows that OC has a positive and significant influence on FP in all cases and across the three models. Agency theory indicates that ownership concentration can be used to overcome the conflict of interests by directly affecting the management to work for the benefit of the owners (Shleifer and Vishny, 1986), which leads to a reduction of agency costs and an increase in FP. The positive effect indicates that large shareholders more efficiently monitor the role of management and hence firm value can be increased. These results are supported by Saleh et al. (2017) who conclude that more OC enhances firm performance. Regarding IO, it has a positive and significant effect on FP in most of the models. Institutional investors contribute to increasing financial performance control agency issues and protect the interests of shareholders (Lin and Fu,

2017). The results of IO are aligned with agency theory because as per theory, institutional investors play an efficient monitoring role to minimize agency issues and asymmetric information. The results justify that institutional ownership has more inside information and therefore positively influences firm performance (Ali and Hashmi, 2018). The positive impact of IO favors the signaling theory, which suggests that institutional investors monitor the operational activities of the management.

Regarding the influence of GD on FP, the findings shown in Table 4 indicate that a higher proportion of women serving on the board has a beneficial effect on FP. Both the RD theory posit that the presence of female directors contributes to the enhancement of business performance and instills confidence in stakeholders regarding the firm's commitment to diversity. Women directors take more interest in the operational activities of the firm as compared to men, which may help to improve performance (Adams and Ferreira, 2009). These results are in line with Terjesen et al. (2016).

Regarding the control variables, firm size has a significant impact on FP. Firms of large sizes are experienced and operate efficiently to overcome information asymmetry, which helps to improve firm value (Lundvall and Battese, 2000). Leverage has a significant and negative effect on FP, suggesting that increasing debt financing induces credit risk, which adversely affects FP (Salim and Yadav, 2012). Sales growth shows a significant and negative relationship with FP, which is consistent with Jang and

**Table 5: Dynamic panel regression estimation**

| Variables                  | ROA                   |                      |                       | ROE                    |                       |                       | TQ                    |                      |                      |
|----------------------------|-----------------------|----------------------|-----------------------|------------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|
|                            | Model 1               | Model 2              | Model 3               | Model 1                | Model 2               | Model 3               | Model 1               | Model 2              | Model 3              |
| L1                         | -0.628*<br>(-1.837)   | -0.291**<br>(-2.117) | -0.523<br>(-0.937)    | -0.001***<br>(-11.927) | -0.034***<br>(-9.375) | -0.107***<br>(-7.096) | 0.917<br>(0.768)      | 0.437*<br>(1.827)    | 0.379*<br>(1.749)    |
| L2                         | 0.003***<br>(12.739)  | 0.015***<br>(6.082)  | 0.062***<br>(8.495)   | 0.092*<br>(1.737)      | 0.345<br>(0.891)      | 0.288*<br>(1.747)     | -0.195**<br>(-2.164)  | -0.244**<br>(-2.274) | -0.427*<br>(-2.312)  |
| SCV                        | 0.172*<br>(1.775)     | —                    | 0.286*<br>(1.846)     | 0.048**<br>(2.154)     | —                     | 0.037***<br>(5.268)   | 0.211**<br>(2.183)    | —                    | 0.108***<br>(4.183)  |
| BM_CSR                     | —                     | 0.315**<br>(2.242)   | 0.246*<br>(1.914)     | —                      | 0.756*<br>(1.749)     | 0.377*<br>(1.838)     | —                     | 0.051***<br>(5.096)  | 0.215**<br>(2.262)   |
| OC                         | 0.182***<br>(8.092)   | 0.003***<br>(5.295)  | 0.415**<br>(2.316)    | 0.229**<br>(2.110)     | 0.645*<br>(1.759)     | 0.697<br>(0.755)      | 0.015***<br>(5.081)   | 0.214***<br>(4.324)  | 0.234**<br>(2.193)   |
| IO                         | 0.131<br>(1.091)      | 0.244*<br>(1.786)    | 0.364*<br>(1.855)     | 0.153**<br>(2.167)     | 0.465*<br>(1.829)     | 0.395*<br>(1.715)     | 0.819**<br>(2.021)    | 0.246*<br>(1.811)    | 0.664*<br>(1.854)    |
| GDiv                       | 0.305*<br>(1.891)     | 0.245<br>(0.964)     | 0.622*<br>(1.839)     | 0.819**<br>(2.013)     | 0.961*<br>(1.810)     | 0.332*<br>(1.914)     | 0.136<br>(1.416)      | 0.355**<br>(2.362)   | 0.251*<br>(1.892)    |
| FSZ                        | 0.176*<br>(1.815)     | 0.663*<br>(1.903)    | 0.558*<br>(1.894)     | 0.245<br>(1.069)       | 0.512*<br>(1.917)     | 0.366*<br>(1.709)     | 0.001***<br>(8.375)   | 0.062**<br>(2.125)   | 0.315***<br>(10.924) |
| LEV                        | -0.218*<br>(-1.823)   | -0.336**<br>(-2.325) | -0.003***<br>(-6.085) | -0.769<br>(-1.092)     | -0.554*<br>(-1.828)   | -0.386*<br>(-1.698)   | -0.006***<br>(-4.534) | -0.201**<br>(-2.384) | -0.375**<br>(-2.167) |
| GRW                        | -0.006***<br>(-5.305) | -0.034**<br>(-2.326) | -0.012***<br>(-7.512) | -0.136*<br>(-1.819)    | -0.295**<br>(-2.317)  | -0.674*<br>(-1.815)   | -0.092**<br>(-2.192)  | -0.376*<br>(-1.834)  | -0.598*<br>(-1.761)  |
| TANG                       | -0.628<br>(-0.849)    | -0.321*<br>(-1.699)  | -0.653<br>(-0.865)    | -0.792<br>(-1.049)     | -0.228<br>(-0.679)    | -0.394<br>(-0.931)    | -0.553*<br>(-1.921)   | -0.759<br>(-0.846)   | -0.394<br>(-0.549)   |
| Industry dummy             | Yes                   | Yes                  | Yes                   | Yes                    | Yes                   | Yes                   | Yes                   | Yes                  | Yes                  |
| Year dummy                 | Yes                   | Yes                  | Yes                   | Yes                    | Yes                   | Yes                   | Yes                   | Yes                  | Yes                  |
| Sargan                     | 8.312                 | 9.934                | 10.067                | 7.392                  | 10.295                | 11.458                | 7.937                 | 6.245                | 8.155                |
| P-values                   | 0.114                 | 0.102                | 0.094                 | 0.179                  | 0.089                 | 0.083                 | 0.166                 | 0.193                | 0.134                |
| AR <sub>1</sub> (P-values) | 0.028                 | 0.012                | 0.037                 | 0.003                  | 0.001                 | 0.015                 | 0.045                 | 0.075                | 0.024                |
| AR <sub>2</sub> (P-values) | 0.816                 | 0.755                | 0.921                 | 0.927                  | 0.893                 | 857                   | 0.792                 | 0.717                | 0.735                |

Model 1 shows first measure and Model 2 shows second measure of CSR, while Model 3 represents both measures of CSR, L1: First lag of dependent variables, L2: Second lag of dependent variables, C: Constant, SCV: Social Contribution Value per Share, BM-CSR: Binary Method of Corporate Social Responsibility, OC: Ownership concentration, IO: Institutional ownership, GDiv: Gender diversity, FSZ: Firm size, LEV: Leverage, GRW: Growth, TANG: Assets tangibility, AR1: Arellano-Bond first-order autocorrelation, AR2: Arellano-Bond second-order autocorrelation\*, \*\*, and \*\*\* represent levels of significant at 10%, 5% and 1% respectively

Park (2011). The negative effect suggests that growth in sales requires more investment in resources, which undermines firm performance. However, the impact of asset tangibility on FP is generally insignificant.

## 4.2. Robustness Tests

After estimating and providing results based on the fixed effect model, we assess the robustness of the results using the GMM technique (Arellano and Bover, 1995). The GMM technique helps to solve the issues of multicollinearity and endogeneity and this technique is suited for the short time and long cross-sectional data. GMM was developed by Arellano and Bond (1991) and is considered a common technique for analyzing the parameters of a statistical model. The estimated results are presented in Table 5 They provide results aligned with those provided by the FE model. Furthermore, the insignificant value of the Sargan test indicates that the results from the GMM technique are accurate and reliable. Moreover, the coefficient of the first-order lagged value (AR1) is significant, unlike the insignificant coefficient of the second-order (AR2), which indicates no issue of autocorrelation in the analysis.

Besides the above findings, it is probable to have a bias in the main results due to the self-selection issues in our sample. Generally, the propensity score matching (PSM) technique allows for the control of potential endogeneity issues connected with bias in the sample selection process (Li, 2013). Given this possibility, the characteristics of the firms with women on the board might vary

from the firms without women on the board. Thus, we apply the PSM estimation to analyze whether a change in firm performance depends on the existence of women on the board of directors. Further, we follow Atif et al. (2019) and construct a dummy variable taking the value of 1 if at least one woman serves on the board and otherwise 0. Firms with females on the board are considered as treatment groups and otherwise as control groups (Gull et al. (2018). For this purpose, we employ PSM in our sample by sample by constructing a matched sample. We follow Sila et al. (2016) to implement PSM which supports matching gender-diverse firms with non-gender-diverse firms having other similar characteristics. After that, we apply the fixed effect regression on this matched sample to analyze our data. Table 6 reports the results relating to the PSM and indicates that all results are consistent with the main findings of our study, suggesting the absence of self-selection issues in our sample.

For further justification of our main findings, we use an additional proxy of firm performance as the price-to-earnings ratio, and then we apply the fixed effect model and the GMM model. In Table 7, the results are consistent with the main findings of our study reported earlier, and hence they further support the robustness of our findings to the choice of proxy of firm performance.

To check further the robustness of our main results, we conduct the fixed effect regression for each country and present them in the Appendix. The results of each country reveal almost similar findings to the main results of our study.

**Table 6: Regression-based on propensity score matching**

| Variables                  | ROA                  |                       |                      | ROE                  |                      |                      | Tobin's Q           |                      |                     |
|----------------------------|----------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|----------------------|---------------------|
|                            | Model 1              | Model 2               | Model 3              | Model 1              | Model 2              | Model 3              | Model 1             | Model 2              | Model 3             |
| C                          | 0.042***<br>(14.468) | 0.005***<br>(10.746)  | 0.082***<br>(7.768)  | -0.423*<br>(-1.846)  | -0.237*<br>(-1.913)  | -0.182*<br>(-1.895)  | 0.004***<br>(5.497) | 0.017**<br>(2.273)   | 0.243**<br>(2.164)  |
| SCV                        | 0.175**<br>(2.135)   | —                     | 0.138**<br>(2.153)   | 0.167**<br>(2.241)   | —                    | 0.395*<br>(1.827)    | 0.273**<br>(2.235)  | —                    | 0.596**<br>(2.242)  |
| BM_CSR                     | —                    | 0.421*<br>(1.764)     | 0.168*<br>(1.898)    | —                    | 0.165**<br>(2.134)   | 0.249*<br>(1.764)    | —                   | 0.019***<br>(4.357)  | 0.008***<br>(7.538) |
| OC                         | 0.037***<br>(8.488)  | 0.134***<br>(10.628)  | 0.017***<br>(9.715)  | 0.289*<br>(1.711)    | 0.315***<br>(5.085)  | 0.469*<br>(1.764)    | 0.049***<br>(8.371) | 0.048***<br>(9.677)  | 0.157**<br>(2.157)  |
| IO                         | 0.176*<br>(1.785)    | 0.432*<br>(1.843)     | 0.186**<br>(2.256)   | 0.017***<br>(5.343)  | 0.321**<br>(2.219)   | 0.241**<br>(2.312)   | 0.485**<br>(2.216)  | 0.244*<br>(1.813)    | 0.231*<br>(1.895)   |
| GDiv                       | 0.467*<br>(1.749)    | 0.173*<br>(1.724)     | 0.434**<br>(2.183)   | 0.816*<br>(1.911)    | 0.428<br>(0.937)     | 0.167*<br>(1.833)    | 0.643*<br>(1.784)   | 0.347**<br>(2.213)   | 0.149**<br>(2.243)  |
| FSZ                        | 0.575*<br>(1.716)    | 0.237*<br>(1.892)     | 0.189<br>(0.923)     | 0.375*<br>(1.747)    | 0.287*<br>(1.712)    | 0.437<br>(1.116)     | 0.014***<br>(7.734) | 0.176**<br>(2.237)   | 0.002***<br>(8.379) |
| LEV                        | -0.413**<br>(-2.162) | -0.068***<br>(-3.986) | -0.567**<br>(-2.218) | -0.765**<br>(-2.113) | -0.453**<br>(-2.234) | -0.537*<br>(-1.914)  | -0.798<br>(-0.969)  | -0.267**<br>(-2.269) | -0.543*<br>(-1.844) |
| GRW                        | -0.274*<br>(-1.842)  | -0.176*<br>(-1.861)   | -0.712*<br>(-1.813)  | -0.329*<br>(-1.215)  | -0.422*<br>(-1.768)  | -0.649**<br>(-2.134) | -0.597*<br>(-1.701) | -0.437<br>(-0.917)   | -0.435*<br>(-1.849) |
| TANG                       | -0.798<br>(-0.824)   | -0.361<br>(-1.328)    | -0.894<br>(-0.739)   | -0.473*<br>(-1.761)  | -0.678<br>(-0.817)   | -0.458<br>(-0.976)   | -0.654<br>(-0.819)  | -0.648*<br>(-1.748)  | -0.483<br>(-0.913)  |
| Year dummy                 | Yes                  | Yes                   | Yes                  | Yes                  | Yes                  | Yes                  | Yes                 | Yes                  | Yes                 |
| Industry dummy             | Yes                  | Yes                   | Yes                  | Yes                  | Yes                  | Yes                  | Yes                 | Yes                  | Yes                 |
| R-square                   | 0.491                | 0.421                 | 0.394                | 0.518                | 0.472                | 0.416                | 0.417               | 0.397                | 0.384               |
| F-statistics               | 10.476***            | 7.189***              | 10.376***            | 14.711***            | 13.737***            | 10.037***            | 8.117***            | 9.243***             | 10.719***           |
| Likelihood test (P-values) | 0.000                | 0.003                 | 0.000                | 0.000                | 0.000                | 0.000                | 0.001               | 0.002                | 0.000               |
| Hausman test (P-values)    | 0.000                | 0.000                 | 0.000                | 0.000                | 0.000                | 0.000                | 0.000               | 0.000                | 0.000               |

Model 1 shows the first measure and Model 2 shows the second measure of CSR, while Model 3 represents both measures of CSR, C: Constant, SCV: Social contribution value per share, BM-CSR: Binary method of corporate social responsibility, OC: Ownership concentration, IO: Institutional ownership, GDiv: Gender diversity, FSZ: Firms size, LEV: Leverage, GRW: Growth, TANG: Assets tangibility, \*, \*\*, and \*\*\* represent levels of significant at 10%, 5% and 1% respectively



**Table 7: Regression results with additional proxy (Price to earnings ratio)**

| Variables                  | Fixed effect model   |                      |                      | GMM estimation        |                      |                       |
|----------------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|-----------------------|
|                            | Model 1              | Model 2              | Model 3              | Model 1               | Model 2              | Model 3               |
| L1.                        | _____                | _____                | _____                | 0.214**<br>(2.231)    | 0.235**<br>(2.238)   | 0.395*<br>(1.823)     |
| L2.                        | _____                | _____                | _____                | -0.086***<br>(-8.094) | -0.375**<br>(-2.234) | -0.075***<br>(-5.276) |
| C                          | 0.075***<br>(10.439) | 0.205**<br>(2.142)   | 0.249*<br>(1.767)    | _____                 | _____                | _____                 |
| SCV                        | 0.458*<br>(1.849)    | _____                | 0.432*<br>(1.761)    | 0.596**<br>(2.261)    | _____                | 0.495*<br>(1.922)     |
| BM_CSR                     | _____                | 0.237**<br>(2.194)   | 0.142*<br>(1.843)    | _____                 | 0.246**<br>(2.127)   | 0.327*<br>(1.721)     |
| OC                         | 0.432*<br>(1.771)    | 0.389*<br>(1.812)    | 0.305**<br>(2.243)   | 0.431*<br>(1.824)     | 0.421<br>(0.735)     | 0.387*<br>(1.910)     |
| IO                         | 0.025***<br>(5.913)  | 0.736**<br>(2.234)   | 0.164***<br>(8.498)  | 0.319***<br>(7.709)   | 0.891*<br>(1.699)    | 0.043***<br>(6.186)   |
| GDiv                       | 0.403*<br>(1.728)    | 0.637<br>(1.117)     | 0.556*<br>(1.894)    | 0.439*<br>(1.779)     | 0.739*<br>(1.698)    | 0.586**<br>(2.243)    |
| FSZ                        | 0.267<br>(0.791)     | 0.379*<br>(1.884)    | 0.472*<br>(1.768)    | 0.576*<br>(1.797)     | 0.679*<br>(1.897)    | 0.478*<br>(1.778)     |
| LEV                        | -0.116*<br>(-1.731)  | -0.276**<br>(2.175)  | -0.577*<br>(-1.894)  | -0.798<br>(-1.121)    | -0.374**<br>(-2.305) | -0.476*<br>(-1.891)   |
| GRW                        | -0.827*<br>(-1.792)  | -0.576**<br>(-2.317) | -0.497**<br>(-2.219) | -0.895*<br>(-1.792)   | -0.218**<br>(-2.297) | -0.498*<br>(-1.827)   |
| TANG                       | -0.864<br>(-0.927)   | -0.537<br>(-0.869)   | -0.938<br>(-0.761)   | -0.479<br>(-0.846)    | -0.728*<br>(-1.738)  | -0.523<br>(-0.443)    |
| Year dummy                 | Yes                  | Yes                  | Yes                  | Yes                   | Yes                  | Yes                   |
| Industry dummy             | Yes                  | Yes                  | Yes                  | Yes                   | Yes                  | Yes                   |
| R-square                   | 0.397                | 0.512                | 0.414                | 0.375                 | 0.389                | 0.457                 |
| F-statistics               | 10.489***            | 6.384***             | 9.495***             | _____                 | _____                | _____                 |
| Likelihood test (p-values) | 0.000                | 0.003                | 0.000                | _____                 | _____                | _____                 |
| Hausman test (p-values)    | 0.000                | 0.000                | 0.000                | _____                 | _____                | _____                 |
| Sargan                     | _____                | _____                | _____                | 6.327                 | 5.434                | 9.458                 |
| P-values                   | _____                | _____                | _____                | 0.179                 | 0.218                | 0.113                 |
| AR <sub>1</sub> (P-values) | _____                | _____                | _____                | 0.003                 | 0.001                | 0.015                 |
| AR <sub>2</sub> (P-values) | _____                | _____                | _____                | 0.927                 | 0.893                | 0.857                 |

## 5. CONCLUSION

Corporate social responsibility, ownership structure, and gender diversity have remained the areas of interest for the researchers in analyzing their effects on the FP of the firms. However, the researchers mainly focus on developed countries while developing countries need more attention on this issue as the CG system is still at a growing stage in developing economies. Further, developing countries have a unique business environment as compared to developed countries. Therefore, the current study aims to evaluate the effects of CSR, OS, and GD on performance by taking a sample of 520 non-financial firms from South Asia. We use a FE model to analyze the data and then employ PSM and GMM techniques to verify the robustness of the findings.

Results of the fixed effect model reveal that CSR significantly improves the FP of the firms suggesting that firms with CSR activities work for the social environment along with earning traditional profit and providing more transparent information. Findings signify that CSR information is important for firms because it helps to minimize asymmetric information. As a result, shareholders and stakeholders enjoy benefits from the social performance of the firms which leads to enhanced FP. OC has a significant and positive relationship with firm performance

indicating that more concentrated ownership has monitoring power which helps to overcome the issue of conflict of interests between management and the shareholders. Therefore, following agency theory the results indicate that owners with more concentration enjoy more power of monitoring and may help to enhance firm performance. Institutional ownership significantly increases firm performance which suggests that institutional investors have more inside information and therefore they overcome the issue of asymmetric information due to having more transparency. The positive impact of institutional investors follows signaling theory which suggests that institutional investors monitor the operational activities of the management. In addition, the study provides results that women on the board positively influence FP. Positive influence follows resource dependence and agency theories that inclusion of the women on the board improves firm performance and relationship with the surrounding environment. Further, the results signify that women directors take more interest in the operational activities of the management.

The findings of our study have policy implications for both investors and firms. The findings suggest that although firms in South Asia are not investing large funds into CSR activities, still it has a significant and positive impact on FP which suggests that firms should invest more in CSR to attract investors and contribute

more towards the social environment. It further implies that CSR improves the brand image, therefore investors should get the necessary information about the CSR activities of the firms before providing funds to secure their investment. Moreover, investors should consider the ownership structure of the firms while investing funds. Investors are keen to provide funds to those firms with more institutional investors due to low agency issues and more payment of dividends. However, when institutional investors are more concentrated, they may have an adverse effect on FP. Therefore, firms should avoid issuing large amounts of shares to institutional investors to increase performance. Firms should focus on providing more chances to women on the top levels to compete with developed countries as in developed countries due to increasing demand for regulations, women are given more or equal chances to represent the board. However, this issue still needs concentration in developing countries to perform efficiently.

Although the study represents a comprehensive analysis of CSR, ownership structure, gender diversity, and their influence on FP, still the study has some limitations. Along with ownership structure, other CG mechanisms such as board characteristics, and audit quality may be useful tools for more comprehensive analysis. The inclusion of managerial ownership, government ownership, and family ownership in the same study is also an interesting insight for future research. The same research can be conducted by taking the financial sector such as the banking industry.

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## APPENDIXES

### Country-wise Fixed Effect Estimation

| Variables                  | Pakistan                |                      |                       |                         |                    |                     |                        |                      |                       |
|----------------------------|-------------------------|----------------------|-----------------------|-------------------------|--------------------|---------------------|------------------------|----------------------|-----------------------|
|                            | Dependent Variable: ROA |                      |                       | Dependent Variable: ROE |                    |                     | Dependent Variable: TQ |                      |                       |
|                            | Model 1                 | Model 2              | Model 3               | Model 1                 | Model 2            | Model 3             | Model 1                | Model 2              | Model 3               |
| C                          | 0.093*<br>(1.719)       | 0.767*<br>(1.827)    |                       | 0.513<br>(1.086)        | 0.163*<br>(1.915)  | 0.735*<br>(1.831)   | -0.003**<br>(-2.231)   | -0.042**<br>(-2.142) | -0.013***<br>(-5.167) |
| SCV                        | 0.051**<br>(2.291)      |                      | 0.181**<br>(2.171)    | 0.294*<br>(1.813)       |                    | 0.061**<br>(2.153)  | 0.681<br>(0.941)       |                      | 0.196*<br>(1.738)     |
| BM_CSR                     |                         | 0.027**<br>(2.315)   | 0.003***<br>(6.295)   |                         | 0.495*<br>(1.739)  | 0.195**<br>(2.313)  |                        | 0.398<br>(0.759)     | 0.275*<br>(1.749)     |
| OC                         | 0.001***<br>(6.937)     | 0.062**<br>(2.215)   | 0.003***<br>(5.342)   | 0.435<br>(0.938)        | 0.291<br>(1.241)   | 0.577*<br>(1.803)   | 0.436*<br>(1.893)      | 0.375*<br>(1.924)    | 0.176<br>(0.488)      |
| IO                         | 0.397*<br>(1.837)       | 0.295*<br>(1.913)    | 0.203**<br>(2.216)    | 0.006***<br>(5.345)     | 0.075*<br>(1.921)  | 0.740<br>(0.822)    | 0.031*<br>(1.769)      | 0.774<br>(0.927)     | 0.496*<br>(1.846)     |
| GDiv                       | 0.697*<br>(1.779)       | 0.193*<br>(1.828)    | 0.392*<br>(1.824)     | 0.213*<br>(1.914)       | 0.226<br>(0.715)   | 0.421*<br>(1.914)   | 0.064<br>(0.553)       | 0.238*<br>(1.844)    | 0.092**<br>(2.192)    |
| FSZ                        | 0.268<br>(1.167)        | 0.061*<br>(1.765)    | 0.365**<br>(2.231)    | 0.495*<br>(1.737)       | 0.195*<br>(1.846)  | 0.715**<br>(2.314)  | 0.715<br>(1.059)       | 0.466*<br>(1.891)    | 0.721*<br>(1.899)     |
| LEV                        | -0.092***<br>(-4.957)   | -0.036**<br>(-2.185) | -0.001***<br>(-7.185) | -0.105*<br>(-1.871)     | -0.362<br>(-0.719) | -0.346*<br>(-1.912) | -0.466*<br>(-1.739)    | -0.661*<br>(-1.824)  | -0.295**<br>(2.261)   |
| GRW                        | -0.005**<br>(-2.137)    | -0.116*<br>(-1.851)  | -0.437<br>(-1.152)    | -0.661*<br>(-1.698)     | -0.269<br>(-0.573) | -0.389*<br>(-1.825) | -0.169*<br>(-1.848)    | -0.294<br>(-0.927)   | -0.554*<br>(-1.806)   |
| TANG                       | 0.167*<br>(1.729)       | 0.381<br>(1.016)     | 0.314<br>(0.827)      | 0.576<br>(0.695)        | 0.244<br>(0.392)   | 0.534*<br>(1.893)   | 0.196<br>(0.442)       | 0.554<br>(0.793)     | 0.814<br>(0.943)      |
| R-square                   | 0.512                   | 0.439                | 0.418                 | 0.625                   | 0.584              | 0.523               | 0.405                  | 0.352                | 0.319                 |
| F-statistics               | 3.552***                | 5.165***             | 9.342***              | 7.921***                | 4.195***           | 6.453***            | 6.392***               | 4.162***             | 7.064***              |
| Likelihood test (P-values) | 0.006                   | 0.008                | 0.002                 | 0.000                   | 0.003              | 0.001               | 0.000                  | 0.003                | 0.001                 |
| Hausman test (P-values)    | 0.001                   | 0.000                | 0.001                 | 0.000                   | 0.000              | 0.000               | 0.000                  | 0.000                | 0.000                 |

| Variables                  | India                   |                     |                      |                         |                      |                       |                        |                     |                    |
|----------------------------|-------------------------|---------------------|----------------------|-------------------------|----------------------|-----------------------|------------------------|---------------------|--------------------|
|                            | Dependent Variable: ROA |                     |                      | Dependent Variable: ROE |                      |                       | Dependent Variable: TQ |                     |                    |
|                            | Model 1                 | Model 2             | Model 3              | Model 1                 | Model 2              | Model 3               | Model 1                | Model 2             | Model 3            |
| C                          | 0.674<br>(0.935)        | 0.751**<br>(2.165)  | 0.081***<br>(7.195)  | -0.001***<br>(-4.913)   | -0.085**<br>(-2.348) | -0.008***<br>(-8.095) | 0.051**<br>(2.212)     | 0.654<br>(0.765)    | 0.229*<br>(1.931)  |
| SCV                        | 0.081***<br>(4.923)     | —                   | 0.185*<br>(1.734)    | 0.746*<br>(1.847)       | —                    | 0.435*<br>(1.927)     | 0.072**<br>(2.224)     | —                   | 0.514*<br>(1.856)  |
| BM_CSR                     | —                       | 0.116*<br>(1.822)   | 0.095**<br>(2.186)   | —                       | 0.362<br>(5.495)     | 0.416*<br>(1.728)     | —                      | 0.392*<br>(1.728)   | 0.226*<br>(1.857)  |
| OC                         | 0.622*<br>(1.769)       | 0.395*<br>(1.764)   | 0.568<br>(0.834)     | 0.153***<br>(1.915)     | 0.062**<br>(2.165)   | 0.479<br>(0.749)      | 0.512*<br>(1.823)      | 0.654<br>(0.984)    | 0.753*<br>(1.795)  |
| IO                         | 0.216***<br>(5.834)     | 0.062**<br>(2.275)  | 0.761*<br>(1.849)    | 0.641*<br>(1.726)       | 0.433<br>(1.213)     | 0.288**<br>(2.327)    | 0.544<br>(0.926)       | 0.221*<br>(1.804)   | 0.733*<br>(1.911)  |
| GDiv                       | 0.006***<br>(7.267)     | 0.085***<br>(8.195) | 0.195**<br>(2.281)   | 0.318*<br>(1.791)       | 0.162*<br>(1.698)    | 0.295<br>(0.689)      | 0.002***<br>(6.811)    | 0.064**<br>(2.196)  | 0.341*<br>(1.828)  |
| FSZ                        | 0.096**<br>(2.134)      | 0.281<br>(1.115)    | 0.422*<br>(1.819)    | 0.512<br>(1.215)        | 0.845*<br>(1.837)    | 0.411*<br>(1.781)     | 0.216*<br>(1.718)      | 0.461<br>(0.749)    | 0.392*<br>(1.719)  |
| LEV                        | -0.001***<br>(-3.928)   | -0.286*<br>(-1.927) | -0.533*<br>(-1.794)  | -0.036*<br>(-1.834)     | -0.623<br>(-1.122)   | -0.342*<br>(-1.821)   | -0.031**<br>(-2.034)   | -0.629*<br>(-1.926) | -0.296<br>(-1.158) |
| GRW                        | -0.839<br>(-0.691)      | -0.376*<br>(-1.899) | -0.195**<br>(-2.295) | -0.361***<br>(-6.912)   | -0.412**<br>(-2.316) | -0.071***<br>(-5.365) | -0.561<br>(-0.753)     | -0.662<br>(-0.754)  | -0.185*<br>(1.857) |
| TANG                       | 0.061<br>(0.465)        | 0.386<br>(0.844)    | 0.395*<br>(1.896)    | 0.128<br>(0.828)        | 0.496*<br>(0.925)    | 0.386<br>(0.586)      | 0.812<br>(0.833)       | 0.553<br>(0.496)    | 0.564<br>(0.789)   |
| R-square                   | 0.515                   | 0.524               | 0.445                | 0.511                   | 0.476                | 0.391                 | 0.392                  | 0.334               | 0.381              |
| F-statistics               | 7.165***                | 5.952***            | 6.291***             | 10.944***               | 7.625***             | 9.564***              | 4.225***               | 5.934***            | 8.465***           |
| Likelihood test (P-values) | 0.000                   | 0.004               | 0.001                | 0.000                   | 0.003                | 0.002                 | 0.002                  | 0.004               | 0.000              |
| Hausman test (P-values)    | 0.000                   | 0.000               | 0.000                | 0.000                   | 0.000                | 0.000                 | 0.000                  | 0.000               | 0.000              |

| Variables                  | Bangladesh              |                      |                      |                         |                      |                      |                        |                      |                    |
|----------------------------|-------------------------|----------------------|----------------------|-------------------------|----------------------|----------------------|------------------------|----------------------|--------------------|
|                            | Dependent Variable: ROA |                      |                      | Dependent Variable: ROE |                      |                      | Dependent Variable: TQ |                      |                    |
|                            | Model 1                 | Model 2              | Model 3              | Model 1                 | Model 2              | Model 3              | Model 1                | Model 2              | Model 3            |
| C                          | 0.007***<br>(9.391)     | 0.021***<br>(7.253)  | 0.003***<br>(12.958) | -0.827*<br>(-1.829)     | -0.012**<br>(-2.155) | -0.351**<br>(-2.116) | 0.926<br>(1.073)       | 0.501*<br>(1.918)    | 0.439*<br>(1.861)  |
| SCV                        | 0.628*<br>(1.772)       | —                    | 0.251**<br>(2.353)   | 0.218*<br>(1.729)       | —                    | 0.062**<br>(2.253)   | 0.007***<br>(5.192)    | —                    | 0.743*<br>(1.912)  |
| BM_CSR                     | —                       | 0.584*<br>(1.863)    | 0.769*<br>(1.928)    | —                       | 0.196**<br>(2.195)   | 0.796*<br>(1.849)    | —                      | 0.476<br>(0.938)     | 0.209*<br>(1.791)  |
| OC                         | 0.825*<br>(1.791)       | 0.638<br>(0.894)     | 0.227*<br>(1.816)    | 0.061***<br>(3.716)     | 0.745*<br>(1.902)    | 0.365*<br>(1.792)    | 0.392<br>(0.938)       | 0.206**<br>(2.051)   | 0.165**<br>(2.256) |
| IO                         | 0.628<br>(0.398)        | 0.628*<br>(1.837)    | 0.732*<br>(1.698)    | 0.092<br>(1.042)        | 0.082*<br>(1.738)    | 0.034*<br>(1.805)    | 0.928*<br>(1.698)      | 0.008***<br>(6.943)  | 0.907<br>(1.127)   |
| GDiv                       | 0.635*<br>(1.822)       | 0.694<br>(0.869)     | 0.468<br>(0.795)     | 0.205**<br>(2.191)      | 0.341*<br>(1.742)    | 0.611*<br>(1.699)    | 0.008**<br>(2.203)     | 0.195*<br>(1.849)    | 0.226*<br>(1.765)  |
| FSZ                        | 0.925***<br>(5.756)     | 0.267**<br>(2.275)   | 0.389*<br>(1.754)    | 0.376*<br>(1.916)       | 0.433<br>(0.516)     | 0.261*<br>(1.852)    | 0.051**<br>(2.051)     | 0.192<br>(0.655)     | 0.465*<br>(1.859)  |
| LEV                        | -0.251<br>(-0.533)      | -0.436**<br>(-2.369) | -0.181*<br>(-1.762)  | -0.629*<br>(-1.726)     | -0.533*<br>(-1.843)  | -0.315**<br>(-2.225) | -0.003***<br>(-4.135)  | -0.299**<br>(-2.157) | -0.379<br>(-0.865) |
| GRW                        | -0.925**<br>(-1.825)    | -0.296*<br>(-1.816)  | -0.512*<br>(-1.887)  | -0.629<br>(-0.851)      | -0.351*<br>(-1.901)  | -0.362*<br>(-1.706)  | -0.003**<br>(-2.130)   | -0.262*<br>(-1.895)  | -0.749<br>(-1.034) |
| TANG                       | 0.051*<br>(1.725)       | 0.746<br>(0.855)     | 0.375<br>(0.927)     | 0.605<br>(0.719)        | 0.382<br>(1.251)     | 0.381<br>(0.814)     | 0.624*<br>(1.839)      | 0.091<br>(0.591)     | 0.389<br>(0.579)   |
| R-square                   | 0.351                   | 0.389                | 0.416                | 0.395                   | 0.346                | 0.291                | 0.382                  | 0.298                | 0.367              |
| F-statistics               | 2.326**                 | 3.469***             | 2.359**              | 5.062***                | 6.084***             | 5.926***             | 4.052***               | 2.306**              | 3.895***           |
| Likelihood test (P-values) | 0.000                   | 0.003                | 0.005                | 0.000                   | 0.000                | 0.015                | 0.000                  | 0.001                | 0.017              |
| Hausman test (P-values)    | 0.002                   | 0.000                | 0.006                | 0.000                   | 0.010                | 0.004                | 0.000                  | 0.002                | 0.004              |

| Variables                  | Sri Lanka               |                       |                      |                         |                       |                      |                        |                     |                      |
|----------------------------|-------------------------|-----------------------|----------------------|-------------------------|-----------------------|----------------------|------------------------|---------------------|----------------------|
|                            | Dependent Variable: ROA |                       |                      | Dependent Variable: ROE |                       |                      | Dependent Variable: TQ |                     |                      |
|                            | Model 1                 | Model 2               | Model 3              | Model 1                 | Model 2               | Model 3              | Model 1                | Model 2             | Model 3              |
| C                          | 0.093*<br>(1.719)       | 0.164<br>(0.343)      | 0.436*<br>(1.733)    | 0.513*<br>(1.772)       | 0.361<br>(0.864)      | 0.241*<br>(1.814)    | -0.103**<br>(-2.231)   | -0.421*<br>(-1.759) | -0.062**<br>(-2.218) |
| SCV                        | 0.051**<br>(2.291)      | —                     | 0.736*<br>(1.721)    | 0.294*<br>(1.813)       | —                     | 0.625*<br>(1.796)    | 0.681<br>(0.941)       | —                   | 0.164**<br>(2.149)   |
| BM_CSR                     | —                       | 0.296<br>(0.744)      | 0.534*<br>(1.926)    | —                       | 0.216**<br>(2.317)    | 0.395*<br>(1.838)    | —                      | 0.453<br>(0.816)    | 0.513*<br>(1.716)    |
| OC                         | 0.001***<br>(6.937)     | 0.052**<br>(2.238)    | 0.243*<br>(1.813)    | 0.435<br>(0.938)        | 0.326*<br>(1.925)     | 0.289**<br>(2.219)   | 0.036*<br>(1.893)      | 0.176*<br>(0.819)   | 0.667<br>(0.928)     |
| IO                         | 0.397*<br>(1.837)       | 0.633*<br>(0.864)     | 0.376<br>(0.769)     | 0.206*<br>(1.745)       | 0.034**<br>(2.296)    | 0.439*<br>(1.699)    | 0.431*<br>(1.769)      | 0.711*<br>(1.898)   | 0.418*<br>(1.736)    |
| GDiv                       | 0.697<br>(0.479)        | 0.779*<br>(1.856)     | 0.469*<br>(1.841)    | 0.213*<br>(1.714)       | 0.746<br>(1.216)      | 0.564*<br>(1.876)    | 0.064<br>(0.553)       | 0.185<br>(0.865)    | 0.376*<br>(1.849)    |
| FSZ                        | 0.268**<br>(2.167)      | 0.744<br>(0.496)      | 0.116*<br>(0.498)    | 0.495<br>(0.637)        | 0.144*<br>(1.877)     | 0.375**<br>(2.318)   | 0.715*<br>(1.859)      | 0.228*<br>(1.915)   | 0.062**<br>(2.241)   |
| LEV                        | -0.392***<br>(-4.957)   | -0.334**<br>(-2.276)  | -0.186**<br>(-2.316) | -0.105*<br>(-1.871)     | -0.136***<br>(-3.987) | -0.435**<br>(-2.243) | -0.466*<br>(-1.739)    | -0.379*<br>(-1.922) | -0.649*<br>(-1.715)  |
| GRW                        | -0.005***<br>(-7.937)   | -0.034***<br>(-9.469) | -0.136**<br>(-2.315) | -0.661*<br>(-1.698)     | -0.622<br>(-0.798)    | -0.296*<br>(-1.713)  | -0.169*<br>(-1.848)    | -0.536<br>(-0.811)  | -0.185*<br>(-1.726)  |
| TANG                       | 0.067*<br>(1.729)       | 0.253<br>(0.496)      | 0.486<br>(0.728)     | 0.576<br>(0.695)        | 0.392<br>(0.894)      | 0.716*<br>(1.716)    | 0.196<br>(0.442)       | 0.915<br>(0.653)    | 0.456<br>(0.564)     |
| R-square                   | 0.512                   | 0.426                 | 0.397                | 0.625                   | 0.561                 | 0.537                | 0.405                  | 0.346               | 0.317                |
| F-statistics               | 3.552***                | 2.261**               | 7.162***             | 7.921***                | 5.264***              | 6.196***             | 6.392***               | 2.264**             | 5.345***             |
| Likelihood test (P-values) | 0.006                   | 0.003                 | 0.001                | 0.000                   | 0.003                 | 0.001                | 0.000                  | 0.004               | 0.001                |
| Hausman test (P-values)    | 0.001                   | 0.000                 | 0.000                | 0.000                   | 0.000                 | 0.000                | 0.000                  | 0.000               | 0.000                |