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Governance Innovation and Firm Performance: Empirical Evidence from the Automotive Industry in Pakistan

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Abstract

Corporate governance and innovation have been a hot topic in recent boardroom talks, whether in the trade or manufacturing industries. Governance innovations are highly significant for the survival of the motor vehicle industry like Honda, Nissan, New General Motors, and Toyota. The study chooses the motor vehicle industry which crosses the age of a century and sufficient corroborative support exists with the perspective of distinctive objectives. Using the population of all the automobile companies listed on the Pakistan stock exchange (PSX), we distill automobile companies to evaluate the firm performance using the panel data regression approach. The results show that there is a significant relationship between gender diversity, audit committees, and firm performance. Further, board size also has a positive impact on firm performance. We identify that the governance mechanism of firms found in default of the frequency of audit committee meetings. By considering results, only limited knowledge of finance directors and also very few numbers of female directors are on the board. Empirical findings of this work might be useful for policymakers in attempting to draft a corporate governance framework better able to monitor the financial performance of firms through female directors and also serve as a catalyst for the regulators of electric vehicles.

Keywords: Corporate Governance, Audit Committee, Board Size, Gender Diversity, Automotive Industry

JEL Classification Code: C23, L21, L25, L62

1. Introduction

Firm performance is a measure of an organization's ability to meet its goals in terms of money, market return, and investor value (Gabriel & Osazuwa, 2020). 'Firm performance' is the study's dependent variable. The concept of a company's performance is well-known. For a profit–based company it is always about generating revenue for a business firm. For a non-profit organization, it is delivering quality welfare services to the residents or individuals (Aifuwa, 2020). The firm's performance as an end, result, or achievement can be accomplished through administration, economics, and marketing, all of which contribute to the organization's competitiveness, efficiency, and effectiveness. Firm performance is often evaluated in the context of setting objectives, and their achievement includes results from people or groups contributing to the organization's primary goals (Gabriel & Osazuwa, 2020). Gimbert et al. (2010) stated that the performance evaluation framework is limited and belongs to a series of steps that provides a dynamic cycle

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to the firm by accumulating, preparing, and examining the assessed details of performance material.

Corporate governance oversees and monitors the firm as well as its employees, distorting issues with the compensation of the board of directors. The strength of ownership concentration, board structure, and the impact of stakeholders on firms are channeled through corporate governance (Hussain & Hadi, 2019a). Information about the organization's honesty/integrity, straightforwardness, authority, and management of operations is included in management and checking, and each of these aspects is subject to further reform under a specific code of corporate governance. In today's world, corporate governance has become a well-known financial exchange platform (Hussain & Hadi, 2019b). With great corporate governance, the performance of the firm will improve as well as organizational conflicts will reduce (Jantadej & Wattanatorn, 2020). Studies say that the poor performance of the firm shows poor corporate governance (Chen et al., 2011; Javid & Iqbal, 2010). Corporate governance shows that a strong control framework is in place inside the organization, therefore guaranteeing that business is created in the interest of investors and partners (Constantin, 2020). Strategy 'Corporate governance' is used to rule trading processes of the monetary structure of a firm in the direction of extending business wins.

There have been past investigations analyzing the association between the performance of the firm and corporate governance (Jantadej & Wattanatorn, 2020). However, the outcomes of these examinations were mixed. Corporate governance is critical for overseeing and directing project financing in the right direction. A corporate governance system is suited for a foundation that supports the relationship between the remuneration of the board of advisors and the firm's performance (Lee & Isa, 2015). The fundamental rules that address solid support for the firm administration are straightforwardness, answer-ability, leadership, and obligation. Corporate governance helps to minimize the problems associated with responsibility, transparency, and disclosure. Good corporate governance should protect the rights of its investors (Constantin, 2020). The empirical results show that directors focus on good governance and management quality to uplift firm performance (Esa et al., 2022).

Hussain et al. (2021) stated that an optimal combination of capital structure and good governance can increase the profitability of an organization. Corporate governance decreases asymmetric data among corporate and outside financial investors including debt holders. Then again, bondholders require a higher return for improved corporate governance. According to Jantadej and Wattanatorn (2020), improved board effectiveness is associated with a higher cost of borrowing. In addition, they find that the number of board member-board size, the number of the board meetings, and the percentage of non-executive on audit committee play are positively associated with the cost of debt financing. Tran (2022) found that economic growth has a positive impact on firm performance.

Nguyen (2021) stated that demographic factors of the board have a significant effect on firm performance. Corporate governance is considered as one of the important factors for organizational innovation, whereas innovation is affected by ownership structure and the board of directors' decisions about the company (Asensio-López et al., 2018). Innovation is described as the continuous progress in the products and services offered by organizations to increase the performance of the firm (Michalski, 2021). An organization would apply the change by innovations regarding the firm environment. Good governance is the key factor involved in the innovation process of the firm internally, externally, and as well as for the economy (Kovac & Spruk, 2021; Küttima et al., 2014).

The automotive industry in Pakistan is one of the fastest-growing industries in the country. Pakistan is the 35th largest producer of automobiles. The Automotive Industry in Pakistan (2021) is considered as a backbone of any industrialized nation and developing country like Pakistan (Dweiri et al., 2016). The government of Pakistan will soon announce a five-year economic plan to raise the production capacity of automobiles in Pakistan. The current study also focuses on corporate governance practices for the given economic objective. In collaboration with China, Pakistan will increase its automobile production from 6–8 million units in the next five years. Furthermore, Chinese automotive companies are ready to invest in Pakistan. The automotive sector is the second-largest taxpayer. The automobile sector is among the top growth sectors in large-scale manufacturing in Pakistan. It has been called the "industry of industries" (AIM).

Figure 1 shows the GDP of the automotive industry in the economy of Pakistan. Despite the decline in GDP, the contribution of the automotive sector remains dynamic over the years 2016 to 2020. It shows that the automotive sector maintained a resilient position in the economy of Pakistan. The aim of this study is how the automobile industry maintains economic resilience throughout pandemic financial crises.

2. Literature Review

The firm performance also includes the performance of the enterprise and its functions and the results of the operations. A firm's performance is determined not just by its efficiency, but also by the market in which it works. According to Bartoli and Blatrix (2018), performance is accomplished by many factors such as steering, assessment, proficiency, viability, and quality. The author suggests that

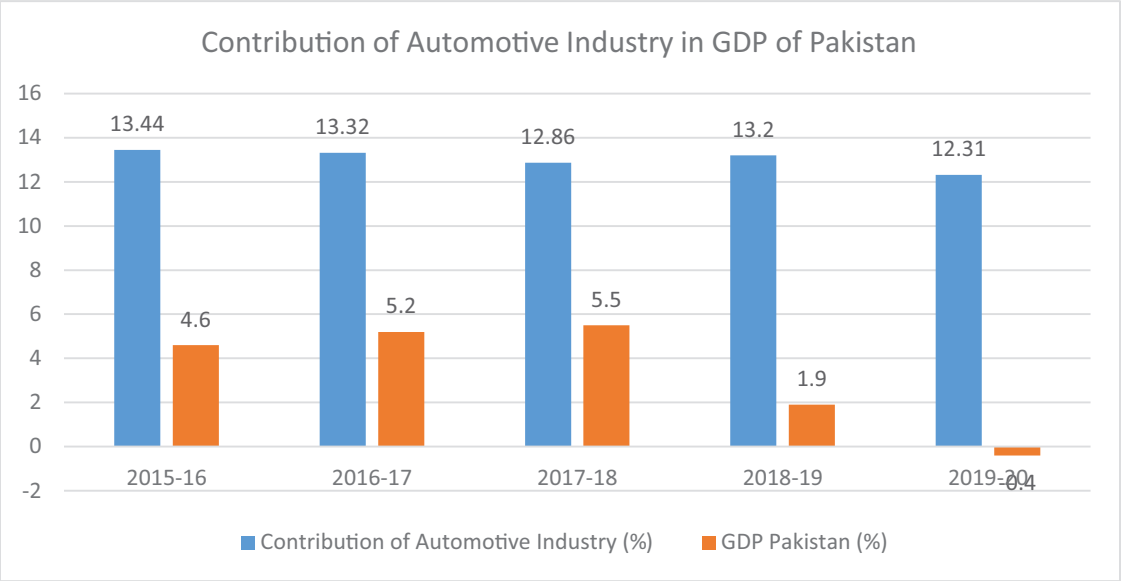

Figure 1: Contribution of the automotive industry to GDP (2016–2020)

Source: Pakistan Economic Survey (PES)

businesses take administration seriously, reduce costs, and improve performance (Vu et al., 2020). Firm performance is measured by using financial ratios of the return on assets. Financial ratios such as return on assets are used to assess a company's success. Firm performance is an economic category that reflects the ability of firms in using human resources and material resources to achieve the targets of the firm. Hence, performance is a result of the interaction of two factors: proficiency and effectiveness. As a term, performance covers several concepts, for example, the development of processes, productivity, profitability, effectiveness, and intensity.

An audit committee is a committee of an organization's board of directors that is responsible for oversight of the financial reporting process, selection of the independent auditor, and receipt of audit results both internal and external. The size of the committee, as well as the quality of the audit, are both significantly and positively related to the firm's performance (Rahman et al., 2019). According to Madi et al. (2014), an audit committee serves as a foundation for inward advancement and recognizes the process. According to Chen et al. (2020), audit partner workload compression (APWC) is negatively related to accruals quality and the probability of modified audit opinions, while positively associated with the propensity to report small profits and the prospect of audit report delays. Nevertheless, accounting firms and client firms with audit partners facing workload compression are not more likely to receive government sanctions. These findings imply that APWC impairs audit quality but not to the extent that it would lead to egregious outcomes. (Allegrini & Greco, 2011). Audit committee competency increases by an organization disclosing information. The capability of a committee can be enhanced by increasing the number of members of the audit committee. To control and improve the effectiveness of an organization's monetary and non-monetary components, Menon and Williams (1994), Raghunandan et al. (1998), and Beasley et al. (2000) recommended that audit committee members meet more frequently to improve transparency (Hicks & Goo, 2008).

Gender diversity is a vital element of corporate administration in boards but limited studies are found in this respect (Sanan, 2016). The appointment of females as a top management can decline the performance of the firm. (Low et al., 2015). According to Smith et al. (2006), there is a positive and significant relationship between female board members and firm performance. Gender diversity is calculated based on the presence of female board members on a company's board of directors. Gender diversity can cause a number of issues, such as a long decision-making cycle, confrontations, and risk management with opposing viewpoints. Women, in comparison to men, are more insightful with social, ecological, and corporate issues, have more extended prior work experience, and commune successfully, all of which create more extensive thoughts and partner require consideration (Srinidhi et al., 2011). The research shows that governance practices are highly significant for the performance and growth of the entity (Hussain & Hadi, 2019a).

Hadi and Hussain (2018) noticed that gender diversity has a high influence on firm performance. Because of their initial grasp of general cooperation, the gender socialization hypothesis suggests that ladies and men are different, particularly when it comes to moral issues (Rahman et al., 2017). Females are concerned and cautious about moral issues as well (Ibrahim et al., 2009). Based on their creativity, diligence, and group administration, Dezso and Ross (2008) claimed that women placed under the CEO rank might have a positive and powerful impact on productivity. However, before they start as CEO, they must check for problems and unbiased influence. Gender orientation is the most commonly recognized set of metrics, which has become a variety of testing areas in advanced and developing markets (Hoang et al., 2016; Assenga et al., 2018) and is similarly required in other areas such as legal issues, public policy, and regime (Barroso et al., 2011).

The effectiveness of a corporate board is determined by a number of factors, including board size and the number of free heads on the board. Previous research has yielded mixed results when it comes to the impact of board size on bookkeeping and market-based firm performance. For example, Kao et al. (2018) discovered a negative link between board size and different company performance metrics. Because of the excellent communication between the board of advisors, the size of the board of directors has an impact on how quickly a decision is taken. As a result, the size of the board of directors is an important aspect of corporate governance for determining the firm's performance (Hermuningsih et al., 2020). The size of the board of directors is regarded as the most important aspect of corporate governance (Arora & Sharma, 2016; Butt & Hasan, 2009). Firm value is lower in the family than non-family ownership. In addition, the corporate governance mechanisms such as the board size, independent director, and duality for family and non-family ownership have a strong significant influence on firm performance (Ibrahim & Samad, 2011).

Shahid et al. (2020) examined the relationship between corporate governance components and organizational performance in Pakistan. They identified an insignificant but positive relationship between board size and Return on Equity. According to Lehn et al. (2003), the performance of a company with a smaller board of directors is superior to that of a company with a large board of directors. The Pareto technique was used by Malik et al. (2015) to investigate the association between organization performance and board size. (Klein, 1998; Eisenberg et al., 1998; Jell-Ojobor & Windsperger, 2014) likewise discovered an adverse association between board size and the productivity of an organization and huge size of the board cause misunderstanding and poor decision-making. Studies by Choi et al. (2007), Coles et al. (2008), and Adeabah et al. (2019) indicate that managers within large boards contribute positively to an organization and this is also evident in corporate governance studies.

In recent years, the automobile industry has been rapidly increasing its market share of the broader industry. It's because of several business processes used by vehicle manufacturers, such as giving greater attention to vehicles with low prices (such as small vehicles and organic or eco-friendly automobiles) to capture the largest share of the market. However, as the automotive industry's market share grows, a number of hazards such as fossil fuel wastes and dangerous atmospheric deviations are occurring (Kushwaha & Sharma, 2016). Pakistan is an agro-based country since industry employs the majority of the population, and the automobile industry is the fastest-growing. This area deals with a number of problems as a result of the provincial and financial movement in relation to China and India. Only thirteen large-scale automobile organizations are operational. However, by working together, many challenges can be resolved (Al-Doori, 2019).

In recent years, the automobile sector in Europe and America, as well as the rest of the world, has been rapidly developing. Vehicle manufacturers are consistently engaged with the production process and procuring high deals as a result of increasing market demands around the world. The first is to adhere to the country's environmental standards to maintain the firm's performance over time. Various firms in the automotive industry are regularly active in developing AFVs (alternative fuel vehicles), and manufacturers are likewise wishing to enter this sector as this market is expanding due to environmental concerns and sustainability challenges (Sierzchula et al., 2012). Organizational performance, particularly in the automobile industry depends on fuel. The automotive industry is the world's largest business, in terms of manufacturing, overall industry share, demand, and so on, and has the most cases of fossil fuel byproducts and other natural issues around the world (McKinsey, 2013). The automobile is a structure and capability item-build component that includes undeniable level design and is paired with the current equipment (TEC, 2018). Because of globalization and environmental challenges, the automobile sector has been forced to evolve toward specified maintainability practices (Govindan et al., 2015).

3. Methodology and Theoretical Framework

This research uses a quantitative approach that utilizes secondary information. The corporate governance mechanism consists of an audit committee, gender diversity, and firm performance. The current study is using board size as a control variable. The research area is the automotive industry of Pakistan. The sample size

of 19 automotive industries was companies listed on the Pakistan Stock Exchange. The financial data is collected from the annual audited report from the financial year (2017–2020) related to companies in the automobile industry. The data of four companies is not available, resulting in a reduction in the number of companies to fifteen. The current study uses a panel data regression model with two measurements of firm performance (ROA and ROE). Torres et al. (2012) and Benson and Davidson (2009) also used panel data regression in their study.

Agency theory is reviewed as one of the most compelling theories to define corporate governance and firm performance (Hussain & Hadi, 2019b). Agency theory is a part of corporate governance. It involves the problems of directors controlling the company while the shareholders own the company. In finance, the most talked-about agency relationship exists between shareholders and the performance of a corporation where the top brass is elected to act in the interest of the true owner of the company.

Based on the literature review, the number of audit meetings, women on board, number of directors on the board, and the return on the assets, statistically influence firm performance. The number of variables chosen in this study is shown in Table-1. All these variables are considered as independent variables and firm performance is considered as the dependent variable. Board size is considered a control variable. The relationship between these explanatory variables and the firm performance is theorized:

H1: *Audit Committee has a relationship with Firm Performance.*

H2: *Gender Diversity has a relationship with Firm Performance.*

H3: *Board size has a relationship with Firm Performance.*

The following Table 1 summarizes the variables, description, and their measurement.

The regression model is used for examining the relationship between dependent and independent variables. Cross-sectional and time-series data is considered to identify the regression results. Torres et al. (2012) and Benson and Davidson (2009) used panel data regression in their research. Several previous empirical studies used a regression model to analyze the association between corporate governance and firm performance (Mashayekhi & Bazaz, 2008; Guo & Kumara, 2012). To measure the association between corporate governance and firm performance; the regression model for this study given is as follows

$$\text{Perf} = a + \beta_1 \text{AC}_{it} + \beta_2 \text{GD}_{it} + \beta_3 \text{BS}_{it} + \varepsilon$$

The dependent variable is firm performance which is measured by two variables (ROA and ROE) in this study: ROA is a ratio between Net Income divided by the Total Assets of the company, and ROE is the ratio of Net Income divided by Shareholder's equity.

4. Results

Table 2 shows variables in which the total number of observations, Mean, Standard Deviation, and their minimum and maximum values of all PSX listed Automotive Industries are shown.

In this result, Board Size has a standard deviation of (1.7687) which is the highest and shows that Board Size is highly unstable for automotive industries compared with other variables used in this study. And its inconsistency ranges from (7.00 to 14.00). Gender Diversity shows a

Table 2: Descriptive Statistics

Variables	*N*	Mean	Std. Dev	Minimum	Maximum
ROA	60	0.068	0.156	–0.305	0.53
GD	60	0.068	0.093	0	0.36
AC	60	4.11	0.783	0	6.00
BS	60	8.58	1.768	7.00	14.00

Table 1: Variable Description

Variables	Description	Measurement
Dependent Variable ROA	Return on Asset	(Net profit)/(Total assets) (Gabriel & Osazuwa, 2020; Aifuwa, 2020)
ROE	Return on Equity	(Net Income)/(Shareholder's equity) (Buallay et al., 2017; Mashayekhi & Bazaz, 2008)
Independent Variables GD	Gender Diversity	(Women on board)/(Total number of directors) (Khan & Subhan, 2019; Hassan et al., 2017; Zahid et al., 2019)
AC	Audit Committee	Number of audit meetings in a year (Aanu et al., 2014; Hamdan et al., 2013)
Control Variable BS	Board Size	Number of directors on a board (Khan et al., 2019; Rashid, 2020; Zahid et al., 2019)

standard deviation of (0.0937083), which is the lowest and it shows that it is stable in nature and ranges from (0 to 0.3600). Return on assets and Audit committee has moderate standard deviations of (0.1562082) and (0.7831199) respectively.

Tables 3 & 4 shows regression results for return on assets which demonstrate that the value of R^2 is (0.1343), which reveals that 13.43% of the variability of firm performance is influenced by the corporate governance variables. The value of SSE that is closer to 0 indicates that the model will be more helpful for prediction, and the value of SSE in this model is (1.2464), which is not closer to 0. The values of MSE (0.0223), DFE (56), and Roots MSE (0.1492) will also be used for prediction where the value is closer to 0, indicating that the model fits the data. Table 4 shows regression results for return on equity which demonstrates that the value of R^2 is (0.1114) tells that 11.14% of the variability of firm performance is influenced by the corporate governance variables. The value of SSE which is closer to 0 indicates that the model will be more helpful for the prediction and in this model the value of SSE is (29.1375) which is far from 0. So, the values of MSE (0.5203), DFE (56), and Roots MSE (0.7213) will be used for the prediction where the value is closer to 0, which indicates that the model fits the data.

After looking at Table 5, it is concluded that Gender Diversity (0.0943) is significant and has an indirect relationship with firm performance. Audit Committee (0.0163) is significant and is influencing the firm performance directly. The parameter Board Size is a control variable that has a negative *p*-value and has an indirect relationship with firm performance. The results overall explain an indirect relationship between corporate governance and firm performance. Table 5 presents the parameter estimates for the dependent variable ROE, from this analysis it is concluded that gender diversity (0.0244) has a significant relationship with the firm performance and is negatively correlated to it. Audit committee is positively correlated to firm performance. Board Size is negatively correlated and has an indirect relationship with firm performance. Mixed relationships were shown in this table.

Table 6 shows Pearson's correlation for all the variables used in this study. It examined the association between the corporate governance variables and the performance of the firm. Gender diversity with (–0.19055) and (–0.30939) are negatively correlated with firm performance measured by ROA and ROE. Gender diversity (0.0008) is significantly related to ROE. The audit committee (–0.03558) is negatively related to firm performance. The audit committee has a significant correlation (0.16256) with ROE.

5. Conclusion

This research evaluates the impact of corporate governance on the financial performance of the automotive industry. Furthermore, this study also examines the relationship between gender diversity and firm performance. The return on equity (ROE) and return on assets (ROA) is used as a proxy for firm performance. Conventionally,

Table 3: Model Description

Estimation Method	Pooled
Number of Cross Sections	15
Time Series Length	4

Table 4: Fit Statistics

Dependent Variable: ROA				Dependent Variable: ROE			
SSE	1.2464	DFE	56	SSE	29.1375	DFE	56
MSE	0.0223	Root MSE	0.1492	MSE	0.5203	Root MSE	0.7213
R-Square	0.1343			*R*-Square	0.1114		

Table 5: Parameter Estimates

Dependent Variable: ROA			Dependent Variable: ROE		
Variables	***t*-value**	**Pr > |*t*|**	***t*-value**	**Pr > |*t*|**	**Label**
Intercept	–0.55	0.5851	–0.15	0.8800	Intercept
GD	–1.70	0.0943	–2.31	*0.0244	GENDER DIVERSITY
AC	2.48	*0.0163	0.98	0.3318	AUDIT COMMITTEE
BS	–1.02	0.3115	–0.07	0.9468	BOARD SIZE

*At 5% significance level.

Table 6: Pearson Correlation

Variables	ROA	ROE	GD	AC	BS
ROA	1.00000				
ROE	0.64666	1.00000			
	<0.0001				
GD	–0.19055	–0.30939	1.00000		
	0.1447	0.0162			
AC	0.16256	–0.03558	0.47101	1.00000	
	0.2146	0.7872	0.0001		
BS	–0.15408	–0.15823	0.56822	0.43949	1.00000
	0.2398	0.2273	<0.0001	0.0004	

the frequency of audit committee and firm performance are assumed to be symmetrical in the relationship but the empirical results show that audit committee might not have a significant effect on firm performance which leads to agency problems. In addition, it was found that gender diversity has a significant effect on firm performance which is in line with Hussain and Hadi (2019a). Gender diversity has a negative relationship due to lack of interest in decision making or female directors does not deliver a significant impact on firm performance (Zahid et al., 2019). The current study is based on Pakistan female directors who haven't possessed enough qualifications, knowledge, and competency to cater to business decisions. So the business results vary according to geographical location.

Furthermore, board size shows an insignificant negative relationship with financial performance, indicating that just numbers are not enough to increase the level of governance and business success (Khan et al., 2019). The agency theory suggests that board size achieved a strategic level if the firm evaluates top management deeds (Allegrini & Greco, 2011). This means that financial performance which was not enough high due to boards' devious decision making can be increased by the selection of competent and global top management. This research has a contribution in that it sort out the fact that corporate governance is a frame that has an impact on business earnings by evaluating the connection between the board of directors including diversity and financial performance (Kovac & Spruk, 2021). The findings of this research, which presented the impact of CG on firm performance act as the device of productive decision making for top management, are hoping to provide fruitful implications to supervisors, investors in the Automotive industry. The empirical result shows that innovations in the mechanism of governance can protect the ownership of investors.

The limitations of this research include not only a restricted number of automotive companies listed on the Pakistan stock exchange (PSX) and also omitted variables that influence firm financial performance and governance imperative. In addition, literature on the association of corporate governance and how profitability influences the financial market and studies on other sectors like cement, fertilizer, oil & exploration are expected in the prospects.

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