

Sajjad Nawaz Khan et al.

## Article

The mediating role of innovation between corporate governance and organizational performance: Moderating role of innovative culture in Pakistan textile sector

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# The mediating role of innovation between corporate governance and organizational performance: Moderating role of innovative culture in Pakistan textile sector

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**Abstract:** The objective behind this research is to determine the influence of board size (BSZ), board independence (BID), board diversity (BDV), board meetings (BM), and a number of board committees (NBCM) on organizational performance with the use of innovation as mediating variable in Pakistan textile companies. Innovative culture uses as a moderating variable between innovation and organizational performance. Data were collected from top management and 550 questionnaires distributed among respondents.

Only 407 questionnaires returned back and 384 questionnaires use for final analysis and remaining 23 questionnaires excluded due to missing values. PLS-SEM used for analysis purpose and data collected by using simple random sampling technique. Findings reveal that BSZ and BDV have a positive influence on organizational performance. Despite this, BID, NBCM, and BM have no influence on organizational performance. BSZ, BID, BDV, BM, and NBCM have a significant and positive influence on innovation. Innovation also significantly mediates between

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### PUBLIC INTEREST STATEMENT

Corporate governance is an important area for organizations and most of the prior studies focus on secondary data and less attention has been paid on the questionnaire-based study, this study fulfills this gap. This study also uses innovation as a mediating variable that explains the relationship between corporate governance dimensions well with organizational performance because out of five direct relationships with organizational performance three hypotheses show insignificant influence. By using innovation as mediating variable all hypotheses show significant influence with the dependent variable. 384 questionnaires use for analysis and data were collected from the top management of textile companies in Pakistan. This study contributes theoretically and practically that will provide benefits for academicians and textiles companies.

independent variables and organizational performance. Innovation has a positive influence on organizational performance. Moreover, innovative culture significantly moderates between innovation and organizational performance. Innovation and innovative culture is an important construct in determining organizational performance. It is beneficial for textile organizations to use these two constructs in measuring organizational performance through corporate governance.

**Subjects:** Economics; Finance; Business, Management and Accounting

**Keywords:** Corporate governance; innovation; innovative culture; organizational performance

### 1. Introduction

This study determines the mediating role of innovation between corporate governance and organizational performance. In addition, this study also investigates the moderating role of innovative culture between innovation and organizational performance. Organizational performance is considered the most significant factor for the organizations in measuring their objectives and for gaining success in a competitive market (Rehman, Mohamed, & Ayoup, 2018a, 2019). Moreover, it is an important indicator for investors, shareholders, stakeholders, and for economic development (Khan & Ali, 2017). Organizational performance measured in two dimensions such as financial performance and non-financial performance (Rehman, Mohamed, & Ayoup, 2018b; Rehman et al., 2019). It depends upon the nature of organizational objectives that which indicator used to measure organizational performance. The literature demonstrates that there are some studies that use both financial and non-financial indicators to compute their performance (Hofmann, 2001; Kaplan & Norton, 1996). On the other hand, few of the researchers use only financial performance indicator to measure organizational performance (Henri, 2006; Kariyawasam, 2014) and ignores non-financial performance. However, one of the latest study authors recommends that non-financial performance is essential for organizations if they want to enhance their performance in long-range (Rehman et al., 2018a). In this study, we are focusing on both indicators to compute performance.

Corporate governance (CG) system plays a significant role in the betterment of organization wealth. CG refers to a system by which organizations controlled as well as directed. CG takes much attention in the eyes of researchers and organizations after a big scandal in WorldCom and Enron (Ali, 2018). In the developing countries, proper governance structure serves as a key objective in the organizational success that decreases the possibility of monetary crises and the management conflicts (Gompers, Ishii, & Metrick, 2003). One of the studies elucidated that protect organizations as well as their stakeholders, the authoritarian agencies attempted to discourage the immoral practices by implementing rules and regulations that forbid these immoral practices; and most importantly practice or rule is CG (Rankin, Ferlauto, McGowan, & Stanton, 2012). CG structure identifies the sharing of responsibilities and rights within various participants in the organization like an external auditor, the board of directors (BOD's), management, and shareholders (Mansur & Tangl, 2018). In relation to the organizational shareholder's, CG identifies the shareholder's rights and give confidence the cooperation between organization and shareholders. In relation to management and BOD's the CG provides the structure through which organizations goals set. In relations to external auditors, organizations that have good CG structure facilitate the work of an auditor, if auditor works with honesty and diligence.

Organizations going to face failure due to weak CG system and there is a need to develop CG structure in the organizations for their betterment (Arora & Sharma, 2016). According to Berkman, Zou, and Geng (2009), good CG structure plays a significant role to reduce accounting

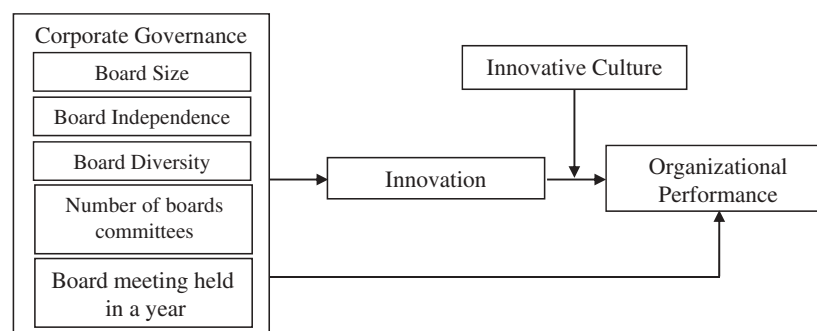
as compared to weak CG structure. Another study revealed that with weak CG structure organizations faces lots of agency problems and in these organizations managers get more personal advantages (Core, Holthausen, & Larcker, 1999). Agency theory elucidated that BOD's are much careful with their personal property or money as compared to other people funds (Letza, Sun, & Kirkbride, 2004). Moreover, this theory further elaborates that the basic objective of CG is to give assurance to organizational shareholders that managers play their role in obtaining results that give benefits to them (Shleifer & Vishny, 1997). There is another theory related to this construct like Stewardship theory that assumes a significant association between the achievement of corporation and satisfaction of shareholders. Steward looks after as well as enhance the wealth of shareholders by the organizational performance because by doing this activity utility functions of steward's enhanced (Arora & Sharma, 2016). Significantly, the stakeholder theory recommends that an organization search for in providing a balance between its stakeholders (Abrams, 1951). All the theories regarding CG recommends for an effective system of governance that involves the board appointment that consists of the executive as well as non-executive directors.

Literature shows that within the last twenty years researchers paid much attention in determining the association between CG and organizational performance. As much work done on this area in developed economies and less attention has been paid in developing economies (Barnhart, Marr, & Rosenstein, 1994; Gompers et al., 2003; Judge, Naoumova, & Koutzevol, 2003; Pass, 2004). Above-mentioned studies determine the influence of CG on organizational performance, findings elucidated that relationship exists between these constructs. In developed countries, the results are different as compared to developing countries even though with the same theory and framework (Arora & Sharma, 2016). The relationship between CG and organizational performance is a crucial area and these constructs not conclusive and there is needs to further study (Mardnly, Mouselli, & Abdulraouf, 2018). However, CG is more significant factors for less developed markets as compared to developed markets.

This study focus to examine the influence of CG dimensions such as board size (BSZ), board independence (BID), board diversity (BDV), number of board committees (NBCM), and board meetings held in a year (BM) on organizational performance with the mediation role of innovation in the context of Pakistan. Innovative culture uses as a moderating variable between innovation and organizational performance. Figure 1 demonstre the theoretical framework of the current study. Findings of this study help policymakers and they can develop the different governance policies particularly BSZ, BID, BDV, NBCM, and BM. Moreover, policymakers focus on innovative culture and innovation in determining organizational performance. This study majorly contributes that introducing innovation as a mediating effect and innovative culture as a moderating effect that largely ignored in previous studies of corporate governance and organizational performance.

The current research consists of seven sections that follow; Introduction, background, theory, empirical literature review and hypotheses development, research methodology, empirical results and discussion, and conclusion and future directions.

**Figure 1. Theoretical Framework.**



## 2. Background

Textile sector of Pakistan is the largest manufacturing sector of Pakistan and considered the backbone of the economy (Ahmad, Hussain, Ahmad, & Islam, 2017). Pakistan is the leading exporter and manufacturer of textile products and earns Rs. 1446.86 billion annually from the sale of textile products (Rehman et al., 2019). Moreover, this sector contributes 8.5% in the gross domestic product and more than 63% of Pakistan exports comes from the textile sector (Rehman et al., 2019). Ataullah, Sajid, and Khan (2014) reveal that the textile sector of Pakistan has below 1% of world market share and researchers recognize that this sector will grow in the future. In Pakistan 954 organizations registered under All Pakistan Textile Mills Association and All Pakistan Bedsheets and Upholstery Manufacturers Association (APBUMA).

Corporate governance and organizational performance is still a debatable area for the believers of agency theory and stewardship theory. Corporate governance was commenced in Pakistan by Security and Exchange Commission of Pakistan (SECP) in the 2002 and researchers conclude that very limited literature contribution in the corporate governance mechanism (Javid & Iqbal, 2008). Corporate governance in the context of Pakistan has recently started scratching the surface (Ameer, 2013). On the other hand, most of the undocumented economy not in favors of promoting accountability and transparency within organizations (Ameer, 2013). Hence, there is still an enormous gap exist in the area to work in the context of Pakistan.

Innovation and innovative culture two different things cover this study. Innovation refers to the firm's tendency and receptivity to implement ideas that diverge from the common course of business. While, innovative culture means creative, challenging work environment; result oriented and is depicted as being industrial ambitious, risk-taking, and stimulating (Wallach, 1983). In Pakistan, less attention has been paid on innovation and innovative culture in determining the organizational performance (Hussain, Hanif, & Hamid, 2018). This study covers this gap to focus on textile organizations in Pakistan to determine performance.

## 3. Theory

Agency theory (Jensen & Meckling, 1976) gives an argument that in most cases firms operate their business under conditions with the lack of uncertainty and information. Furthermore, it states that the separation of owners from control communicates that organizations are being controlled by some professionals. Kiel and Nicholson (2003) reveal that professional managers closely work with their personal welfare rather than shareholders interests. Agency theory, presented by (Fama & Jensen, 1983) and (Jensen & Meckling, 1976), is the core of many explanations for the relationship between corporate governance and organizational performance. Resource dependency theory (RDT) recommends that firms depend on their outside actors in their surroundings for resources essential for organizational growth as well as their survival in the market (Pfeffer, 1972). Moreover, the dependency level is restrictive on the level of the resources required and also the number of sources from where organizations get resources (Thompson, 1967).

The stewardship theory is also called as stakeholders theory and recommends that management are reliable and not involved in the misappropriate organizations decision making (Shahwan, 2015). The stewardship theory assumes a significant relationship between organizations success and shareholder's satisfaction. Arora and Sharma (2016) argue that steward protects and enhances shareholders wealth by increasing organizational performance, as by performing this stewards utility functions are maximized. Some of the prior studies investigate the relationship between corporate governance and firm performance by using stewardship theory and concludes that corporate governance plays a significant role in determining firm performance

The stewardship theory is majorly related with the managerial behaviors as well as believes that primary inspiration factor for the management is getting satisfied after finishing the job within time and in the effective way (Khan & Abdul Subhan, 2019). Hence, the behavior of managers is pro-organizational and in line of mission and objectives of the specific organization (Madison, Holt, Kellermanns, & Ranft, 2016). The focus of stewardship theory around intrinsic rewards and motivations

(Davis, Schoorman, & Donaldson, 1997). Few of the researchers demonstrate that intrinsic motivation is one of the significant sources of innovation and creativity (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Tierney, Farmer, & Graen, 1999). The literature on stewardship theory reveals that innovation plays a vital role in determining organizational performance (Craig & Dibrell, 2006; Goel & de Jong).

#### 4. Literature review and hypotheses development

##### 4.1. Board size (BSZ)

According to O'connell and Cramer (2010) board size defines the strength of both executive and non-executive directors. Agency theory demonstrates that smaller boards within organizations have more managerial controls as compared to larger boards (Jensen & Meckling, 1976). Furthermore, Jensen (1993) reveals that smaller board can help organizations to enhance their performance, and also demonstrates that board size more than 7 members creates some issues such as moral hazard problems, inefficient operations, greater control by CEO, and lack of commitment. Researchers elucidated that the reasonable size of the board has much effective to control activities of organizations as compared to a larger board that reduces the performance of an organization (García-Ramos & García-Olalla, 2011).

One of the authors concludes that bigger board size decreases organizational performance because of its communications between them that results in late decisions (Guest, 2009). Meanwhile, larger board size increases the costs in terms of compensations and not provides effective monitoring that based on the organizational value in the market (Haniffa & Hudaib, 2006). Despite this, a larger board size likely to perform the monitoring role within organizations ineffective way because of a number of directors more involved in the decision making and process (Kiel & Nicholson, 2003; Ozcan & Ince, 2016). Board of directors operates to form different committees based on the board member expertise (Kiel & Blennerhasett, 1984). Board size plays a significant role in enhancing innovation (Galia & Zenou, 2018). Hence, a large number of boards have a variety of expertise that would help the board to perform their work well and enhance innovation and organizational performance. Hypotheses are proposed on the bases of the above studies.

H<sub>1</sub>: BSZ has a positive influence on organizational performance

H<sub>2</sub>: BSZ has a positive influence on innovation

H<sub>3</sub>: Innovation significantly mediates the relationship between BSZ and organizational performance

##### 4.2. Board independence (BID)

Literature shows that board independence explained by two extensive theories such as stewardship theory and agency theory that elucidated that BID has an impact on organizational performance. Agency theory tells about objective conflicts between the principal (board) and agent (CEO) because of organizations agents' works for the betterment of their personal benefits rather than work for principal betterment. According to Huse (1994), there should be some independent members of a board that must monitor the performance of the CEO. As agency theory recommends that a large number of independent directors as compared to dependent members in the board enhance the organizational performance. The literature demonstrates that independent directors are beneficial for organizations and also cost associated by having a higher number of independent directors.

A meta-analysis on the topic of BID and organizational performance reveals that there are inconsistent results between these constructs (Dalton, Daily, Ellstrand, & Johnson, 1998). Some studies show that board independence increase organizational performance (Baysinger & Butler, 1985; Daily & Dalton, 1993). Despite this, there are some studies reveal that board independence decreases organizational performance (Bhagat & Bolton, 2008; Klein, Shapiro, & Young, 2005; Muth & Donaldson, 1998). While, there are some studies that elucidated that BID has no impact on organizational performance (Hermalin & Weisbach, 1991; Villalonga & Amit, 2006). Board

independence also plays a significant role in innovation (Balsmeier, Fleming, & Manso, 2017). Hypotheses are proposed on the bases of the above studies.

H<sub>4</sub>: BID has a positive influence on organizational performance

H<sub>5</sub>: BID has a positive influence on innovation

H<sub>6</sub>: Innovation significantly mediates between the BID and organizational performance

#### **4.3. Board diversity (BDV)**

RDT and human capital theory (HCT) explained the association between BDV and organizational performance. The main character of BOD's is to monitor and control organizations managers as well as provide resources. RDT recommends that organizations depend upon their surroundings (Pfeffer, 1972). Organizations have to protect their resources from the surroundings and this reduces the uncertainty as well as improves organizational performance (Taljaard, Ward, & Muller, 2015). Moreover, BDV formed by assorted board capital and supports the capability to protect resources from the surroundings that minimize uncertainty and enhance organizational performance (Hillman & Dalziel, 2003; Pfeffer, 1972). Assorted BOD's is much superior to secure the resources as compared to less diverse BOD's because the board has more access to both networks and information regarding organizational activities (Bryant & Davis, 2012; Taljaard et al., 2015). HCT tells that the skills and knowledge of BOD's impact on the effectiveness of the implementation of resource provision and monitoring roles (Hillman & Dalziel, 2003). Skills and knowledge of BOD's also known as the human capital of board members.

According to Fagan, Menéndez, and Ansón (2012), decision making should be improved because of new and unique knowledge. The compatibility of HCT and RDT theory is on the assumptions that the diversity of board enhances organizational performance. HCT and RDT argue that inimitable human capital offers the BDV. Literature shows that board diversity increases organizational performance (Carter, Simkins, & Simpson, 2003; Kim, Pantzalis, & Park, 2013). Despite this, there are some studies that reveal that board diversity decreases organizational performance (Arena et al., 2015; Smith et al., 1994). As recommended by Miller and Del Carmen Triana (2009), board diversity has a significant and positive influence on innovation. Hypotheses are proposed on the bases of the above studies.

H<sub>7</sub>: BDV has a positive influence on organizational performance

H<sub>8</sub>: BDV has a positive influence on innovation

H<sub>9</sub>: Innovation significantly mediates between BDV and organizational performance

#### **4.4. Board meetings held in a year (BM)**

Vafeas (1999), was the first person that argues that a number of board meetings play an important role in enhancing organizational performance. Similarly, one of the authors recommends that board meetings frequency will possibly improve the performance of an organization since board meetings consider a measure of supervision efficacy and after that influence on overall organization outcomes (Lipton & Lorsch, 1992). The literature demonstrates that board activity has a significant influence on organizational performance (Brick & Chidambaran, 2010; Kaur & Vu, 2017). One of the recent studies reveals that board meetings play a significant role in examining innovation (Asensio López, Cabeza García, & González Álvarez, 2018). Hypotheses are proposed on the bases of the above studies.

H<sub>10</sub>: BM has a positive influence on organizational performance

H<sub>11</sub>: BM has a positive influence on innovation

H<sub>12</sub>: Innovation significantly mediates between the number of BM and organizational performance

#### **4.5. Number of boards committees (NBCM)**

BOD's are usually regarded as the essential control mechanism that observes the decision-making activities (Lam & Lee, 2012). Moreover, board monitoring character can be enhanced to establish a board committee that enables the BOD's responsibilities to be "rigorously discharged" (Higgs, 2003). Additionally, the role of this board committee should be more efficient when this committee consists of non-executive directors and most of them should be independent (Lam & Lee, 2012). Board committees enhance the organizational performance but there are less empirical studies available on this relationship (McMullen, 1996). There are three types of board committees like nomination, audit, and remuneration committee (Anand, 2007). Literature shows that board committees have an influence on organizational performance but most of the studies conducted in developed economies and less work in developing economies (Puni, 2015). There are some studies that recommend that board committees linked with organizational performance (Carter, D'Souza, Simkins, & Simpson, 2010). Independent board committees play a significant character in innovation (Balsmeier et al., 2017). Hypotheses are proposed on the bases of the above studies.

H<sub>13</sub>: NBCM has a positive influence on organizational performance

H<sub>14</sub>: NBCM has a positive influence on innovation

H<sub>15</sub>: Innovation significantly mediates between NBCM and organizational performance

#### **4.6. Innovation, innovative culture, and organizational performance**

According to Menguc and Auh (2006), innovation (INV) means the organization tendency as well as receptivity to implementing ideas that diverge from the common course of business. Innovation entails compliance to relinquish previous habits and try untried ideas (Tsai & Yang, 2014). INV plays an important character in determining organizational performance (Uzkurt, Kumar, Semih Kimzan, & Eminoğlu, 2013; Zaefarian, Forkmann, Mitreğa, & Henneberg, 2017). Prior studies reveal that INV has a major impact on organizational performance (Naala, Nordin, & Omar, 2017; Turulja & Bajgoric, 2018). Despite this, the literature reveals that INV has insignificant influence on organizational performance (Darroch, 2005). There are inconclusive results between INV and organizational performance and there is a need for another variable that moderates the relationship between these constructs. Innovative culture refers to a creative, challenging work environment; result oriented and is depicted as being industrial ambitious, risk-taking, and stimulating (Wallach, 1983). This study used innovative culture as a moderating variable that covers that organization culture is challenging, creative, enterprising, stimulating, driving, risk-taking, result oriented, and pressurize. Innovative culture plays an important role in examining organizational performance (Quy, 2017). Hypotheses are proposed on the bases of the above studies.

H<sub>16</sub>: INV has a positive influence on organizational performance

H<sub>17</sub>: Innovative culture moderate between INV and organizational performance

### **5. Research methodology**

The research methodology is a significant part of research to determine the objectives of that research (Rehman et al., 2019). In achieving this, the appropriate analysis technique used to see the problem and objective of that specific research (Rehman et al., 2019). Hence, in this research, to see the nature, problem, and research objectives we employed a quantitative approach, the cross-sectional design used in collecting data from respondents by using questionnaire technique. This study is deductive in nature as a theoretical framework developed on the basis of existing theory.

### **5.1. Data collection procedure**

In the current study, data were collected by using questionnaire technique and instruments were adapted from previous studies on BSZ, BID, BDV, NBCM, BM, INV, innovative culture, and organizational performance. Questionnaires were distributed to top management in textile companies under all Pakistan textile mills association (APTMA) and All Pakistan Bedsheets and Upholstery Manufacturers Association (APBUMA). Questionnaires send through postal as well as personally administered questionnaires.

### **5.2. Questionnaire development**

Model of this research consists of eight variables. Each variable measured to use various items. Questionnaire of current research consists of two major portions. The first portion is regarding demographics characteristics consist of five questions. The second portion is regarding BSZ, BID, BDV, NBCM, BM, INV, innovative culture, and organizational performance consist of fifty-five items. Extensively, each item measured by using five-Likert scale (5 for strongly agree, and 1 for strongly disagree). This study used five-Likert scales because of some reasons such as it reduces the frustration or irritation level of respondents that ultimately enhances the quality of response and also enhance the response rate (Sachdev & Verma, 2004). Corporate governance five elements like board size (5 items), board independence (3 items), board diversity (6 items), number of board committees (5 items), board meetings held in a year (4 items) adapted from (Honghui, 2017). Innovation consists of 11 items and adapted from (Darroch & Jardine, 2002). Innovative culture consists of 8 items and adapted from (Wallach, 1983). The organizational performance consists of 11 items and adapted from (Henri, 2006; Teeratansirikool, Siengthai, Badir, & Charoenngam, 2013). After adapted the instruments, send to three field experts and three Ph.D. They confirm that questionnaire fulfills the face validity. Questionnaire attached in Appendix end of this paper.

### **5.3. Population, sampling, and sample size**

Current research is based on 954 textile companies under APTMA and APBUMA in Pakistan and questionnaires distributed among 550 companies. Simple random sampling use to collect data from respondents as the technique is the most appropriate sampling technique in known population. The reason to use simple random sampling is that we know the whole population of textile companies that registered under APTMA and APBUMA in Pakistan. Some of the prior studies used this technique and get better results (Bhatt & Bhatt, 2017; Bhatti, 2018; Mudashiru, Bakare, Ishmael, & Babatunbe, 2014; Rehman et al., 2019). According to Comrey and Lee (1992) there are various ranges of the sample size regarding the strength like sample size lower than 50 is considered weaker sample size, more than 50 and equals to 100 is considered weak sample, between 101 to 200 respondents is considered adequate sample size, sample size between 201 to 300 is considered a good sample size, sample size 500 is considered a very good sample size, and the sample size 1000 is considered excellent. However, this study used 550 sample sizes that are considered very good sample size. Questionnaires were distributed to top management in textile companies under APTMA and APBUMA in Pakistan. In this study, total 550 questionnaires distributed among top management, out of 550 questionnaires, only 407 questionnaires returned back, 23 questionnaires have missing values and these questionnaires not included in the analysis. Hence, 384 questionnaires were used for analysis purpose and it meets the sample selection criteria mentioned above. The response rate of this study is 69.81% that is less than a study that conducted in textile industries in Pakistan under APTMA only and that study has response rate 79.50% (Rehman et al., 2019).

### **5.4. Respondents profile**

Respondents for this study were the top management of textile companies. The total number of questionnaires distributed among respondents was 550 and 384 used for analysis purpose that is 69.81% response rate. Table 1 represents the organization profile of the respondents. Table 1 show that 67.44% of the respondents have a master's degree. Majority of the respondents are from the accounting and finance field that equals to 66.92% of total respondents. Regarding the experience of respondents, 76.03% of the respondents have experience at most 10 years. Regarding a number of employees, 48.70% of the organizations have employees within 401–650. Average annual revenue of 46.35% organizations is within 151 to 250 million Pakistani rupees.

**Table 1. Respondents profile**

Construct	Category	Number of cases	Percentage
Qualification	Diploma/Intermediate Degree	05	1.302
	Bachelor Degree	65	16.93
	Masters Degree	259	67.44
	M.Phil/P.hD	44	11.46
	Others	11	2.86
Field of study	Business	78	20.31
	Accounting	134	34.89
	Finance	123	32.03
	Administration	46	11.97
	Others	12	3.12
Experience	Less than 5 years	119	30.98
	5 to 10 years	173	45.05
	11 to 15 years	70	18.22
	15 to 20 years	13	3.38
	More than 20 years	09	2.34
Number of employees	150 to 400	88	22.91
	401 to 650	187	48.70
	651 to 950	78	20.31
	More than 950	31	8.07
Average annual revenue	At least 150 (Million PKR)	98	25.52
	151 to 250 (Million PKR)	178	46.35
	251 to 500 (Million PKR)	75	19.53
	More than 500 (Million PKR)	33	8.59

### 5.5. Data analysis

In the current study, we used SmartPLS 3.2.8 to determine the study model because this is a fast-growing 2<sup>nd</sup> generation technique as suggested (Hair, Hult, Ringle, & Sarstedt, 2014). There are various reasons to choose partial least squares structural equation modeling (PLS-SEM) as compared to covariance-based structural equation modelings (CB-SEM) such as no need for normality assumption and Multicollinearity. Moreover, PLS-SEM is most appropriate analysis tool for simple as well as complex models. In the current study, our model is complex because we use both mediation and moderation. According to Hair, Hult, Ringle, and Sarstedt (2017), finding considerable values of path coefficient as well as factor loadings, a bootstrapping of 5000 subsamples required. Two models such as measurement and structural model calculated in PLS-SEM.

### 5.6. Measurement model

To calculate measurement there is a need to compute convergent and Discriminant validity.

### 5.7. Convergent validity

Zhou (2013), convergent validity refers to a situation where items of specific variable reflect effectively to their linked indicator. According to Hair, Hult, Ringle, and Sarstedt (2013), convergent validity requires three things like factor loadings, composite reliability (CR), and the last one is average variance extracted (AVE). Hair et al. (2013), suggests that AVE and factor loadings value must be higher than 0.50 and CR value higher than 0.70. All the items that have a factor loading less than 0.50 must be deleted to an obtained better outcome of CR and AVE as suggested (Hayduk & Littvay, 2012). Nunnally (1978), Cronbach's alpha value should be more than 0.60.

Figure 2 demonstrates the measurement model. Table 2 demonstrates that this study fulfill convergent validity criterion.

### 5.8. Discriminant validity

Discriminant validity means the level to which all items make a distinction amongst constructs (Rehman et al., 2019). Discriminant validity computed by using two methods such as comparing AVE with squared correlation or comparing AVE square root with correlation. In the current research, the second method used to compute Discriminant validity as shown in Table 3. Diagonal upper values should be greater than other variables values in the same columns and rows as suggested (Fornell & Larcker, 1981).

#### 5.8.1. Structural model and hypotheses testing

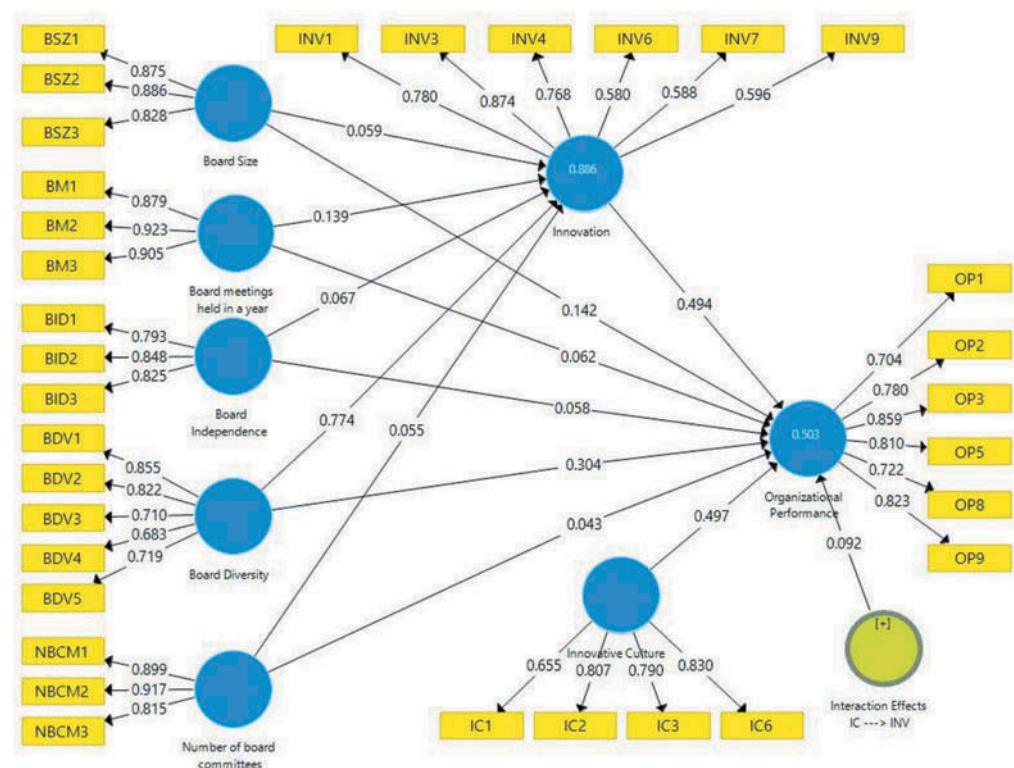
In the above part, we computed Discriminant validity and convergent validity to fulfill the requirement of measurement or outer model. In this section, examines the study proposed hypotheses by running algorithms technique and bootstrapping technique in SmartPLS 3.2.8. According to Hair et al. (2017), finding considerable values of path coefficient as well as factor loadings, a bootstrapping of 5000 subsamples required. In the current research, we follow 5000 subsamples criteria. Figure 3 and Table 4 demonstrates that we have 17 hypotheses consist of 11 direct hypothesis, 5 mediating hypotheses, and 1 moderating hypothesis.

BSZ = Board size; BM = Board meetings held in a year; BID = Board independence; BDV = Board diversity; NBCM = Number of board committees; INV = Innovation; IC = Innovative culture; OP = Organizational performance

### 5.9. The predictive relevant of study model

In calculating predictive relevance of model there is a need for two things such as R-square ( $R^2$ ) and cross-validated redundancy ( $Q^2$ ).  $R^2$  refers to the variance of the dependent variable that all independent variables explained. Table 5 demonstrates that 88.6% innovation explained by BSZ, BID, BDV, NBCM, and

Figure 2. Measurement model.



**Table 2. Factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR)**

Constructs	Items	Factor Loading	AVE	CR	Cronbach's Alpha	R <sup>2</sup>
Board Size	BSZ1	0.875	0.745	0.898	0.829	
	BSZ2	0.886				
	BSZ3	0.828				
Board Independence	BID1	0.793	0.676	0.862	0.761	
	BID2	0.848				
	BID3	0.825				
Board Diversity	BDV1	0.855	0.579	0.872	0.819	
	BDV2	0.822				
	BDV3	0.710				
	BDV4	0.683				
	BDV5	0.719				
Number of boards committees	NBCM1	0.899	0.771	0.910	0.853	
	NBCM2	0.917				
	NBCM3	0.815				
Board meeting held in a year	BM1	0.879	0.814	0.929	0.886	
	BM2	0.923				
	BM3	0.905				
Innovation	INV1	0.780	0.500	0.854	0.795	0.886
	INV2	0.874				
	INV3	0.768				
	INV6	0.580				
	INV7	0.588				
	INV9	0.596				

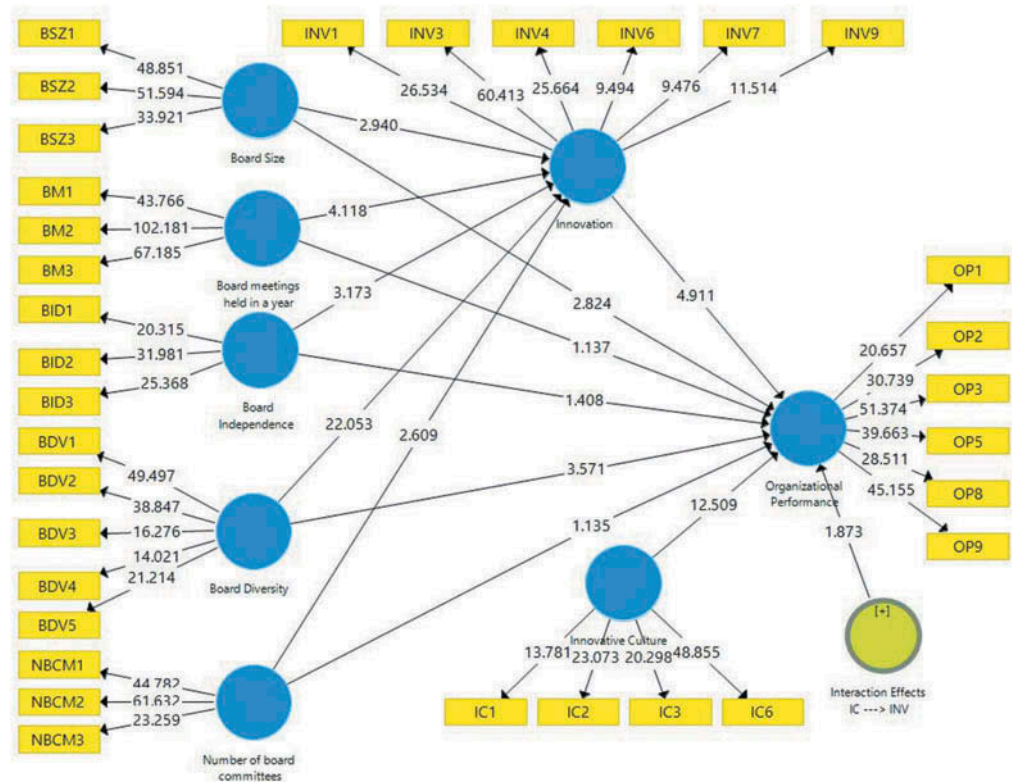
(Continued)

Table 2. (Continued)						
Constructs	Items	Factor Loading	AVE	CR	Cronbach's Alpha	R <sup>2</sup>
Innovative culture	IC1	0.655	0.598	0.855	0.793	
	IC2	0.807				
	IC3	0.790				
	IC6	0.830				
Organizational performance	OP1	0.704	0.616	0.905	0.875	0.503
	OP2	0.780				
	OP3	0.859				
	OP5	0.810				
	OP8	0.722				
	OP9	0.823				

**Table 3. Discriminant validity**

<b>Variables</b>	<b>BSZ</b>	<b>BID</b>	<b>BDV</b>	<b>NBCM</b>	<b>BM</b>	<b>INV</b>	<b>IC</b>	<b>OP</b>
Board size	<b>0.863</b>							
Board independence	0.243	<b>0.822</b>						
Board diversity	0.475	0.229	<b>0.761</b>					
Number of board committees	0.263	0.180	0.240	<b>0.878</b>				
Board meeting held in a year	0.532	0.231	0.692	0.174	<b>0.902</b>			
Innovation	0.531	0.300	0.342	0.293	0.731	<b>0.707</b>		
Innovative culture	0.307	0.042	0.344	0.134	0.293	0.324	<b>0.774</b>	
Organizational performance	0.435	0.206	0.420	0.135	0.423	0.477	0.603	<b>0.785</b>

**Figure 3. Structural model.**



BM. While, 50.3% organizational performance explained due to BSZ, BID, BDV, NBCM, and BM, innovation, and innovative culture. According to Cohen (1988),  $R^2$  considers weak (0.02 to 0.13), considers moderate (0.13 to 0.26), and considers substantial in case  $R^2$  higher than 0.26. In the current research, INV and OP consider substantial.  $Q^2$  computed to know the quality of the model in SmartPLS to use blindfolding technique. The value of  $Q^2$  must be greater than zero as recommended (Chin, 1998). However, the current research fulfills this criterion as  $Q^2$  of INV 0.412 and OP 0.273 as demonstrates in Table 5.

## 6. Empirical results and discussion

The objective of the current study is to determine the mediating effect of INV between corporate governance (BSZ, BID, BDV, BM, and NBCM) and OP in Pakistan textile industry. Furthermore, determines the moderating effect of IC between INV and OP. Table 4 shows BSZ has a positive influence on OP ( $\beta = 0.142$ ,  $t = 2.824$ ,  $p < 0.05$ ) and accepted  $H_1$ . The findings are consistent with the findings of (Ozcan & Ince, 2016). BSZ has a positive influence on INV ( $\beta = 0.059$ ,  $t = 2.940$ ,  $p < 0.05$ ) and supported  $H_2$ . The findings are similar to a prior study (Galia & Zenou, 2018). Furthermore, INV significantly and positively mediates the relationship between BSZ and OP ( $\beta = 0.029$ ,  $t = 2.261$ ,  $p < 0.05$ ) and accepted  $H_3$ . The results are in line with resource dependency theory that large BSZ, directly and indirectly, enhances OP (Pfeffer, 1972).

BID has no influence on OP ( $\beta = 0.058$ ,  $t = 1.408$ ,  $p > 0.05$ ) and  $H_4$  not supported. BID has no influence on OP and consistent with (Villalonga & Amit, 2006). BID has a positive influence on INV ( $\beta = 0.067$ ,  $t = 3.173$ ,  $p < 0.05$ ) and accept  $H_5$ . BID has a significant and positive influence on INV and findings are similar with (Balsmeier et al., 2017). INV significantly and positively mediates the relationship between the BID and OP ( $\beta = 0.033$ ,  $t = 2.600$ ,  $p < 0.05$ ) and  $H_6$  accepted. BID has no direct influence on OP but INV significantly explains the relationship between BID and OP and agency theory supports. BDV has a positive influence on OP ( $\beta = 0.304$ ,  $t = 3.5714$ ,  $p < 0.05$ ) and supported  $H_7$ . The outcomes are consistent with (Kim et al., 2013). The findings are in line with

**Table 4. Direct relationships**

Hypotheses	Paths	Original Sample	Sample Mean	Std. Dev.	T-values	P-values	Results
H <sub>1</sub>	BSZ—>OP	0.142	0.138	0.050	2.824	0.002	Accepted
H <sub>2</sub>	BSZ—> INV	0.059	0.059	0.020	2.940	0.002	Accepted
H <sub>3</sub>	BSZ->INV->OP	0.029	0.030	0.013	2.261	0.012	Accepted
H <sub>4</sub>	BID—> OP	0.058	0.054	0.041	1.408	0.088	Not Accept
H <sub>5</sub>	BID—> INV	0.067	0.068	0.021	3.173	0.001	Accepted
H <sub>6</sub>	BID->INV->OP	0.033	0.034	0.013	2.600	0.005	Accepted
H <sub>7</sub>	BDV—> OP	0.304	0.305	0.085	3.571	0.000	Accepted
H <sub>8</sub>	BDV—> INV	0.774	0.773	0.035	22.05	0.000	Accepted
H <sub>9</sub>	BDV->INV->OP	0.383	0.385	0.079	4.822	0.000	Accepted
H <sub>10</sub>	BM—> OP	0.062	0.056	0.055	1.137	0.128	Not Accept
H <sub>11</sub>	BM—> INV	0.139	0.139	0.034	4.118	0.000	Accepted
H <sub>12</sub>	BM->INV->OP	0.069	0.069	0.022	3.092	0.001	Accepted
H <sub>13</sub>	NBCM—> OP	0.043	0.044	0.038	1.135	0.128	Not Accept
H <sub>14</sub>	NBCM—> INV	0.055	0.054	0.021	2.609	0.005	Accepted
H <sub>15</sub>	NBCM->INV->OP	0.027	0.027	0.011	2.380	0.009	Accepted
H <sub>16</sub>	INV->OP	0.494	0.492	0.098	5.022	0.000	Accepted
H <sub>17</sub>	Interaction effect IC->INV->OP	0.092	0.109	0.049	1.873	0.031	Accepted

**Table 5. The Predictive relevance of study model**

Total	R <sup>2</sup>	Q <sup>2</sup>
Innovation	0.886	0.412
Organizational Performance	0.503	0.273

resource dependency theory and stewardship theory that BDV improves OP. BDV has a positive influence on INV ( $\beta = 0.774$ ,  $t = 22.053$ ,  $p < 0.05$ ) and accept H<sub>8</sub>. The findings are consistent with (Miller & Del Carmen Triana, 2009). INV significantly and positively mediates between BDV and OP ( $\beta = 0.383$ ,  $t = 4.822$ ,  $p < 0.05$ ) and accepted H<sub>9</sub>.

BM has no influence on OP ( $\beta = 0.062$ ,  $t = 1.137$ ,  $p > 0.05$ ) and not supported H<sub>10</sub>. The results of this study consistent with (Makhlouf, Ali, & Ramli, 2017). BM has a positive influence on INV ( $\beta = 0.139$ ,  $t = 4.118$ ,  $p < 0.05$ ) and supported H<sub>11</sub>. The results are in line with (Asensio López et al., 2018). INV significantly and positively mediates between BM and OP ( $\beta = 0.069$ ,  $t = 3.092$ ,  $p < 0.05$ ) and accepted H<sub>12</sub>. The indirect results are in line with agency theory that BM significantly improves OP. NBCM has no influence on OP ( $\beta = 0.043$ ,  $t = 1.135$ ,  $p > 0.05$ ) and not supported H<sub>13</sub>. The findings are similar finding with (Puni, 2015). NBCM has a positive influence on INV ( $\beta = 0.055$ ,  $t = 2.609$ ,  $p < 0.05$ ) and accepted H<sub>14</sub>. The results are consistent with (Balsmeier et al., 2017). INV significantly and positive mediates between NBCM and OP ( $\beta = 0.027$ ,  $t = 2.380$ ,  $p < 0.05$ ) and accepted H<sub>15</sub>. The indirect results are in line with agency theory that NBCM significantly influences OP. INV has a highly significant and positive influence on OP ( $\beta = 0.494$ ,  $t = 5.022$ ,  $p < 0.05$ ) and supported H<sub>16</sub>. The results are in line with some prior studies (Uzkurt et al., 2013; Zaefarian et al., 2017). IC moderate the relationship between INV and OP ( $\beta = 0.092$ ,  $t = 1.873$ ,  $p < 0.05$ ) and accepted H<sub>17</sub>. The results are similar to the stewardship theory that INV and IC play a significant role in enhancing OP.

## 7. Summary and conclusion

The study found that only two factors of corporate governance such as BSZ and BD have a significant positive influence on OP. Moreover, all five factors of corporate governance used in this study have a significant and positive influence on organizational performance. INV significantly mediate the relationship between BSZ, BID, BDV, BM, NBCM, and OP. moreover, IC significantly moderate the relationship between INV and OP. Hence, this study concludes that textile companies enhance organizational performance by focusing these five elements of corporate governance, innovation, and innovative culture.

The current research made some fabulous theoretical contributions by focusing on innovation and innovative culture as mediating and moderating variable with corporate governance elements and organizational performance. Most of the previous studies on corporate governance are based on secondary data and less attention has been paid on the questionnaire-based study. Furthermore, the current study incorporates BSZ, BID, BDV, BM, NBCM, IC, INV, and OP in a single study as ignored in previous literature corporate governance with innovative culture and innovation. In practical term, the findings of this study give various fabulous benefits in a practical sense to textile companies. This study elucidated that INV and IC plays a significant role in determining OP. Hence, textile companies can focus these two constructs with corporate governance and OP because BID, BM, and NBCM have no direct influence on OP but with the inclusion of INV, this insignificant relationship converted into a significant and positive term. This study suggests that corporate governance elements can increase OP only with the use of the third variable between these constructs that is INV. IC also plays a significant role in determining OP as suggested (Quy, 2017).

### 7.1. Limitations and suggestions

This study focuses on Pakistan textile companies and provides a significant contribution to the literature but the results of the current study cannot be generalized in the whole world. Hence, there is a need to explore further current study model in the manufacturing sector in Pakistan as

well as in other countries. In addition, there is a need to study corporate governance with a performance by using some mediating variables such as organizational culture and organizational capabilities. Moreover, in future management controls systems and corporate governance both use an independent variable to measure organizational performance.

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## Appendix Scale Items

Corporate Governance	(Honghui, 2017)
<b>Board Size</b> (1) Smaller board enhances organizational performance. (2) Larger size boards are more adept in the provision of resources. (3) Large board of directors is prone to more conflicts among board members which makes it difficult to reach agreements. (4) The firm benefit from larger boards since they provide effective oversight of management and increase resource availability in the organization which leads to the improvement of organizational performance. (5) A larger board will bring more expertise and experience to the board.	
<b>Board Independence</b> (1) The number of executive directors is higher than that of Non-Executive Directors. (2) The board is more independent when the proportion of outside directors increases. (3) Executive directors are better placed in handling the affairs of the organization since they have a deeper understanding of the organizations Operations.	
<b>Board Diversity</b> (1) Appointment of board members has always considered a mix of skills required in the stewardship of the organization. (2) The organization's board appointment process has been political. (3) A member's academic qualifications have been considered before for appointment to the organization's board. (4) All stakeholders have been involved in the appointment of the Board. (5) The board has been composed of both genders. (6) All Board members have had relevant industry experience required to steward the organization.	
<b>Number of board committees</b> (1) There is an audit committee established on the board. (2) Independent committees would focus on improving the company competitiveness and performance. (3) Audit committee are not effective against risk they are just overloaded. (4) The existence of independent committees enhances financial performance of the organization.	
<b>Board meeting held in a year</b> (1) There is poor attendance in board meetings. (2) All the Board meetings have been relevant to the organization's mandate. (3) The Board meetings have been chaired by board members with the relevant qualifications. (4) There have been other members attending Board meetings even when they are not gazetted as its members. The number of board meetings has an influence on firm performance.	

<b>Innovative Culture</b>	<b>(Wallach, 1983)</b>
(1) My organization culture is challenging.	
(2) My organization culture is creative.	
(3) My organization culture is enterprising.	
(4) My organization culture is stimulating.	
(5) My organization culture is driving.	
(6) My organization culture is risk taking.	
(7) My organization culture is result oriented.	
(8) My organization culture is pressurized.	

<b>Innovation</b>	<b>(Darroch &amp; Jardine, 2002)</b>
(1) We develop products or services that better meet the needs of consumers than any other product or service currently available	
(2) We often add new product or services to our existing ranges	
(3) We have launched products or services for which this organization lacks the technological knowledge	
(4) We often reposition existing products or services	
(5) We often change the way we make or deliver products or services	
(6) We develop products or services that will require consumers to substantially alter their behavior	
(7) We often improve or revise existing products or services	
(8) We have launched products or services that are the first of their kind in the world	
(9) We have launched products or services for which this organization lacks the business experiences or knowledge	
(10) We develop product or services that offer greater advantages to consumers than any other product or service currently	
(11) We often introduce new ranges of products or services not previously offered by this company	

<b>Organizational Performance</b>	
<b>Financial Performance</b>	<b>(Henri, 2006)</b>
(1) My organization profit increase gradually within the last 3 years. (2) My organization sales volume increase gradually within the last 3 years. (3) My organization return on investment increase gradually within the last 3 years.	
<b>Non-Financial Performance</b>	<b>(Teeratansirikool et al., 2013)</b>
(1) The number of new product in my organization increase within the last 3 years (2) My organization market share increase significantly within the last 3 years (3) My organization market development increase significantly within the last 3 years (4) My organization quality of product/services of organization increase within the last 3 years (5) My organization employee commitment or loyalty to the organization increases within the last 3 years (6) My organization employee productivity increase within the last 3 years (7) My organization personnel development increase the last 3 years (8) My organization employee job satisfaction increase the last 3 years	



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