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# Impact of Corporate Social Responsibility on Firm Performance: Mediating Role of Information Asymmetry

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**Abstract:** This study examines the mediating role of information asymmetry (IA) in the relationship between corporate social responsibility (CSR) and firm performance (FP). In the study, an unbalanced panel data spanning over the eleven years, starting from 2006 to 2017, with 1561 observations relating to non-financial firms is considered for the analysis. All firms included in the data are listed at the Pakistan stock exchange (PSX). The generalized method of moments (GMM) is applied for the testing of the sample. The four-step process of Baron and Kenny (1986) is applied to monitor the behaviour of mediating variables. The empirical results suggest that corporate social responsibility (CSR) significantly, positively influences firm performance (FP). While information asymmetry (IA) partially mediates the relationship of CSR and FP. We argue that investment in CSR projects and reduction in information asymmetry (IA) will systematically improve firm performance (FP) for companies specifically operating inside Pakistan.

**Keywords:** Corporate social responsibility, Generalized methods of moments, Information asymmetry, Pakistan stock exchange, Firm performance

## 1. Introduction

Over the last few decades, corporate social responsibility (CSR) evolved as a key topic for academics as well as practitioners and is continuously under a hot debate. For value creation, CSR practices are important (Jamali, 2008). The awareness and attention about CSR practices have been growing over the past few decades. Corporations nowadays disclose information about CSR even more, which presents a positive image in society, satisfies stakeholders, and increases investors' confidence (Yusoff, Mohamad, & Darus, 2013). CSR is garnering more attention not only from corporations but also from society as a whole (Amran et al., 2017).

There are stakeholders, which somehow force firms to do more CSR-related works. In response, many of them start CSR projects while other firms oppose and go against such investments. This strain led the researchers to explore the area consequently, they conducted various studies on CSR-FP linkage (Nkemjika & Nkechi, 2017). Literature suggests that linkages of CSR with FP are very well explored. There exists plenty of research on the association of CSR and FP however findings are still inconclusive (Blasi, Caporin, & Fontini, 2018). On the other side, in the capital market, CSR and firm characteristics are linked. Literature shows that firm engagement in CSR leads to greater market yields (Flammer, 2013) fewer capital constraints (Cheng, Ioannou, & Serafeim, 2014) reduced capital cost (Dhaliwal, Radhakrishnan, Tsang, & Yang, 2012), and better risk management (Jo & Na, 2012).

Most of CSR literature belongs to developed countries (Goyal & Kumar, 2017). Literature reports less work on CSR from developing countries (Torrico, Frank, & Tavera, 2018). There is a lack of attention towards CSR practices in developing nations (Muhammad Shoukat Malik & Kanwal, 2018). Studies that are conducted on CSR in developing countries are less than 10 % (Pisani, Kourula, Kolk, & Meijer, 2017). Concerning Pakistan, the concept of CSR is quite new as it was officially recognized just 10 years ago when the "securities and exchange commission of Pakistan (SECP)" introduced it in its first general order in the year 2009. And the rule states that companies are bound to disclose their spendings relating to CSR which will be stated in the annual directors' reports. Along with that SECP issued voluntary standards in 2013 to make companies more answerable to stakeholders (Ehsan et al., 2018).

The information environment of a company is perhaps one of the most significant variables that may influence fund management of the company, equity structure employed, risk assessment and management environment, firm performance, and many others. A firm may bear a high cost of capital and lower liquidity due to an uncertain environment (Shroff, Sun, White, & Zhang, 2013). Regardless of the significance of information asymmetry (IA), rare research has looked at how CSR activities affect IA (Healy & Palepu, 2001).

Stakeholder theory states that individuals or groups having an interest in the activity of any organization are referred to as stakeholders (Donaldson & Preston, 1995). It is the duty of managers to assist stakeholders (Freeman, 1984; Wood, 1991). By adhering to CSR activities, companies may help to create a good business image by serving the expectations of stakeholders (Surroca, Tribó, & Waddock, 2010). Cao, Myers, and Omer (2012) say that greater quality of earnings is due to a better image, which is fundamentally linked to a reduced level of IA (Peterson, Schmardebeck, & Wilks, 2015).

Agyemang and Ansong (2017) state the relationship between CSR and FP is inconclusive due to some neglected relevant mediating variables. And it is quite possible that some of the key intervening variables, which may have been overlooked in previous researches, might have a significant effect on CSR and FP association (Alafi & Hasoneh, 2012). A positive link has been found in CSR and FP by using different moderating variables. CSR and FP have a positive link because CSR positively impacts competitive advantage, customer satisfaction, and reputation (Saeidi, Sofian, Saeidi, Saeidi, & Saaeidi, 2015).

Moreover, CSR and FP are linked to the moderating effects of marketing competence (Bai & Chang, 2015). A study used advertisement intensity as a moderator in CSR and FP link (Rahman, Rodríguez-Serrano, & Lambkin, 2017). Brand performance and brand equity are used as moderators (Lai, Chiu, Yang, & Pai, 2010). Lai et al. (2010) used intellectual capital and industry type as mediators and moderators respectively in the CSR-FP link. Javeed and Lefen (2019) study the association of ownership concentration and managerial ownership as a moderating variable and found a positive link between CSR and FP.

Investors are very attentive to the information on CSR (Cho, Lee, & Pfeiffer Jr, 2013). Literature shows investors utilize CSR performance data to make investment decisions (Cohen, Holder-Webb, Nath, & Wood, 2011). As a result, companies aim to decrease IA by making voluntary disclosures regarding CSR efforts. Fieseler (2011) reports that CSR helps in the dissemination of information from management to investors, helps in the improvement of stock prices. As per the best of the author's knowledge, this study is the foremost attempt to analyze the mediating role of IA in the CSR-FP link in the context of Pakistan.

## 2. Literature Review

A significant amount of research on CSR-FP association has been carried out (N. Khan, Malik, & Saghir, 2020). Abbott and Monsen (1979) perhaps the first time investigated this relationship. In literature, some studies claim an insignificant association between CSR and FP while others suggest CSR negatively affects the financial affairs of corporations (Nelling & Webb, 2009). Firm goodwill can be raised by adopting CSR which supports stakeholders' interests and results in better firm performance (Cheung, Jiang, Mak, & Tan, 2013). For the implementation of CSR, internal stakeholders play a critical role (Pearce & Ensley, 2004). A common vision has been shown in several studies to improve both innovative effectiveness and FP (Pearce & Ensley, 2004). In addition, CSR helps significantly to improve firm performance (Choi & Yu, 2014). While, several other studies report insignificant relationship in the implementation of CSR and FP (Soana, 2011). CSR increases, not just the company's social value and its repute, but also significantly contributes to its profitability (Sial, Zheng, Khuong, Khan, & Usman, 2018).

According to Cheng et al. (2014), less agency cost and IA is found in the companies with increased involvement in CSR. Raithel and Schwaiger (2015) report that good CSR performance improves FP. This is done by attracting high-quality employees, customer loyalty, getting considerable attention from analyst coverage. Involvement in CSR practices sends a better signal for a stronger future FP (Lys, Naughton, & Wang, 2015) and prevent top management of the company to engage in insider trading (Gao, Lisic, & Zhang, 2014). Information asymmetry arises when private information is held by one entity and another entity might fail to make good decisions (Connelly, Certo, Ireland, & Reutzel, 2011). According to Healy and Palepu (2001), IA may be reduced as a result of corporate disclosure, leading to greater liquidity and less capital cost.

The relationship between CSR and IA is explored recently by (Cho et al., 2013; Cui, Jo, & Na, 2018). Cho et al. (2013) show bid-ask spread can be reduced by investing in CSR. While making investment decisions CSR can be a useful tool to help investors. Cui et al. (2018) study the CSR-IA link using several estimating models i.e. fixed effects, 2SLS, and GMM models, using a U.S. sample from 1991 to 2010 results of which show that the two constructs of interest have an inverse connection. Furthermore, in high-risk companies, the CSR–IA relationship becomes more negative.

Gelb and Strawser (2001) report that relatively more information is disclosed by those companies which are engaged in CSR, as compared to those which are not doing CSR work. This argument is justified because it shows the responsibility of the firm towards its stakeholders. Cho et al. (2013) use a proxy of bid-ask spread to measure IA, the study found that asymmetry of information in the firm is reduced in companies that are engaged in CSR-related activates. According to the literature, IA can be reduced by increasing precision (Dhaliwal, Li, Tsang, & Yang, 2011). As indicated by information intermediaries, we predict minimal IA to be related to good CSR (Healy & Palepu, 2001).

Keeping in view the importance of the association between CSR and firm performance, and inconclusive findings regarding the said relationship. The study considers information asymmetry as a potential mediating variable owing to its significant character highlighted in the literature above. Following are the two hypotheses, formulated to check the presence of mediating role of information asymmetry (IA):

**$H_1$**: CSR significantly and positively affects ROA

**$H_2$**: IA mediates the association of CSR and ROA

## 2.1 Conceptual Model

Figure 1 shows the conceptual model of this study. In the model, the association of CSR with ROA is demonstrated with a directional arrow. The variable of IA is mediating the association of CSR and FP.

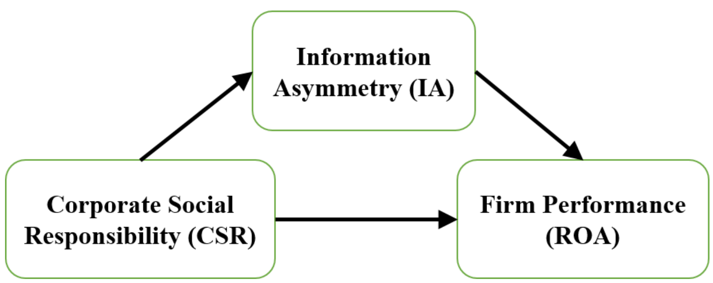


Figure 1: Conceptual Model

### 2.2 Data and Research Methodology

This study uses all non-financial firms registered at PSX. The data is gathered from balance sheet analysis (BSA), a document published by Pakistan's central bank, and annual reports of companies. In this research, financial and insurance companies are deliberately dropped out because of their dissimilar accounting and other features. The analysis is based on unbalanced panel data of 1561 observations. The study uses the GMM technique to evaluate the data and to test hypotheses as it allows for the resolution of possible issues, resulting from the use of panel sample estimation. To check the mediating role of IA in CSR and FP, the procedure proposed by Baron and Kenny (1986) is undertaken.

## 2.3 Measurement of Variables

This section explains the measurements of variables and their proxies used in the study. To check the presence of mediating behaviour in CSR and FP, the variable of IA is taken as mediating variable. CSR is an independent variable (IV), FP is a dependent variable (DV), while ROA is a measuring proxy of FP in the study. Table 2 shows a list of variables and their proxies.

*Table 2: Measurement of variables*

| Variable | Proxy | Reference |
|---|---|---|
| **Independent Variable** | | |
| CSR | CSR monetary spending ratio = total CSR expenditures ÷ earnings after-tax | Ehsan et al. (2018) |
| **Dependent Variable** | | |
| Financial Performance | Return on Assets (ROA) = Net Income ÷ Total Assets | M Shoukat Malik and Nadeem (2014) |
| **Mediating Variable** | | |
| Information Asymmetry | "Asymmetric information is captured through insiders' superior information on future performance" | Piotroski and Roulstone (2005), Ataullah, Davidson, Le, and Wood (2014), M. H. Khan, Fraz, and Hasan (2016) |
| **Control Variables** | | |
| Size of firm | Log of TA | Yang and Baasandorj (2017), Boubaker, Cellier, Manita, and Saeed (2020), Odeh, Alshannag, Eneizan, Alkhawaldeh, and Makhamreh (2020) |
| Age of firm | Age of firm (In years) | |
| Leverage of firm | TL÷TA | |

## 3. Results and Discussions

### 3.1 Descriptive Statistics

Table 3 presents the descriptive statistics for all variables involved in the study. The mean stats of CSR is 0.016, the median is 0.003, the maximum and minimum values of CSR are 3.829 and -2.744 respectively, and the value of S.D is 0.198. The mean of IA is 0.485 and the median value is 0.000 while the maximum, minimum, and standard deviation values are 1.000, 0.000, and 0.500 respectively. The mean of ROA is 0.038 and the median value is 0.036 while the maximum, minimum, and standard deviation values are 1.785, -2.643, and 0.131 respectively. Results confirm the fitness of data for further testing. For simplicity, a detailed discussion is avoided.

*Table 3: Descriptive statistics*

| | CSR | IA | ROA | SIZE | AGE | LEV |
|---|---|---|---|---|---|---|
| **Mean** | 0.016 | 0.485 | 0.038 | 15.336 | 3.508 | 0.609 |
| **Median** | 0.003 | 0.000 | 0.036 | 15.176 | 3.466 | 0.578 |
| **Max** | 3.829 | 1.000 | 1.785 | 20.195 | 5.050 | 8.187 |
| **Min** | -2.744 | 0.000 | -2.643 | 10.008 | 1.792 | 0.004 |
| **Std. Dev.** | 0.198 | 0.500 | 0.131 | 1.648 | 0.460 | 0.403 |

***Source***: Author's calculations

## 3.2 Correlation Analysis

Table 4 presents statistics of correlation. The association of CSR with ROA and firm age is positive, whereas the association of CSR with IA is negative. The association of CSR with the leverage of firm and age is negative. The association of ROA with IA is also negative. The table shows that the correlation coefficients are within acceptable limits, which supports that there is no issue in the data concerning multicollinearity.

***Table 4: Correlation matrix***

| | CSR | IA | ROA | SIZE | AGE | LEV |
|---|---|---|---|---|---|---|
| **CSR** | 1.000 | | | | | |
| **IA** | -0.046 | 1.000 | | | | |
| **ROA** | 0.017 | -0.178 | 1.000 | 0.164 | 0.004 | -0.469 |
| **SIZE** | -0.016 | 0.052 | 0.164 | 1.000 | 0.126 | -0.187 |
| **AGE** | 0.007 | -0.013 | 0.004 | 0.126 | 1.000 | -0.112 |
| **LEV** | -0.021 | 0.047 | -0.469 | -0.187 | -0.112 | 1.000 |

***Source***: Author's findings

## 3.3 Regression Results

***Table 5: Impact of CSR on ROA, mediating role of IA***

| | **Model 1** | | | **Model 2** | | | **Model 3** | | | **Model 3** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ROA | | | IA | | | ROA | | | ROA | | |
| Variables | *Coef* | *t-stat* | *Prob* | *Coef* | *t-stat* | *Prob* | *Coef* | *t-stat* | *Prob* | *Coef* | *t-stat* | *Prob* |
| **CSR** | 0.008 | 4.666 | 0.000 | -4.218 | -2.062 | 0.040 | | | | 0.005 | 4.223 | 0.000 |
| **IA** | | | | | | | -0.025 | -2.914 | 0.004 | -0.028 | -3.612 | 0.000 |
| **Firm Size** | 0.003 | 1.496 | 0.135 | -1.938 | -0.053 | 0.125 | 0.009 | 3.509 | 0.001 | 0.006 | 3.899 | 0.000 |
| **Firm Age** | -0.007 | -1.938 | 0.053 | -0.021 | -0.503 | 0.615 | -0.004 | -0.916 | 0.360 | -0.006 | -1.378 | 0.168 |
| **LEV** | -0.204 | -8.775 | 0.000 | -0.271 | -1.229 | 0.219 | -0.213 | -11.232 | 0.000 | -0.217 | -9.003 | 0.000 |
| *Adj.* $R^2$ | 0.160 | | | 0.129 | | | 0.116 | | | 0.174 | | |
| *J-Stat* | 2.126 | | | 0.022 | | | 2.686 | | | 0.164 | | |
| *Prob J-Stat* | 0.145 | | | 0.882 | | | 0.101 | | | 0.685 | | |

*The table reports the result of the generalized method of moment (GMM) technique. It includes coefficients, t-statistic, and Probability stats. The table also reports Adj. $R^2$, J-Stat, and Prob. of J-Stat for all the models. Model 1 shows the impact of CSR on ROA, Model 2 indicates the impact of CSR on IA, Model 3 shows the impact of IA on ROA, while Model 4 presents the impact of CSR and IA on ROA.*

***Source***: Author's calculations

As per the results of model-1, CSR significantly, positively impacts ROA. It implies that the allocation of resources to CSR activities will increase the firm performance. The confidence of shareholders uplifts when corporations are involved in CSR (Aerts, Cormier, & Magnan, 2008). It is the CSR that helps to build a good association with state holders that ultimately results in increased firm performance (Waddock & Graves, 1997). For control variables, firm age significantly, negatively impacts ROA, if elderly enterprises invest in CSR activities, the effect will be negative. The control variable, firm age significantly, negatively influences firm performance. An older firm that has been allocating its resources to CSR work will eventually lead to a reduced ROA. These results confirm the finding of (Nyeadi, Ibrahim, & Sare, 2018). The second control variable, leverage influences ROA significantly in a negative direction means a firm with a large amount of debt will have a lower ROA. These findings are aligned with (Yang & Baasandorj, 2017).

As per the results of model-2 CSR influences the variable of information asymmetry (IA) significantly, negatively. In model-2 all control variables, firm size, firm age, and leverage are insignificant. The adjusted $R^2$ with the value of (0.129) indicates that the effect of the independent variable is 12.9 percent on the dependent variable. The J-stat value is (0.022) the insignificant probability of J-stat (0.882). The second requirement of Baron and Kenny's (1986) approach is met in this case, as CSR significantly negatively influences IA. As a result, investing in CSR will help to alleviate the problem of information asymmetry. Similar findings are reported by (Samet & Jarboui, 2017) that any CSR work brings transparency to the information system of firms.

As per the results of model-3 information asymmetry (IA) influences ROA significantly, negatively. For control variables involved in model-3, firm size influences ROA significantly, positively. Leverage influences

ROA significantly, negatively whereas the effect of firm age is insignificant. The adjusted $R^2$ with the value of (0.116) indicates that the effect of the independent variable is 11.60 percent on the dependent variable. The J-stat value is (2.687) the insignificant probability of J-stat (0.101). The third requirement of Baron and Kenny's (1986) approach is met in this case, as IA significantly, negatively influences ROA. It means with an increase in information asymmetry, the ROA of the company decreases. These findings are in line with the study of (Fosu, Danso, Ahmad, & Coffie, 2016). Firm size has a significant and positive impact on ROA. It demonstrates that as the firm's size grows, so will its ROA. These findings are in line with (Roberts & Dowling, 2002). The variable of firm age is insignificant. The firm leverage influences ROA significantly, negatively, which reveals that companies having more debt in their pocket will have a lower ROA. These findings are in line with the study of (N. Khan & Malik, 2020).

As per the results of model-4, CSR and IA significantly, positively influences ROA. Baron and Kenny (1986) suggest that for a full mediation the impact independent variable on the dependent variable should be insignificant whereas the impact of mediating variable should be significant. And for partial mediation, his rule states, both independent and mediating variables should be significant. In our case, CSR and IA are significant and both are impacting ROA. Hence, IA partially mediates the relationship between CSR and ROA. And the impact of IA on ROA is significant and negative. The age of a firm impacts ROA significantly, positively. This demonstrates that as the firm expands, its ROA will also go up. The effect of the age of the firm on ROA is insignificant. The leverage of the firm influences ROA significantly, negatively. A firm will impact its ROA in a negative direction when it will have more debt-based financing. The adjusted $R^2$ with the value of (0.174) indicates that the effect of the independent variable is 17.40 percent on the dependent variable. The J-stat value is ( 0.164) with an insignificant probability of J-stat (0.685).

The above evidence of findings supports the stakeholder theory. Freeman (1984) states that firms should incorporate CSR mechanisms to communicate effectively with the manager and non-investing stakeholders. Engagement in CSR work will significantly reduce the conflict of interest among stakeholders via better communication (Harjoto & Jo, 2011). Firm managers are advised to consider and fulfill their legal as well as moral obligations towards company stakeholders (Cai, Lee, Xu, & Zeng, 2019). Lopatta, Buchholz, and Kaspereit (2016) recommend that CSR-related activities by a firm will improve earning quality, moral standards, and trustworthiness. This in return, will help to mitigate information asymmetry. Kim, Park, and Wier (2012) report that investing in CSR activities will induce managers to produce the high-quality financial reports. Cui et al. (2018) also report a negative association of CSR and IA, considers investment in CSR activities, supported by stakeholder's theory helps in building a good reputation of the firm. Hence, engagement in CSR-related activities makes the information environment more transparent, thereby reducing the asymmetry of information among various stakeholders, which will help to increase firm performance.

## 4. Conclusions

This research article studies the impact of CSR on FP and tests IA as mediating variable in their association. In the literature the extensive work has been done on CSR and FP association; however, it reports mixed and inconclusive findings. Agyemang and Ansong (2017) argue that inconclusive findings are perhaps due to some missing mediating factors. A major chunk of the work in the said relation is from developed countries. There are very few studies on CSR and FP relationships specifically in Pakistan (Jamali & Karam, 2018). This research is the first attempt in Pakistan, which examines the mediating effect of IA in CSR and FP association. The study is advantageous as it provides empirical findings from a developing country and augments the research gap. We contend that the contradictory findings between CSR and FP arise from the omission of related mediating variables, such as information asymmetry.

This study provides the following policy implications for shareholders and corporate planners in the context of Pakistan. CSR work can benefit firms strategically in the shape of enhanced firm performance, and firms practicing CSR will have a competitive advantage over non-practicing firms. Researchers are recommended to conduct studies using the data of financial sectors in the association of CSR and firm performance in the presence of some relevant mediating variables. Similarly, such studies may be conducted in other countries for the validation and generalizability of results.

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