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**Impact of Demographic and
Cognitive Board Diversity on
Firm Performance with the
Moderating Role of Political
Control: Evidence from Pakistan**

by

Muhammad Naeem

A thesis submitted in partial fulfillment for the
degree of Master of Science

in the

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*I want to dedicate this achievement my parents, teachers and friends who always
encourage and support me in every crucial time*



CERTIFICATE OF APPROVAL

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Abstract

The growing role of board diversity in corporate governance and its significant contribution towards the quality monitoring and decision making the board of directors, gains much attention among various academicians and policy makers. The current study aims to examine the impact of board demographic and cognitive diversity on the financial performance of 64 non-financial firms listed on the Pakistan stock exchange. In addition, the moderating role of political control is investigated on the relationship above relationship. The data were extracted from the annual reports of non-financial firms ranging from 2010 to 2019. The panel fixed effect and random effect models are applied to the dataset. The results demonstrate a significant and positive influence of gender and age diversity (demographic diversity) on the financial performance of listed firms. The cognitive diversity (both financial expertise and other experience) has a significant and positive impact on the firm's financial performance. Moreover, political control does not moderate on the relationship between demographic diversity and firm performance, and cognitive diversity and firm's performance. The results suggest that increasing both demographic and cognitive diversity of the board of non-financial firms in Pakistan will accelerate their financial performance.

Keywords: Return on Assets, Return on Equity, Tobin's-Q, Demographic and Cognitive Board Diversity, Leverage, Firm Size.

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Abbreviations

FEX	Financial Expertise
FS	Firm Size
GEN	Gender
LEV	Leverage
OBEX	Other Board Experience
PC	Political Control
ROA	Return on Assets
ROE	Return on Equity
SS	Sectorial

Chapter 1

Introduction

In recent past board diversity grab significant attention from both academicians and practitioners throughout the world. The diversity of board, particularly of the non-executive board members, has taken the attention and becomes a pivotal issue in corporate governance. The proponents of board diversity having the view that diversity increases the firm's efficiency and monitoring ability. The board of diversity which covers a lot of features of the board members such as age, gender, race, educational background, nationality, experiences, cognitive ability etc. of board members. Various studies highlighted the benefits as a result of higher board members by arguing that diversity avoid the danger of "groupthink", expands problem solving ability, enhance creativity and innovation, providing new and innovative insights by sharing broader experiences, encourage knowledge and idea sharing and so on (see. i.e. Siciliano, 1996; Schippers et al., 2003; Carter et al., 2003). However, the opponents of the board diversity claim the opposite by viewing that higher board diversity increases decision making ability and therefore, slow decision making. In addition, the board diversity incurs extra cost on account of increasing conflicts on boards, and due to the communication and co-ordination problems. Hence, the board diversity should be optimal (keep the balance) to avoid extra costs and achieve greater efficiency and ultimate performance.

The issue of board of diversity is of a significant importance in the recent times because of stiff competition due to globalization. The competition is not only within countries but from all companies around the world. To compete every

company is requiring to have greater productivity, competitive ability, and higher innovation and creativity. To achieve these mentioned objectives, companies need well-functioning and efficient board. The board of directors stands at the very top of the company policy making and monitoring hierarchy. The timely and efficient policies and excellent across the board accountability a monitoring enhancing firm performance. But the question arises: what is the ideal combination of the board? This is the central question in diversity literature. This question raises many more questions like how many should be males and how many should be females? What should be their professional background? How much should be their financial expertise? What should be their psychological, mental and cognitive ability? And so on. In this strand, current study is designed to examine the impact of board demographic and cognitive diversity on firm financial performance.

After the 2008 financial crises, the European commission addressed the issue of board performance in the green paper that titled "Corporate governance in financial institutions and remunerations policies. In this special issue the European commission highlighted a number of management flaws on the corporate boards and is number as one of the factors contributing to the financial crises. They identified various flaws on account of firms' board performance. They argued that many non-executive directors were not competent enough to form objective judgements on various management decisions. More specifically, at a number of occasions the lack of board diversity leads to the inefficiency of directors to challenge the management decisions.

The norm of board diversity in 2011 was re-addressed, whereas the European commission shed light once more on the significance on board diversity for listed companies. The board diversity or heterogeneity of board members profile and background provide board with a range of values, and a set of competencies. These range of values and competencies has the ability to lead to greater a wide range of resources and capabilities. Variant leadership qualities and traits, diverse backgrounds, experiences and skills provide an effective way of group-think, problem solving ability, and the potential to generate new and innovative ideas. In nutshell, more board diversity leads to more discussion, more ideas, more decisions and more challenges. Board diversity undoubtedly results in better decisions;

however, the decisions take more time.

As there are various features of the board members that can potentially influence their decision and ultimate organizational productivity. Among these various traits, current study is focusing on the two group of features, one is board demographic diversity and the second is board cognitive diversity. In simple, current study is attempting to examine the effect of board demographic diversity and cognitive diversity on the firm financial performance. In the demographic diversity, current study is taking in to account board gender diversity and age diversity. Gender diversity means that how many are the female directors on board. While age diversity meant how diverse is the group as per their age brackets. In the second group, cognitive diversity, the focus in on director's financial expertise and their other experience. Since the effect will be examined on the financial performance, therefore, current study selected three proxies for the measurement of firms' financial performance. These three proxies are return on assets, return on equity, and Tobin's Q. Most of the fast studies examined the effect of board diversity on the financial performance of financial firms. However, current study is addressing the effect of board diversity on the performance of listed non-financial firms

Hassan and Marimuthu (2018) states that among others issues the boardroom of Malaysian firms faced the board structure and the characteristics of the board members are most pronounced such as age, gender, qualification, cognitive ability, and cultural values. Further, they highlighted that imbalanced distribution of directors' feature is a challenge that contribute to lower productivity and performance. Universally, every company have the desire of better corporate governance and higher profitability (Monks & Minow, 2004). In past, many companies experienced significant losses due to high-profile scandals for example in 2001 the Enron scandal, in 2002 the Worldcom and Adelphia and the occurrence of world-wide financial crises in 2008 and 2009. All these scandals were the direct consequences of inefficient boards and ineffective monitoring and accountability. The occurrence of these scams shuttered the governments, policy makers, and regulators across the world and questioned the corporate governance of the firms across the world (Co-Operation, O. F. E., & Development, 2004).

The prime role of board of directors is to provide leadership to the companies, set strategic goals, and are therefore accountable for their decisions and strategic goals that accelerate company's financial performance (Hassan & Marimuthu, 2018). Diverse boards are expected to holistically monitor and control management of the companies. The board diversity is found to accelerate the listed firms board independence (Carter, Simkins, & Simpson, 2003). Further, more diverse boards are expected to increase the firms value creation and profitability.

A number of studies have been conducted to examine the influence of board diversity on firm performance. Among other diversity dimensions, gender diversity achieved a greater importance. However, studies examined the association of gender composition and firm performance reported indeterminate results. For instance, Hassan and Marimuthu (2014, 2016) found significant and positive impact of female participation on firms' profitability, while Adams and Ferreira, (2009) other studies found adverse effect of women's participation on the board and firms' financial performance. Still, some studies reported that the participation of females on boards does not have any impact on firm's financial performance (see i.e. Adams & Ferreira, 2009; Nguyen, Locke, & Reddy, 2015; Hassan et al., 2017).

In the 21st century boards of the companies around the world becomes more diverse as per the members demographics. Among the demographic diversity, gender is of the key importance. Various earlier studies advocated that more female participation in the boardroom enhance boards monitoring and decision-making ability, which result in higher firm performance, especially financial performance. The report on the corporation diversity (2005) exhibit that in the future 100 list of companies' board members, 14.9

The second demographic diversity variables are, age, which means the age brackets of the board members age and how their age could influence non-financial firms' financial performance. As this is well known norm that the young directors are more energetic and more innovative. On the other hand, the elder directors possess more experience and skill, hence more effective decision making. In addition, the elder directors are considered to be more confronted with status quo and will less likely opt for business process re-engineering. Thus, the directors age

is a potential factor which could influence the non-financial firm's performance operating in Pakistan. Therefore, current study is in part investigating the effect of board age diversity and financial performance. Past studies exhibited that age diversity matters in the firms financing decisions. Further, the significant interlink between age diversity and financial performance has been found by past studies such as Jackson et al. (1995) and Milliken and Martins (1996). Conversely, a meta study of Horwitz and Horwitz (2007) highlighted that board age and ethnicity diversity is negatively related with financial performance. On the other hand, Siciliano (1996) does not found any association between the financial performance of non-for profit organizations and their board age diversity. There is the study of Hafsi and Turgut (2013) who found negative relationship between financial performance and age diversity while the effect of board age diversity is found significant and positive on firms social performance. The Woodside and Zhang (2013) exploration also identified the significant and positive effect of age diversity on firms social performance. One important aspect to be discussed here is that the effect is widely diversity across companies, sectors, and countries. Second, the effect is significantly different depending on the type of proxy used to measure the financial performance. Therefore, there is the call for a thorough examination to examine the influence of age diversity on the financial performance of non-financial companies listed on Pakistan stock exchange. To address the above discussed issue of measurement, current study is using three proxies to measure the financial performance of sample companies.

The cognitive diversity is another domain of board diversity such as financial expertise, other experiences, job tenure etc. which is either narrowly investigated are broadly ignored (See i.e. (Hassan, Marimuthu, & Johl, 2015), especially in the developing countries. (Hassan & Marimuthu, 2018). To address, this gap currently study is attempting to examine the effect of cognitive diversity on return on assets, return on equity, and Tobin's Q of non-financial firms listed on Pakistan stock exchange. In the recent management literature, the expertise and experience especially of top management (board of directors) attain significant attention. Studies in past conducted to test that whether the experience, education and skills contribute to the decision making and monitoring ability of top

management. These studies significant linkage between the firms performance and top management experiences and skills (see (Barker III & Mueller, 2002; Tarus & Aime, 2014). Hassan and Marimuthu (2018) identified that experience diveristy is a significant predictor of the information base, skills, and overall abilities that the top management needs to execute their jobs. Patzelt, zu Knyphausen-Aufseß, & Fischer (2009) highlighted that the companeis executives having knowledge and understanding of science and technology are in a better state to take effective decision involving their expertise. As simple the higher konwledge and experience will contribute to better decision making and monetoring ability of board of directors. As the directors having more finanical expertise are expected to be more efficient when addressing the company financial matters such as financing and investment decisions. On the other hand, there are some speculations that the members from the board with a background in social sciences are focused on the short-term objective at the cost of revolution and change (Hassan, Marimuthu, & Johl, 2017). Organization boards having members with diverse experiences are tend to have more substitutes in decision making (Hambrick & Mason, 1984), whereas board members with homogenous experience might think in the same way and lesser exposure, hence, have fewer substitutes while taking important decisions. Thus, the higher experience diversity is a contributor to the firm's financial performance. Similar to this study, Hassan and Marimuthu (2018) examined the effect of demographical and cognitive diversity on the financial performance of non-financial profitability. In the panel framework, the examined 330 listed Malaysian companies throughout 2009 to 2013 and using the interaction approach. Their results were that board cognitive diversity and demographic diversity are the significant predictors of a firm's financial performance. Besides, they found that ethnically diverse women have a negative influence on the performance of firms operating in Malaysia. The studies of Güner, Malmendier, and Tate (2008) and (Minton, Taillard, & Williamson, 2014) determined the effect of financial expertise on the financial performance of banks. The study of Güner et al. (2008) explored the role of financial expertise, particularly the commercial bank's expertise, the effect on the financing and investment decisions over 14 years of banks. They show that financial expertise exerts significant influence. When the commercial banks experts

join the banks boardroom, it reduces the sensitivity of investment cash flows and enhances the external funding of banks. Thus, the financial expertise of the board members significantly influences different profitability indicators which result in improved financial performance. Moreover, Minton et al. (2014) reported that the financial expertise of the boardroom accelerates the risk-taking exposure of US firms before the 2007-08 financial turmoil. However, Rose (2007) does not find any relation between the firm's performance and the skillset of board members. On the contrary, (Horwitz & Horwitz, 2007) conducted a meta-analytical evaluation of combined diversity literature and reported that the heterogeneity of board members across gender, age, experience, and ethnicity, are negatively related to a firm's performance.

1.1 Background of the Study

The internal management system of any firm has argued the developed by the board members and this is considered that board composition influences company profitability (Carter, D'Souza, Simkins, & Simpson, 2010). One characteristic of the board contribution is gender diversity that has engaged to grow up the focus of the latest academics and decision-makers. The linkage among the gender diversity and firm profit section is a major focus of board members of the firm (Lückerath-Rovers, 2013; Mahadeo, Soobaroyen, & Hanuman, 2012; Parola, Ellis, & Golden, 2015). Therefore, the prior investigation is remote from availing the conclusive outcomes and (Carter et al., 2003; Farrell & Hersch, 2005) and (Campbell & Mínguez-Vera, 2008) examine the board diversity is the positive linkage with financial earning of the firm. Adams and Ferreira (2009) conduct a positive association just as a firm with a weak governance system. Tommerup, Rose, and Svendsen (2007) found that significant linkage among the profitability as evaluated by Tobin Q formula of profit and the next existence of women board members (Haslam, Ryan, Kulich, Trojanowski, & Atkins, 2010) found that same consequences in the study of U.K.

Francoeur, Francoeur, Labelle, and Sinclair-Desgagné (2008) also found that no significant linkage between gender diversity and company profitability in Canada

except the company operates in the complexity of situations. Moreover, Ahern and Dittmar (2012), accomplish that the obligation of a forty percent portion for women on board governing the Norwegian management found that negative influence on company value. Hence, Matsa and Miller (2013) comparison of financial data for advertisement registered companies in Norway to a mixed sample of non-registered companies and registered and non-registered Scandinavia. The scholar recognized the partition process in Norway negatively affects company profitability by minimizing the income level for short term basis.

The association among gender diversity on firm management and is an uncertain and technical for women participation on the board members may be at the source of the questionable consequences (Labelle, Francoeur, & Lakhali, 2015) recommend that many countries are recently recognizing the availability of diverse techniques to encourage gender diversity on organizational board members in the firm. According to the previous scholars, hence there are some methods concerning the contribution of females on the company management throughout the world. The primary technique is coercive and focuses on showing confirmatory regulation to confirm a reliable level of women board management of contribution portfolio. In the presence of enabling technique, firms are majorly demanded by the strategies to comply with given instructions or descriptions of why they do not have any right. In the third point, firms are left to market factors to finalize whether to engage females in the top board management with help of voluntary methods. The marketing forces and some lenient or hard law initiatives are a various firm based on the reality of females whose are believed to positively and significantly influenced by the good quality of the company governing system and strategical managerial process and therefore their profitability. The previous study increases the question as to the relation of the effectiveness of these more or lesser coercive techniques.

1.2 Underpinning Theories

As discussed, the current study is aiming to examine the board diversity effect on non-financial firms listed on the stock exchange of Pakistan. In this section, a theoretical underpinning to the relationship between diversity and firm performance is provided. In other words, to explain in light of past studies that how board diversity channel to effect firm's financial performance. In this line, this study is taking the help from agency theory and resource dependence theory.

1.2.1 Agency Theory

Harrison and Klein (2007) advocated that no such theory exists that can explain the association of boardroom diversity and firm performance. However, in light of past studies current study is highlighting other theoretical underpinnings that have the potential to explain this relationship. As agency theory explains principal-agent relationship. Where principal (board of directors) exercise monitoring and controlling functions on management (agent). When the goals of principal and agent contradicts (confliction goals) this difference creates agency problem. In this implicit agreement between principal and manager, the manager is obligated to perform activities for the principal. The composition of the board is essential for the monitoring agency relationship, and agency relationship is playing significant role in the firm financial performance (Jensen & Meckling, 1976a). Both the agency and resource dependence theories postulate that the more participation of women on the company boards the better is the performance.

Bhagat and Bolton (2008) describe that in an agency theory setting of managing investors association is the main contest since it is related to the agency issues in which conflict of interest and asymmetry knowledge. Subsequently, agency views and problems come from the parting of ownership and control among the company shareholders and their management. The board of directors who sits among the investors and the management is capable of the solution of issues and is employed on behalf of the investors to save their benefits and capital (Donaldson & Davis, 1991; Hermalin & Weisbach, 2001; Rowley, Shipilov, & Greve, 2017). In

the previous investors and management is a mix of differentiation demographic like people and females of top management could be focused, also with a mixture of many demographics to deliver, board diversity, and solve the agency theory problems and challenges.

Agency theory Jensen and Meckling (1976) claims that the greatest of the time trading runs under the situation with a lack of knowledge and instability. Agency theory recommends that single ownership from lead the interconnects that company is being controlled by a specialist. Classical knowledge admittance to the professional management delivers them with more personal benefits due to the reality that management is more involved in their private wellbeing as comparison of investors safeties (Kiel & Nicholson, 2003). In the discussion of this present development, this investigation combines agency theory and resource depending theoretical concept to advance the proposition that board diversity has to interact with the effect on the corporate governing system and company profitable position. The linkage between the existence of diversity in the board of directors and company profitability could be described from the agency's point of view (Jensen & Meckling, 1976) and resource dependence theory (Pfeffer & Gerald, 1978). Hence, agency theory objective, there is a significant linkage between the accessibility of diversity on board and efficiency of measuring and control purposes.

Like gender diversity would enhance the board's independence level hence the top management can better deliver its controlling functions (Adams & Ferreira, 2009). Board members in demographic diversification minimize the agency-related cost by the improvement of board controlling, enhancing board independence level and providing the legitimacy, mentoring of management, and improving the linkage with investors (Adams & Ferreira, 2009; Carter et al., 2003). Resource dependence theory suggests that the board of directors' benefits in the firm (Richard, Wu, Markoczy, & Chung, 2019). In the demographic sector, different management can produce a wide range of information, ideas, and about any information which controls to extend the efficiency of thoughts and inspiration in corporate meetings (Amason & Sapienza, 1997; Burgoyne & Jackson, 1997). This type of diversity in the top management board may be experienced with different debates patterns and raised the comparison of the homogenous board. This can be controlled to in-depth

and profound comparison like helping address simultaneously different prospects of the challenges at grip hence hold on higher quality of decision linked with improvement of company profitability (Campbell & Mínguez-Vera, 2008; Nielsen & Huse, 2010).

1.2.2 Resource Dependence Theory

Resource dependence theory recommends the influence of resource acquisition on firm-level behaviors (Hillman, Withers, & Collins, 2009). The theory is depending on the methods in which direction to attain the resources, the firm must involve in dealing with other performers and administrations in their settings (Pfeffer, 1982). In this paradigm the explanation by (Pfeffer & Gerald, 1978).

Managers of the firm help as the relation among the company and outside factor with no choice of assets probable to survive. However, they attend as a vital tool in taking the basic determinant of environmental susceptibility in the company settings. About the top management in which the resource depending theory focuses on how the board members facilitate contact to the valuable reasons. As described by (Randøy, Thomsen, & Oxelheim, 2006), the theoretical focuses on the company's ability to the procedure of relations to secure the admittance to critical ways contain the capital structure, clients, suppliers, and cooperating partners. Subsequently, shows that it may have a diverse perception, a further diverse board frame is seen as the higher capability to recognize the client group.

According to Thomsen and Conyon (2012), board diversity concerning people of any country, education level, expertise, and background are known as a board of directors has a recognizable variety of diverse information and skills. According, these top executives having a higher vision into markets, clients, employees, and business accommodations. It is possibly controlling the best understanding of any business environment and however, better firm performance (Shaffer & Hillman, 2000). For example, given that females have additional insights such as diversification of board of directors is better capable to understand the requirements of the whole market. However, females are legislatures on the board are better able to expertise about any women's requirement, and the similar it is the right direction

for men's contributions on any board (Drees & Heugens, 2013). A similar could be shown that age diversity where having board management of dissimilar age groups is special if the company is capable to keep the requirement of the market concerning various age supports. In more expansion of country-level diversity on the board of directors carries dissimilar insights with representation of diverse countries role. It is very dynamic to ensure the firms power to gain diverse resources that are most important related to this achievement (Carter et al., 2010).

The different range of knowledge and skills among the diverse board is more likely to affect firm performance. In light of resource dependence theory, the diverse board has good access to different valuable resources. As the diverse board has more ability to be connected with the stakeholders of critical resources like customers, suppliers, and capital providers, etc. this will resultantly a significant positive influence on the firm performance. Hence, the resource dependence theory provides the basis to argue that diverse board has greater access to valuable resources and this access effect the performance of the firm.

1.3 Gap Analysis

There are multiple reasons that suggest for additional study in the board diversity, particularly in Pakistan since this area is broadly ignored. One possible reason that shows the need for additional studies is the mixed and indeterminate findings of past studies who attempted to examine the issues regarding corporate boards (Hassan & Marimuthu, 2016; Hassan et al., 2015c). Second, past studies of board diversity very rarely discussed boards cognitive diversity that comprises financial expertise diversity, educational diversity, and other experience diversity (see i.e. Hassan, Marimuthu, & Johl, 2015c).

Third, the focus of past studies is more tilted towards the effect of board diversity on the performance of financial firms. Another reason is that in context of Pakistan studies on the board diversity are very limited. Thus, this is important to use different sample, diversity dimensions and technique to examine the effect of board demographic and cognitive diversity on profitability of non-financial firms operating in Pakistan. Past studies supported the association of board demographic

and cognitive diversity with firm's financial performance (Hassan, Marimuthu, & Johl, 2016).

The study of Rocky and Zakir (2019) investigates that whether conceptual diversity (Political diversity) in the top management influence firm profitability. The results found that whereas a top executive with a wide range of political control and views are linked with better profitability, and if other things do not change, that the fundamental influence like extension in diversity is negative and important. Thus, the different political views of the members on the board will also influence the association among board diversity and company performance. In addition, the political affiliation and dependency of board members has the potential to influence the profitability of firm. Therefore, current study is in part examining the moderating role of political control in the relationship between board diversity (cognitive and demographic) and firms' financial performance

1.4 Problem Statement

Overall, there is a broad range of literature on board diversity and firm performance, where some studies found positive linkage among directors' diversity and financial performance while others create a negative effect; however, there are studies that do not conclude any link between diversity and performance (Ciavarella, 2017). More importantly, (Adams & Ferreira, 2009) suggest that the impact of board diversity on the firm profit section is heterogeneous: where some firms benefit from more diversity than other losses from diversity. They mentioned that board diversity has costs and benefits and the balance of such costs and benefits varies across firms.

For instance, in large corporations with complex asset structures, diverse directors might be needed. Another example could be firms with a high level of innovation and creativity might need a diverse board to forecast and adapt to time changes. Hence, the effect could be contextual and may vary across companies and market of interest. Therefore, current study is examining the effect of board demographic and cognitive diversity effect of the profitability of non-financial firms listed on stock exchange of Pakistan.

The cognitive diversity is another domain of board diversity such as financial expertise, other experiences, job tenure etc. which is either narrowly investigated or are broadly ignored (See i.e. (Hassan, Marimuthu, & Johl, 2015), especially in the developing countries. (Hassan & Marimuthu, 2018). To address, this gap currently study is attempting to examine the effect of cognitive diversity on return on assets, return on equity, and Tobin's Q of non-financial firms listed on Pakistan stock exchange.

In the recent management literature, the expertise and experience especially of top management (board of directors) attain significant attention. Studies in past conducted to test that whether the experience, education and skills contribute to the decision making and monitoring ability of top management. These studies significant linkage between the firms performance and top management experiences and skills (see (Barker III & Mueller, 2002; Tarus & Aime, 2014).

Hassan and Marimuthu (2018) identified that experience diversity is a significant predictor of the information base, skills, and overall abilities that the top management needs to execute their jobs. Patzelt, zu Knyphausen-Aufseß, & Fischer (2009) highlighted that the companies executives having knowledge and understanding of science and technology are in a better state to take effective decision involving their expertise.

As discussed, the findings of past studies are either indeterminate or facing with significant limitations. In addition, the focus in the diversity literature is more on financial firms while the non-financial firms is broadly ignored. Furthermore, in the context the effect of board cognitive diversity is broadly ignored especially in non-financial firms. Therefore, current study is examining the effect of board demographic and cognitive diversity effect on the profitability of non-financial firms listed on the stock exchange of Pakistan.

1.5 Research Questions

- Does board cognitive diversity influence firm performance?
- Does board demographic diversity influence firm performance?

- Does political control moderate the relationship between gender diversity and firm performance?
- Does political control moderate the relationship between demographic diversity and firm performance?

1.6 Research Objectives

- To investigate the relationship between board cognitive diversity and firm performance.
- To examine the relationship between board demographic diversity and firm performance.
- To check the moderating role of political control among board cognitive diversity and firm performance.
- To examine the moderating role of political control among board demographic diversity and firm performance.

1.7 Significance of the Study

The significance of this study is manifold. First, this study will help the academicians to understand that whether the increasing debate of the board diversity is affecting the performance of the firms or not. In particular, the study will check and suggest that whether the demographics and cognitive diversification of the board management are linked with the firm performance or not? Second, this study will help the policymakers to clear and revise the policies regarding the composition of the firm boards.

Third, this study will help the firms to understand that changing the board demographic and cognitive affecting their firm performance or not. So, after the conclusive findings now firm top management easily understands the actual attributes regarding the cognitive and demographics that the board should have to

increase the firm performance. Lastly, understanding the moderation of political influence between board diversity and firm performance will lead them to either eliminate or ignore the political control in the board of directors.

1.8 Plan of the Study

Chapter 1 is of introduction that includes theoretical background, research questions, objective, and significance of the study. The second chapter is reviewing the previous studies. Chapter three is of methodology covering the sample of the study, econometric model, and description of the variables. Chapter four will include the analysis of the econometric data. The last chapter will conclude the study and will suggest future directions as well as will provide suggestions for the investigation.

Chapter 2

Literature Review

The relationship between board diversity and firm performance is a great importance for practitioners, researchers, investors, and policymakers alike. In the present research, the effect of board demographic diversity (age and gender) and cognitive diversity (financial expertise and other board experience) on the performance (ROA, ROE and Tobin's Q) of 64 non-financial companies those are registered on the Pakistan Stock Exchange while the sample period. The moderating role of political control is examined between demographic diversity and firm performance; and cognitive diversity and company profitability. The purpose of our investigation is to seek the answers that whether the board diversity influences firm performance and is there any role of political control in such a relationship or not.

2.1 Board Diversity and Firm Performance

The characteristics of the team that is key in affecting team performance are of essential importance to policymakers and researchers (Bell, 2007; Carpenter, Geletkanycz, & Sanders, 2004). The main attention in the past studies is given to the demographic diversity, age and education, etc., that relate to the team performance (Kochan et al., 2003; Mannix & Neale, 2005). The primary reason behind this much attention to the demographic diversity is because of the changing nature of the workforce, cultural norms and societal apprehensions associated with

diversity issues (Jackson, May, Whitney, Guzzo, & Salas, 1995). This team diversity and firm performance linkages were explored by many studies and support the hypothesis that board diversity affects firm performance. But this top management teams (TMT) literature recently diverted to corporate boards due to the unprecedented failures, less attention on the controlling contribution of the board by the investors as well as by regulators (Ararat, Aksu, & Tansel Cetin, 2015). The board, corporate board, constitutes a primary mechanism of corporate governance, particularly in the markets with weaker external controlling mechanisms (Dahya, Dimitrov, & McConnell, 2008).

The “business case” of board diversity is based on two broad perceptions; resource dependency (Pfeffer & Gerald, 1978) and agency theory (Jensen & Meckling, 1976). Past studies differentiated the demographic diversity of the board from structural diversity (Ben-Amar et al., 2013). They interlink the demographic diversity of the board with the service task and structural diversity which is normally measured via board independence is categorized as the number of independent members of the board and the individual role of top management like (CEO) or president of the top-level board in the firm, which is related with the controlling aspect of the board. In recent times, the issue of board diversity emerged and gain much attention from various researchers and policymakers (Rhode & Packel, 2014). The board diversity is now considered as one of the prime elements of corporate governance (Alabede, 2016). The diversity of board is attained through two basic growth and where one is demographic diversity and the other is cognitive diversity. The demographic diversity consists of the director’s age, gender, ethnic group, nationality, etc. while the cognitive diversity is concerned with the director’s exposure like experience and education, etc (Erhardt, Werbel, & Shrader, 2003).

Board diversity has been used as a vital tool in corporate governance. The attention of board diversity is because greater diversity is considered as higher corporate governance, hence greater corporate governance enhances firm performance (Eulerich, Velte, & van Uum, 2014). The reason behind the favorable effect of board diversity on corporate governance is that; when different directors have different exposures and backgrounds; they share these experiences among the board

members and use these experiences to enhance firm performance. The decisions on the board diversity are not just based on the ethical level but are deemed to be on the foundation of cost and benefit analysis, meaning that how much the board diversity will cost the firm and how much will it in return contribute to the firm performance (Sarhan et al., 2019). It is to be taken into consideration that in the literature studies are arguing that the implications of board diversity on company profits are indeterminate (Hassan & Marimuthu, 2018). So, before approaching the diverse board, policymakers should consider other factors too to attain favorable results. The study found a significant influence of board diversity on social performance and fundraising results. Specifically, the study shows that occupational diversity among the board members is the significant contribution to organizational culture.

Similarly, the study of (Sarhan et al., 2019) examined the influence of board diversity on the performance of middle east and north African firms. In the panel settings, they used a sample of 600 firms ranging from 2009 to 2014. The findings highlighted three key insights. First, the diversity of board made up gender and nationality have a significant and positive influence on firm performance. In the next form, firms with a higher degree of governance quality tend to have greater firm performance. Lastly, the board diversity composes of gender and nationality enhances the director's pay rather than the executive pays scales. Interestingly, they got that the gender diversity of the directors has a positive influence on the financial performance of the firm but this diversity, gender diversity, is negatively linked with the firm ability to attract funds. However, they expressed that the age groupings of the board members, age diversity, is associated with a high degree of fundraising.

2.2 Demographic Diversity and Firm Performance

Oxford English dictionary describes diversity as “the condition or equality of being diverse, different, or varied; variety, unlikeness.” The term diversity is often

used interchangeably as “heterogeneity”. Demographic diversity is defined as “the changes between employees in numerous methods, such as age, gender, ethnicity and race (Baugh & Graen, 1997). The literature in particular highlights two forms of demographic diversity. Where one is objective diversity, which postulates the actual differences between the members (Shemla, Meyer, Greer, & Jehn, 2016), and the other is supposed diversity, the degree to which members considered themselves different from others (Huang & Iun, 2006).

In today’s era of fast-changing work environment and globalization, organizations across the globe are becoming more and more difficult and it is anticipated to grow further (O’Reilly III, Williams, & Barsade, 1998). Most importantly, this unprecedented diversity highlights the vital role of engaging professional researchers with key insights of how to capitalize on the potential diversity or cope with the negative effects of a diverse workforce (Mayo et al., 2016). Watson, Kumar, and Michaelsen (1993) suggested that this demographic diversity provides a wider perspective of new and innovative ideas that have the potential to enhance the quality of decision making. If not addressed effectively may lead to lack of cohesion or even to conflict (Nakai, Yamaguchi, & Takeuchi, 2016), decreased firm performance employees dissatisfaction (Jackson et al., 1991), high turnover (Wagner, Pfeffer, & O’Reilly III, 1984), and lower job obligation (Riordan & Shore, 1997). The two wide meta-studies of (Thatcher & Patel, 2011) and (Schneid, Isidor, Steinmetz, & Kabst, 2016) reported the mixed influence of diversity on different performance indicators including firm performance.

The boards of the companies in the 21st century start to be diverted based on various demographic dimensions. Among others, gender is of significant importance. The report of cooperation for board diversity (2005) highlighted that in the fortune 100 companies, 14.9 percent of the board directors are from minority and racial groups. The Catalyst (2004) census reported a 5.2% increase since 1995, in the number of females holding positions in the board and making a total of 14.8% representations in 500 fortune companies.

Moreover, in 1960, no African-American women were holding a post on the board of 500 Fortune companies. There were 150 African-American women on the boards of 500 Fortune companies in 1995 and accelerated to 260 posts in 2005 (Council,

2006). Many past studies found the significant and positive influence of such board diversity on firm performance (Burke & Mattis, 2013; Carter et al., 2003). The studies that were designed to explore the influence of gender on board diversity reported that gender diversity in the corporate board positively affects firm performance (Carter et al., 2003; Erhardt et al., 2003). In another way, some investigations reported contradictory results, where (Shrader, Blackburn, & Iles, 1997) analyze an inverse association between the percentage of women on the board and firm performance. Some studies do not find any association between gender diversity and firm performance (Dwyer, Richard, & Chadwick, 2003).

The internal linkage between the board gender diversity and firm performance has been explored by various past studies. In this line of studies, (Carter et al., 2003) using Tobin's Q as the evaluator of the market-based firm performance reported that firms in the US with a large number of female directors on the board perform better than the firms having a smaller number of female directors. Other studies using the accounting-based measure of performance, ROA, suggested the positive linkage between gender diversification and firm profitability (Krishnan & Park, 2005; Mahadeo et al., 2012).

A similar study of (Erhardt et al., 2003) used a sample of 112 US firms and showed that board diversity is associated with higher firm performance. This positive linkage between demographic diversity and firm performance has been confirmed by studies in other countries too, including developed and developing countries. Like in China, the study of (Liu, Wei, & Xie, 2014) reported a significant and positive influence of board diversity on firm performance in firms listed on the Shanghai Stock Exchange from 1999 to 2011. Using the Canadian context, the study of (Francoeur et al., 2008) demonstrated that firms with a larger composition of women on the board generate abnormal returns. Other studies like Adler (2001) and the recent one shows the significant influence of gender diversity on firm market performance and reported that the higher gender diversity enhances the firm market valuations.

The study of Carter et al. (2010) surveyed the standard and poor's 500 between the period of 1998 and 2002 based on Tobin's Q and return on assets, to determine the influence of gender diversity on the financial performance of the firms. Their results

express a positive correlation between gender heterogeneity and ROA and does not found any linkage among gender diversity and Tobin's Q. The similar study of (Lückerath-Rovers, 2013) also reported a positive connection among gender diversity and firm financial performance. In addition, Liu, Liu et al. (2014) demonstrated their gender diversification is positively linked with firms' assets returns and equity or shareholder returns.

After the large corporate scandals in the last two decades like WorldCom, Ahold, and Parmalat, etc., several practitioners and policymakers called upon for more corporate board diversity (Randøy et al., 2006). Due to the widespread demand for board diversity, TIAA-CREF a renowned giant pension institute in the US considered a key opinion giver in corporate governance, expressed that corporate boards should be occupied by more "qualified individuals who reflect the diversity of experience, gender, race and age" (TIAA-CREF, 1997). Since the age of the board members matters in the financing position of the non-financial firm in Pakistan. Therefore, the investigation also taking into consideration the age effect on the ROA, ROE and Tobin's Q, which are used as the measures of financial performance in the current study.

The literature shows a significant effect of age diversity on the financial performance of firms. Like the studies of (Jackson et al., 1995; Milliken & Martins, 1996) found that age affects significantly the financial performance of firms. Followed by other studies, such as the meta-study of (Horwitz & Horwitz, 2007) shows that age, ethnicity, and experience are negatively correlated to the performance of firms. Siciliano (1996) explored the effect of age diversity on the donations collection of not-for-profit organizations, he does not find any association between age diversity and donation collection. On the contrary, the study of (Hafsi & Turgut, 2013) also takes the negative effect of board age diversity and firm societal performance, while they found a positive gender diversification effect on the social performance of the firms. This age diversity relation with social performance is further confirmed by the study of (Woodside & Zhang, 2013).

As the focus of the current study is the influence of board diversification on the financial performance of registered non-financial-firms in Pakistan, where one of the aims is to quantify the influence of age diversity on the financial performance

of firms. In the literature, such as the study of (Arioglu, 2020), using two-stage ordinary least square technique and utilizing the world value survey data, examined the effect of age diversity and financial performance of Turkish firms.

The consequences examine the positive and significant impact of age diversity, different age brackets of the board members, on the financial performance of the firms. Since the board of directors of different age groups grew up invariant environments, with variant economic-orientation, different cultures, could have different values and beliefs, and experiences that could positively affect the decision-making and controlling ability of the board (Talavera, Yin, & Zhang, 2018).

Therefore, the result of such favorable effects of directors age diversity contributes to the financial performance of the firms. As with other demographic diversity of board members, age diversity might produce (i) more effect monitoring ability of the board members (Arioglu, 2020), (ii) more successful strategical decision making (Ali et al., 2014), (iii) enhanced interrelation and proficiency (Talavera et al., 2018), (iv) and greater creativity and information sharing ability among the boardroom (Ben-Amar et al., 2013). These attributes lead to the greater financial performance of the firms (Estélyi & Nisar, 2016).

The results of the empirical studies are sort of mixed. For instance, the study of Kim and Lim (2010) found the top executive's age diversification has a positive influence on the financial value of the firms. Similarly, the study of (Mahadeo et al., 2012) also found a positive linkage between age diversity and financial performance of the firms. In a similar vein, (Nguyen, Hagendorff, & Eshraghi, 2015) expressed that a higher board age diversity expands the shareholder wealth of the US banks.

On the contrary, the review of (Hagendorff & Keasey, 2012) demonstrated that a greater age diversity of the bank board members results in wealth losses around the acquisition announcements. The negative correlation between age diversity and financial performance is further highlighted by the findings of Ali et al. (2014) as well as the study of (Espeland et al., 2018) also shows the negative relation between bank performance and corporate board age diversity. However, the study of (Ararat et al., 2015) was unable to discover any linkage between age diversity and company performance.

2.3 Cognitive Diversity and Firm Performance

The cognitive diversity of the board of directors which is educational, experience, and tenure diversity, is narrowly deliberated or even ignored (Hassan, Marimuthu, & Johl, 2015), particularly in the developing world (Hassan & Marimuthu, 2018). To fill this gap current study is in a way designed to answer the question that whether board cognitive diversity influences firm financial performance or not. However, in the fresh management literature, various expertise and its influence on the performance got wider consideration.

Past studies tried to explore that whether the top management shows any biases in the decision-making that shows their useful background, financial expertise, which in try affect the company's financial performance (Barker III & Mueller, 2002; Tarus & Aime, 2014). The experience diversity or financial experience diversity is a significant predictor of the information base, skills, and overall abilities that the top management needs to execute their jobs (Hassan & Marimuthu, 2018).

A good explanation of the experience diversity can be related to other fields. Like (Patzelt, zu Knyphausen-Aufseß, & Fischer, 2009) argued that executives of the board having exercise and experience in science and engineering take the decisions with the whole understanding of technology and innovation. Thus, in the same way, board members with greater financial expertise tend to take more mature decisions which in turn leads to the improved financial performance of the companies.

On the other hand, there are some speculations that the members from the board with a background in social sciences are focused on the short-term objective at the cost of revolution and change (Hassan, Marimuthu, & Johl, 2017). Organization boards having members with diverse experiences are tend to have more substitutes in decision making (Hambrick & Mason, 1984), whereas board members with homogenous experience might think in the same way and lesser exposure, hence, have fewer substitutes while taking important decisions. Thus, the higher experience diversity is a contributor to the firm's financial performance.

Similar to this study, Hassan and Marimuthu (2018) examined the effect of demographical and cognitive diversity on the financial performance of non-financial

profitability. In the panel framework, the examined 330 listed Malaysian companies throughout 2009 to 2013 and using the interaction approach. Their results were that board cognitive diversity and demographic diversity are the significant predictors of a firm's financial performance. Besides, they found that ethnically diverse women have a negative influence on the performance of firms operating in Malaysia. The studies of Güner, Malmendier, and Tate (2008) and (Minton, Taillard, & Williamson, 2014) determined the effect of financial expertise on the financial performance of banks.

The study of Güner et al. (2008) explored the role of financial expertise, particularly the commercial bank's expertise, the effect on the financing and investment decisions over 14 years of banks. They show that financial expertise exerts significant influence. When the commercial banks experts join the banks boardroom, it reduces the sensitivity of investment cash flows and enhances the external funding of banks. Thus, the financial expertise of the board members significantly influences different profitability indicators which result in improved financial performance. Moreover, Minton et al. (2014) reported that the financial expertise of the boardroom accelerates the risk-taking exposure of US firms before the 2007-08 financial turmoil. However, Rose (2007) does not find any relation between the firm's performance and the skillset of board members. On the contrary, (Horwitz & Horwitz, 2007) conducted a meta-analytical evaluation of combined diversity literature and reported that the heterogeneity of board members across gender, age, experience, and ethnicity, are negatively related to a firm's performance.

Some studies checked the explanatory power of the industry experience in the firm's financial performance. As (Drobetz & Momtaz, 2016) discover that the director's prior knowledge of a similar industry, is a valuable corporate governance mechanism. They reported that outside directors with industry knowledge are respected at a premium in comparison to others. Besides, board with such experiences reduce investment distortion.

Overall, there is a broad range of literature on board diversity and firm performance, where some studies found positive linkage among directors' diversity and financial performance while others create a negative effect; however, there are studies that do not conclude any link between diversity and performance (Ciavarella,

2017). More importantly, (Adams & Ferreira, 2009) suggest that the impact of board diversity on the firm profit section is heterogeneous: where some firms benefit from more diversity than other losses from diversity. They mentioned that board diversity has costs and benefits and the balance of such costs and benefits varies across firms. For instance, in large corporations with complex asset structures, diverse directors might be needed. Another example could be firms with a high level of innovation and creativity might need a diverse board to forecast and adapt to time changes. Hence, the influence of board diversity on firm performance is in a way based on other attributes too such as the nature of the corporate, tradition of the business, and the primary roles of board members, etc.

2.4 Moderation Role of Political Control

As mentioned, the primary purpose of this research is to determine the association of demographic and cognitive diversity with firm financial performance, measured with ROA, ROE and Tobin's Q. This study also looks into the moderating role of political control between the linkage first between demographic diversity and firm performance and second between the linkage between cognitive diversity and firm financial performance.

The reason behind exploring this moderating role is because as board members carry different political ideologies and the differences of such ideologies have the potential to influence their demographic and cognitive attributes and also could influence the firm's financial performance. In the current study, it is expected that greater political control over the corporate board will influence the different diversity dimensions and hence the ultimate financial performance of the firms.

In literature, studies found that the political ideology of the board members influences the financial performance of the firms (Kim, Pantzalis, & Park, 2013). The effectiveness of the board enhances when the political ideology of the external directors contradicts the viewpoint of internal management (Kim et al., 2013). They argued that the greater diversity of board on the grounds of political ideology reduces the firm's agency cost and enhances the firm's financial performance.

In nutshell, they reported that higher political standpoints are the key to board effectiveness.

Similarly, the study of (Zakir, 2019) explored that whether a political belief or political control (political ideology) influences firm performance or not. They concluded that boards with diverse political beliefs are estimates for better financial performance. Besides, the findings of (Bernile, Bhagwat, & Yonker, 2018) displays that political diversity is positively linked with firm performance. They further reported that the greater diversity of political belief is related to greater diversity in terms of gender, age, education, ethnicity and race.

However, the second stream of studies reported the negative effect of divergent political beliefs on firm performance, because a greater political division reduces the speed of the decision-making process and also accelerates the conflicts between the board members. In addition to these arguments, the study of (Akerlof & Kranton, 2000) suggested that the identity and perception thereof affect the behaviors of the member's which in turn influence the outcomes quite different from what was predicted by the standard models.

Most importantly, the political affiliation could provide the basis for discrimination and disbelief among the members and such disbelief may cause the firm financial performance. Similarly, such differences in political beliefs may create different groups on the board. Goette, Huffman, and Meier (2006) depicted that such kind of groups can form in even the arbitrary selection process of the teams.

As for more severe consequences, the results of (Hargreaves Heap & Zizzo, 2009) expressed that such groups in the board may lead to discrimination against the members outside of the group and this will diminish the level of trust among the members. In the same way, (Germain, Galy, & Lee, 2014) also found the same evidence in the boardroom. They showed that the greater alignment of CEOs towards the independent directors is negatively linked with firm performance.

After examining the theoretical grounds and empirical support it is evident that political control has the potential to influence the dimensions of diversification and firm profitability. Therefore, in this study, the political control is taken as a moderating variable to examine that whether the higher political control strengthens

or weaker the linkage between board diversification (demographic and cognitive) and firm performance (ROA, ROE, and Tobin's Q).

2.5 Research Framework

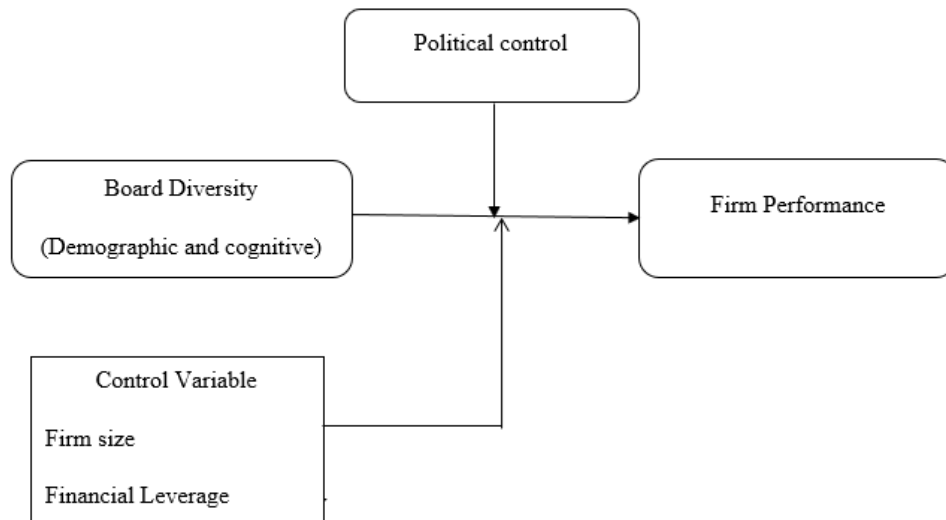


FIGURE 2.1: Research Model

2.6 Hypotheses Statement

H₁: There is a positive impact of demographic (age, gender) board diversity on firm performance.

H₂: There is a positive impact of cognitive board diversity on firm performance.

H₃: Political control significantly moderates the relationship between demographic (age, gender) board diversity and firm performance.

H₄: Political control significantly moderates the relationship between cognitive board diversity and firm performance.

Chapter 3

Research Methodology

3.1 Data Description

The present section of methodology covers the description regarding data, sources of data, and methodology applied to check the effect of cognitive board diversity on company performance.

The objective of this study is to explore the influence of board diversity on the performance of non-financial firms. In the independent variables, there are two sets first is the demographic variables of board diversity and the second is the cognitive characteristics of the board of director's diversity. The demographic attributes are the director's age, gender, and ethnicity. While in the cognitive features of the board of directors are an institution of college employees' age, gender, financial expertise, and other management expertise. On the other hand, the dependent variable is the performance of non-financial firms, which is measured through four proxies the first is ROA, the second is ROE, the third is Tobin's Q, and the fourth is market share growth. There is a moderating variable i.e. political control on the relationship between board diversity and firm performance.

3.2 Population of Research and Sample Size

The research targeted the population in which all non-financial firms have been included from the nonfinancial sector in Pakistan. The sample is registered on the

stock exchange of Pakistan. The Panel data which has been obtained in this study is secondary. The data of all the variables were collected from the annual reports of the non-financial firms that are registered on the Pakistani stock exchange. The annual data were extracted from 2009 to 2019.

3.3 Sample Classification

Table 3.1, shows that 64 firms were selected from non-financial firms to make sure an equal chance for every industry.

TABLE 3.1: Sample Classification

Industry Type	No. of Firms
Sugar	16
Cement	16
Oil and gas	11
Textile spinning and weaving mills	21

3.4 Estimation Method

The analysis technique was used the ordinary least square technique to confirm the effect of board diversity on firm performance with moderating role of political control in non-financial firms registered on the Pakistan Stock Exchange. fixed effect and random effect models have been used to explore the strength of the above-mentioned hypotheses. A multicollinearity check (variance inflation factor) has been applied. The model selection has been finalized through two criterion tests.

3.5 Measurement of Variables

3.5.1 Gender Diversity

How many female directors included in the total strength of the board of directors (BOD_FEM). Like how many are of the total board of directors taken as female.

3.5.2 Age Diversity

The director's age (BOD_AGE) measured as how many years age of any director.

3.5.3 Financial Expertise

The next diversity measure is the director's financial experience (BOD_FEXP).

3.5.4 Other Board Experience

If the director having experience in another company as a board member, it was assumed as 1 otherwise 0.

3.5.5 Measuring Board Diversity

The selection of characteristics was supported by the empirical literature on diversity as well as data accessibility. Present investigations on diversity often differentiate among demographic variables whose easily measurable and cognitive unobservable features (Maznevski, 1994; Milliken & Martins, 1996).

In this study, the four director characteristics are combined into a board diversity index as follows. For each board-year, the study calculates the fraction of female directors on the total strength of the board of directors (BOD_FEM), directors' age (AGE) is used for measuring the board members age, and director financial expertise (BOD_FEXP) was measured by using binary variable.

Lastly, the other board experience (BOD OBEX) was also measured by binary variable.

The study has to regulate each diversity determinant of variable mean, hence, that their scale was similar, and formerly equally-weight every aspect to measure the board diversity.

$$\text{BOD_DIVERSITY} = (\text{BOD_FEM}) + (\text{BOD_AGE}) + (\text{BOD_FEXP}) + (\text{BOD OBEX}).$$

3.5.6 Financial Performance

The present research includes financial performance as the dependent variable. Financial performance was evaluated with help of using Tobin's Q, ROA, ROE, and market share growth, as market- and therefore accounting created the 5 firm value evaluations, separately, for the following reasons.

First, Tobin's Q and market share growth were taken as the measure of market performance or long-term firm worth size, whereas ROA and ROE evaluate the accounting return/short-term financial position of profit (Gyapong, Monem, & Hu, 2016).

In a next section, ROA, as an evaluator of accounting returns, shows that previous or short-term financial position of the firm and demonstrates how professionally the firms take its assets and investing opportunities to create the income (Estélyi & Nisar, 2016).

3.5.7 Return on Assets

The ROA shows on average how much a firm earns from each unit invested in assets. The ROA is measured by dividing the net profit after subtracting interest and tax on the dollar value of firm total assets. The ratio is then multiplied by 100 to calculate the percentage.

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

3.5.8 Return on Equity

The return on equity is the ratio of earnings based on dollars invested by shareholders of the firm. The return on equity is measured by dividing the net earnings after tax on the total worth of shareholder equity and is then multiplied by 100.

$$ROE = \frac{Net\ Income}{Shareholder\ Equity}$$

3.5.9 Tobin's Q

Gyapong et al., (2016) suggest that Tobin's Q examines the wealth direction of both investor shares and creditors (firm value). Hence this system also recommends the market response by a security or asset value.

This value showing the external observations and prospects of an firm's upcoming or long-term cost (Thaler & Benartzi, 2004) and predicting the firm's ability to gain future cash flows and investment opportunities (Carter et al., 2010).

The ratio of total assets minus book value of equity plus market value (mv) of equity to total assets in a financial year.

Tobin's Q = (Total Assets – Book value of Equity + Market value of equity) / Total Assets.

$$\text{Tobin's Q} = (\text{Total Assets} - \text{Book value of Equity} + \text{Market value of equity}) / \text{Total Assets.}$$

3.6 Econometric Model

The economic models are applied to measure the influence of board diversity variables on the different measures of performance of non-financial firms.

To explore the hypotheses of the study, the first correlation analysis was performed, and then majorly the least square regression has been used. Regression analysis tests the statistical strength of the model as hypothesized (Watsham & Parramore, 1997).

The multiple regression analysis which is performed in the current study has the following general statistical equation form.

$$Y_i = \beta_o + \beta_i X_i + \varepsilon_i \quad (3.1)$$

In the above given general regression equation. I am observations from 1 to N. β_0 Is the equation intercept or can be said that this is the average line of the regression? Next β_i is the regression slope of the line. Lastly, ε_i is the stochastic term or is the unexplained portion of the regression equation.

The OLS is the regression valuation method east squares regression line of y on x is the line that makes the sum of the squares of the vertical distances of the data points from the line as small as possible” (Moore et. al, 2009). The OLS tries to shorten the unexplained portion of the equation as much as possible. This can be shown statistically in its general form as follows:

$$\sum_i^N = 1e_i^2 \quad (3.2)$$

When there is one independent variable the simple regression has been used. But in this study, the exogenous variables are more than one thus manifold regression analysis is used. The multiple regression equation can be shown as follows: In the above equation, Y is the indigenous variable. The β represents the regression coefficient of each independent variable. Further, X in the above-given equation is the explanatory variable from 1 to N. Lastly, ε is the error term of the equation which tells about that how much portion of the variation in the dependent variable is left from the explanation. Each involved coefficient shows the change in the endogenous variable due to a unit change in the exogenous variable and holding other variables in the equation remains constant (Studenmud 2011).

$$\begin{aligned} ROA_{i,t} = & \beta_0 + \beta_1 OBEX_{i,t} + \beta_2 FEX_{i,t} + \beta_3 Age_{i,t} + \beta_4 GEN_{i,t} + \beta_5 LEV_{i,t} + \\ & \beta_6 SIZE_{i,t} + \beta_7 OBEX_{i,t} * PC + \beta_8 FEX_{i,t} * PC + \beta_9 AGE_{i,t} * PC + \beta_{10} \\ & GEN_{i,t} * PC + \varepsilon_{i,t} \end{aligned} \quad (3.3)$$

In the above equation $ROA_{i,t}$ is the dependent variable which stands for return on assets. β_0 Is the equation intercept. From β_1 to β_6 be the coefficients of the explanatory variables and from β_7 to β_{10} be the interaction terms for the moderating role of political control. In the further, $OBEX_{i,t}$, which the other board

experience of the board members. Further, $FEX_{i,t}$ which represents the financial experience of the board members. Next, $Age_{i,t}$ the diversity measure for the board members age which is in the standard deviation form. The other diversity measure is in the above equation is $GEN_{i,t}$, the measure of diversity for how many of the total directors are female. In last, the equation hasan error term represented by $\varepsilon_{i,t}$.

$$\begin{aligned}
 ROE_{i,t} = & \beta_0 + \beta_1 OBEX_{i,t} + \beta_2 FEX_{i,t} + \beta_3 Age_{i,t} + \beta_4 GEN_{i,t} + \beta_5 LEV_{i,t} + \\
 & \beta_6 SIZE_{i,t} + \beta_7 OBEX_{i,t} * PC + \beta_8 FEX_{i,t} * PC + \beta_9 AGE_{i,t} * PC + \beta_{10} \\
 & GEN_{i,t} * PC + \varepsilon_{i,t}
 \end{aligned}
 \tag{3.4}$$

In the above equation $ROE_{i,t}$ is the dependent variable which stands for return on assets. β_0 Is the equation intercept. From β_1 to β_6 be the coefficients of the explanatory variables and from β_7 to β_{10} be the interaction terms for the moderating role of political control. In the further, $OBEX_{i,t}$, which the other board experience of the board members. Further, $FEX_{i,t}$ which represents the financial experience of the board members. Next, $Age_{i,t}$ the diversity measure for the board members age which is in the standard deviation form. The other diversity measure is in the above equation is $GEN_{i,t}$, the measure of diversity for how many of the total directors are female. In last, the equation hasan error term represented by $\varepsilon_{i,t}$.

$$\begin{aligned}
 TOBINQ_{i,t} = & \beta_0 + \beta_1 OBEX_{i,t} + \beta_2 FEX_{i,t} + \beta_3 Age_{i,t} + \beta_4 GEN_{i,t} + \beta_5 LEV_{i,t} + \\
 & \beta_6 SIZE_{i,t} + \beta_7 OBEX_{i,t} * PC + \beta_8 FEX_{i,t} * PC + \beta_9 AGE_{i,t} * PC + \beta_{10} \\
 & GEN_{i,t} * PC + \varepsilon_{i,t}
 \end{aligned}
 \tag{3.5}$$

In the above equation $TOBINQ_{i,t}$ is the dependent variable which stands for return on assets. β_0 Is the equation intercept. From β_1 to β_6 be the coefficients of the explanatory variables and from β_7 to β_{10} be the interaction terms for the moderating role of political control. In the further, $OBEX_{i,t}$, which the other board experience of the board members. Further, $FEX_{i,t}$ which represents the financial

experience of the board members. Next, $Age_{i,t}$ the diversity measure for the board members age which is in the standard deviation form. The other diversity measure is in the above equation is $GEN_{i,t}$, the measure of diversity for how many of the total directors are female. In last, the equation has an error term represented by $\varepsilon_{i,t}$.

TABLE 3.2: Measurement of Variables

Variable	Proxy	References
Demographic Diversity	Gender	Board diversity, firm risk, and corporate policies. (Gennaro BERNILE et al,2016)
	Age	Board diversity, firm risk, and corporate policies. (Gennaro BERNILE et al,2016)
Cognitive diversity	Financial Expertise	Board diversity, firm risk, and corporate policies. (Gennaro BERNILE et al,2016)
	Other Board Experience	Board diversity, firm risk, and corporate policies. (Gennaro BERNILE et al,2016)
Firm performance	Tobin Q	Gender Diversity and Firm Performance: Evidence from Dutch and Danish Boardrooms (Joana Marinova et al,2010)
	ROA	Gender Diversity and Firm Performance: Evidence from Dutch and Danish Boardrooms (Joana Marinova et al,2010)
	ROE	Gender Diversity and Firm Performance: Evidence from Dutch and Danish Boardrooms (Joana Marinova et al,2010)
Political Control	PC	Political control assume as dummy. 1 for firms who have almost one director from government sector. 0 for who have not any 1 director from government sector.
Control Variable		
Firm size	Log of total Asset	Board diversity, firm risk, and corporate policies. (Gennaro BERNILE et al,2016)
Financial leverage	Debt to equity ratio	Board diversity, firm risk, and corporate policies. (Gennaro BERNILE et al,2016)

Chapter 4

Results and Findings

4.1 Descriptive Statistics

The descriptive statistics in **Table 4.1**, describes that data about all variables of the research model from the period of 2010 to 2019. Descriptive statistics of financial expertise, other board experience, age, gender, and firm performance were separately explained. Data behavior were studied to explore its accuracy before performing other statistical tests. Descriptive statistics show the general behavior of the data, including the dependent, independent, moderator and control variable.

The descriptive statistics test shows a summary of data that include the average value of (mean), lower value in the datasheet (minimum), higher value in data set (maximum) and measure of dispersion (standard deviation). The mean value tells about an average of data, standard deviation tells about the spread and measure of dispersion in the value of the data from the mean in which values shows that how much data deviate from the average value of mean and mean has low due to the used as separately. Minimum and maximum tell about the current series of data. In table dependent variable firm profitability explained as how many means value its shows that average combination of ROA, ROE and Tobinafter calculation of these values in non-financial 64 firms in Pakistan.

Table also explained that return on assets volume minimum and maximum worth from all selected firms in which any firms hold maximum assets value and minimum capital and also shows that higher difference with standard deviation value. In

descriptive statistics table also explained the return on equity of 64 firms from 2010 to 2019. In this table, independent variables (demographic board diversity and cognitive board diversity) have been discussed regarding their mean, minimum and maximum strength of data and also explained that higher difference with standard deviation relying on 2010 to 2019. This table also explained that moderating variable existence in data with mean, minimum, maximum and standard deviation. Mean value tells about the average value with the non-financial firms between the time period from 2010 to 2019. Descriptive statistics also explained the lowest and highest level of political control in any year by 64 non-financial firms. In this table also described the average value of firm size (log of total assets), lower and higher value of total assets, and difference among thesis values have been explained with standard deviation in non-financial firms.

TABLE 4.1: Descriptive Statistics

	Mean	Maximum	Minimum	Std. Dev.	Observations
ROA	0.1043	0.2308	0.0276	0.062	640
ROE	0.2073	0.36	0.057	0.0916	640
TOBINQ	1.1952	2.0194	0.9339	0.3064	640
OBEX	1.6643	2.1429	1.25	0.3472	640
FEX	0.796	0.8889	0.6667	0.0647	640
AGE	54.6183	57.8571	51.8889	2.3383	640
GEN	0.1611	0.25	0	0.1061	640
LEV	0.5131	0.7407	0.2952	0.1388	640
SIZE	8.4309	8.766	8.1056	0.1978	640

Table 4.1, a description of the study variables has been explained. The mean value of ROA (return on assets) is (0.1043) it describes the average non-financial firms having a 10.43% return on assets with a 6.20% of standard deviation. The minimum value is (0.0276) and the maximum value (0.2308). The reason for higher fluctuation in minimum and maximum value of return on assets is up and down in firms' assets volume is tax pattern and many other internal and external issues in financial structure in the non-financing firm of Pakistan.

The mean value of ROE (return on equity) is (0.2073) it describes the average non-financial firms having a 20.73% return on equity with a 9.16% of standard deviation. The minimum value is (0.0570) and the maximum value (0.3600). The reason for higher fluctuation in minimum and maximum value of return on equity is up and down in firms' equity shareholding values due to the portfolio investment mindset in which shareholders invest or draw investment from the non-financing sector of Pakistan.

The mean value of Tobinq (market value of the company) is (1.1952) it describes the average non-financial firms having 19.52% Tobinq with a 30.64% of standard deviation. The minimum value is (0.9339) and the maximum value (2.0194). The reason for higher fluctuation in minimum and maximum value of Tobinq is up and down in debt financing and shareholder investment portfolio in the non-financing sector of Pakistan.

The average range of other board experience (OBEX) is 1.6643 which means average non-financial firms having 66.43% other board experience in the firm and the standard deviation is 0.3472., minimum value 1.2500 and maximum value 2.1429. The financial expertisemeansthe value is 0.7960 which means average non-financial firms having 79% financial experience members in the firm and the standard deviation is 0.0647, minimum value 0.6667 and maximum 0.8889.

The demographic factor age meansthe value is 54.6183 which means average non-financial firms having 54% members are near to fifty years and the standard deviation is 2.3383, minimum value 51.8889 and maximum 57.8571. The sample mean value of the demographic variable gender (GEN) is 0.1611 which means average non-financial firms having a 16.11% genderscenario in the firm and the standard deviation is 0.1661, the minimum value is zero and maximum 0.2500.

The average range of leverage (LEV) is 0.5131 which means that average value of non-financial firms having 51.31% total leverage in the board and the standard deviation is 0.1388, minimum value 0.2952 and maximum value 0.7407. The average range of firm size (SIZE) is 8.4309 which means that the average value of non-financial firms having 8.43% independent directors on the board and the standard deviation is 0.1978, minimum value 8.1056 and maximum value 8.1066.

4.2 Correlation Analysis

Correlation analysis examined impact of demographic board diversity and cognitive board diversity on firm performance with the moderating role of political control. This study also explore the potential multicollinearity problem. Multicollinearity problem checks with the formula ($VIF=1/1- \text{Adjusted R-squared}$).According to the required threshold value of VIF which is less than 3, so according to the standard all three random effect model R squareand adjusted R square of VIF less than 10 so there was no multicollinearity problem in the research model.

Table: 4.2, examined the correlation analysis among all independent variables including demographic and cognitive board diversity and dependent variables such as firm performance. To check the strength of relationships among variables with the direction of positive and negative measures through correlation analysis. The range for correlation analysis is (-1 to +1) which shows the correlation between variables. If value 0 then value shows that did not correlation exist, if (+1) positive then shows that positive relationship among variables. These values (+1, -1) also explores the perfect correlation between independent and dependent variables. The findings of the correlation analysis given in showed in **Table: 4.2**.

TABLE 4.2: Correlation Analysis

	ROA	ROE	OBEX	FEX	AGE	GEN	LEV	SIZE
ROA	1							
ROE	0.885	1						
OBEX	-0.227	0.212	1					
FEX	-0.168	0.265	0.895	1				
AGE	0.002	0.436	0.836	0.833	1			
GEN	0.415	0.022	-0.758	-0.632	-0.802	1		
LEV	-0.665	-0.265	0.778	0.766	0.72	-0.83	1	
SIZE	0.171	0.378	0.34	0.542	0.538	-0.021	0.321	1

Table 4.2, correlation analysis analyzed no multicollinearity issues in panel data of 10 years non-financial sector because values relay below the 0.7 correlation outcomes described the significant correlations all the values has below 0.7.

Table: 4.2, correlation analysis indicates that return on equity (ROE) coefficient value (0.885) is positively linked with return on assets (ROA). The high correlation

shows that both indicators were dependent variables and measurement of these both mostly similar data so these were highly correlated each other.

The coefficient value of other board experience (OBEX) -0.227 indicate a negative correlation. The value shows a negative correlation among other board experiences and returns on assets, due to the other board members having minimum experience and return on assets in different terms compare to OBEX. The coefficient value 0.212 shows a positive correlation among other board experience and return on equity. Most firms lower concern on equity financing and rely on debt financing due to the minimize the tax net so both variables are positively correlated.

The financial expertise (FEX) coefficient value -0.168 described a significant & negative connection between financial expertise and return on assets. In the next coefficient value of (FEX) financial expertise 0.265 which shows that financial expertise significantly/positively linked with return on equity, the coefficient value of (FEX) 0.895 shows a significant & positive connection among financial expertise and other board experience of directors.

In the next section age demographic variable (AGE) coefficient value 0.002 described that significant & positive link between age and return on assets. The coefficient value 0.436 explains that age as a demographic variable significantly & positively correlated with return on equity. The age as demographic variable (AGE) coefficient value 0.836 described that significant & positive link among age and other board experience. The coefficient value 0.833 explains that age as a demographic variable significantly & positively correlated with financial expertise.

In this section gender as demographic variable (GEN) coefficient value, 0.415 explained that significant & positive link between gender and return on assets. The coefficient value 0.022 explains that gender as a demographic variable significantly & positively correlated with return on equity. In the context of gender demographic variable (GEN) coefficient value, -0.758 described that significant & negative link among gender and other board experience. The coefficient value -0.632 explains that gender as a demographic variable significantly & negatively correlated with financial expertise. The coefficient value -0.802 explains that gender as a demographic variable significantly & negatively correlated with age.

In this -66.5% leverage as control variable (LEV) coefficient value, -0.665 explained the significant & negative link between leverage and return on assets. It means if increase leverage then returns on the asset will be decreased, the relation shows an inverse association among both variables. The coefficient value of (LEV) -0.265 explains that leverage significantly & negatively correlated with return on equity. In the sense of leverage as control variable (LEV) coefficient value, 0.778 explained that significant & positive link among leverage and other board of experience, it shows that both variables move the same direction. The coefficient value 0.766 explains that leverage significantly & positively correlated with financial expertise. The coefficient value of (LEV) 0.720 explains that leverage is significantly & positively highly correlated with age. The coefficient value -0.830 explains that leverage significantly & negatively correlated with gender as a demographic variable, the value shows the inverse relationship between both variables.

In this section firm size as control variable (SIZE) coefficient value, 0.171 explained that significant & positive link between firm size and return on assets. The coefficient value of firm size (SIZE) 0.378 explains that leverage significantly & positively correlated with return on equity. In the sense of firm size as control variable (SIZE) coefficient value 0.340 explained that significant & positive link among firm size and other board experience, it shows that both variable move same direction. The coefficient value (SIZE) 0.542 explains that firm size significantly & positively correlated with financial expertise. The coefficient value of (SIZE) 0.538 explains that firm size significantly & positively highly correlated with age. The coefficient value -0.021 explains that firm size significantly & negatively correlated with gender as a demographic variable, the value shows the inverse relationship between both variables. The coefficient value 0.321 explains that firm size significantly & positively correlated with leverage, the value shows that relationship in which variable move the same direction.

4.3 Panel Regression Analysis

In panel regression analysis has been described the impact of demographic and cognitive board diversity on firm performance with the moderating role of political

control: evidence from Pakistan. Therefore, a study examined the direct and indirect effect of independent variables other board experience, financial expertise, age and gender.

The study has been found a direct significant positive or negative role of firm size, leverage, other board experience, financial expertise, age and gender as a demographic variable in the non-financing industry of Pakistan. In the interaction term political control, research work found that combine effect of political control plus independent variables individually. In which study have to check the moderating role of political control among the independent variables and dependent variables. Regarding the direction of the likelihood ratio test common effect model was suitable for the final interpretation. According to Hausman test and redundant test suggested the random effect model was more suitable for the final interpretation compares to the fixed and common effect model.

The random effect model R-square and p values were most significant and accepted range then the random effect model was finalized for further analysis but if fixed and random model not varying in accepted range then the common effect model was applied.

4.3.1 Demographic, Cognitive Board Diversity and Firm Performance

4.3.1.1 Random Effect Model for Return on Assets

TABLE 4.3: Correlated Random Effects-Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000	12	1.00

In the above 4.3 table shows that cross-section significance value greater than 0.05 its mean study has to apply a random effect model in which we check the impact of independent variables on return on assets.

TABLE 4.4: Likelihood Ratio Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.018	(63,56)	1.00
Cross-section Chi-square	1.29231	63	1.00

In the above 4.4 table shows that Chi-square significance value greater than 0.05 its mean study has to apply common effect model for the analysis, but the study finalizes the random effect model in which we check the impact of independent variables on return on assets and it is more appropriate compare to common effect model. For analysis common effect model is considered good model , but in this model there is no comparison between intercept and cross section. The assumption made in common effect model is very problematic to happen which leads to inconsistency and reability of slope of coefficient of the variables. Another disadvantage of the common effect model that it does not indicate fixed and common effect in the panel data. **Table: 4.5**, explains the impact of demographic and cognitive board diversity on firm performance evidence from Pakistan. The first section shows the direct impact of other board experience, financial expertise, age and gender on return on assets (ROA). In the next section, the study has to explore the controlling role of firm size and leverage on return on assets.

TABLE 4.5: Random Effect Model for Return on Assets

Dependent Variable: ROA				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.1719	0.0212	-55.2415	0.00
OBEX	-0.0421	0.0038	-10.9881	000
FEX	-0.1567	0.0255	-6.1542	0.00
AGE	0.0712	0.0021	33.6764	0.00
GEN	1.163	0.0496	23.4287	0.00
LEV	-0.1489	0.0218	-6.8347	0.00
SIZE	-0.3001	0.014	-21.4641	0.00
SS	0	0.0009	-0.0316	0.9748
R-squared	0.9712	Mean dependent var		0.1043
Adjusted R-squared	0.9709	S.D. dependent var		0.062
S.E. of regression	0.0106	Sum squared resid		0.0707
Prob(F-statistic)	0.00	Durbin-Watson stat		1.4892

Note: The table depicts the results for the linear panel data regression model using the firms and 10 years random effects. The dependent variable is the (ROA) return on assets and the independent variables are cognitive board diversity and demographic variable. In further statistically significant level are 1%, 5%, and 10 percent respectively.

Table 4.5, the result has been explore about return on assets and cognitive board diversity and demographic including controlling role of firm size and leverage while using the panel regression analysis with a random effect model. A linear panel data model with the supporting of non-financial firm's random effect model to examine the results were used. All the coefficient of independent and controlling variable including control variables were mostly significant association with the dependent variable (ROA), except sectorial (SS) dummy variables who was insignificant. The value of $R^2=0.9712$ shows that 97% fluctuation in firm return on assets due to the independent variable demographic and cognitive board diversity and control variable leverage, firm size respectively. In other word, s firms' return on assets (ROA) is 97% described by the state independent variables collectively. According to the outcome of the random effect model were mostly p values were significant so in the study has been applied random effect model for further discussion.

H1: There is a significant/positive association between cognitive board diversity and firm performance.

According to the H1, in the above table coefficient value of (OBEX) other board experience is ($\beta=-0.0421$ significant at the level of $p<0.000$). These values show that significant negative influence of other board experience on return on assets. The coefficient value of (FEX) financial expertise is ($\beta= -0.1567$ significant at the level of $p<0.000$). The value shows that financial expertise significantly negative impact on the return on assets of the firm performance. According to the coefficient and significance level hypothesis, 1 has been accepted, in which other board experience and financial expertise mostly significant relation with (ROA) who is a measure of dependent variable firm performance. It mean cognitive board diversity has a significant/positive influence on firm performance.

H2: There is a significant/positive association between demographic (age, gender) and firm performance.

The coefficient value of (AGE) is ($\beta=0.0712$ significant at the level of $p<0.000$), so we can say that age significantly positively influences return on assets. The coefficient value of (GENDER) is ($\beta=1.1630$ significant at the level of $p<0.000$), so we can say that age significant positive influence on return on assets. In next section study also check the control variable effect in which the coefficient value of (LEV) is ($\beta=-0.1489$ significant at the level of $p<0.000$), so, therefore, value shows that leverage significant negative influence on return on assets.

The coefficient value of (SIZE) is ($\beta=-0.3001$. significant at the level of $p<0.000$), hence the value shows that firm size significantly negatively influenced the return on assets. According to the coefficient and significance level hypothesis 2 has been accepted, in which demographic variable age and gender are significantly linked with (ROA) who is a measure of dependent variable firm performance. Its mean demographic variable has a significant/positive influence on firm performance.

4.3.1.2 Random Effect Model for Return on Equity

TABLE 4.6: Correlated Random Effects-Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0	12	1.00

In the above 4.6 table shows that cross-section significance value greater than 0.05 its mean study has to apply a random effect model in which we check the impact of independent variables on return on equity.

TABLE 4.7: Likelihood Ratio Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.0241	-63,564	1.00
Cross-section Chi-square	1.72648	63	1.00

In the above 4.7 table shows that cross-section significance value greater than 0.05 its mean study should apply a common effect model in which we check the impact of independent variables on return on equity but the study finalizes the random effect model because it is a more appropriate model compare to common effect model.

Table: 4.8, explains the impact of demographic and cognitive board diversity on firm performance evidence from Pakistan. The first section shows the direct impact of other board experience, financial expertise, age and gender on return on equity (ROE). In the next section, the study has to explore the controlling role of firm size and leverage on return on equity.

TABLE 4.8: Random Effect Model for Return on Equity

Dependent Variable: ROE				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.1672	0.045	-48.1322	0.000
OBEX	-0.0159	0.0081	-1.961	0.0503
FEX	0.1214	0.054	2.2468	0.025
AGE	0.0885	0.0045	19.7198	0.000
GEN	1.1476	0.1054	10.8917	0.000
LEV	-0.3973	0.0462	-8.5918	0.000
SIZE	-0.2978	0.0297	-10.0378	0.000
SS	0	0.0019	0.0009	0.9992
R-squared	0.9405633	Mean dependent var		0.207268
Adjusted squared	R- 0.939905	S.D. dependent var		0.091582
S.E. of regression	0.0224507	Sum squared resid		0.318549
Prob(F-statistic)	0	Durbin-Watson stat		1.26676

Note: The table depicts the results for the linear panel data regression model using the firms and 10 years random effects. The dependent variable is the (ROE) return on equity and the independent variables are cognitive board diversity and demographic variable. In further statistically significant level are 1%, 5%, and 10 percent respectively.

Table 4.8, the result has been explored about return on equity and cognitive board diversity and demographic including controlling role of firm size and leverage while using the panel regression analysis with a random effect model. A linear panel data model with support of a non-financial firm's random effect model is to examine the results were reported in the table. All the coefficient of independent and controlling variable including control variables were mostly significant association with the dependent variable (ROE), except sectorial (SS) dummy variables who was insignificant.

The value of $R^2=0.9405$ shows a 94% fluctuation in firm return on equity due to the independent variable demographic and cognitive board diversity and control variable leverage, firm size respectively. In other words, firms' return on equity (ROE) is 94% described by the state independent variables collectively. According to the outcome of the random effect model were mostly p values were significant so the study has been applied the random effect model for further discussion.

H1: There is a significant/positive association between cognitive board diversity and firm performance.

According to the H1, in the above table coefficient value of (OBEX) other board experience is ($\beta=-0.0159$ significant at the level of $p<0.0503$). These values show that significant negative influence of other board experience on return on equity. The coefficient value of (FEX) financial expertise is ($\beta= 0.1214$ significant at the level of $p<0.0250$). The value shows that financial expertise significantly positive impacts on return on equity of the firm performance. According to the coefficient and significance level hypothesis, 1 has been accepted, in which other board experience and financial expertise mostly significant relation with (ROE) who is a measure of dependent variable firm performance. It mean cognitive board diversity has a significant/positive influence on firm performance.

H2: There is a significant/positive association between demographic (age, gender) and firm performance.

The coefficient value of (AGE) is ($\beta=0.0885$ significant at the level of $p<0.000$), so we can say that age significantly positively influence on return on equity. The coefficient value of (GENDER) is ($\beta=1.1476$ significant at the level of $p<0.000$),

so we can say that age significant positive influence on return on equity. In next section study also check the control variable effect in which the coefficient value of (LEV) is ($\beta=-0.3973$ significant at the level of $p<0.000$), so, therefore, value shows that leverage significant negative influence on return on equity. The coefficient value of (SIZE) is ($\beta=-0.2978$. significant at the level of $p<0.000$), however, the value shows that firm size significantly negatively influenced the return on equity. According to the coefficient and significance level hypothesis 2 has been accepted, in which demographic variable age and gender are significantly linked with (ROE) who is a measure of dependent variable firm performance. It means the demographic variable has a significant/positive influence on firm performance.

4.3.1.3 Random Effect Model for Tobin-Q

TABLE 4.9: Correlated Random Effects-Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0	12	1.00

In the above 4.9 table shows that cross-section significance value greater than 0.05 its mean study has to apply a random effect model in which we check the impact of independent variables on return on Tobin-q.

TABLE 4.10: Likelihood Ratio Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.0235	-63,564	1.00
Cross-section Chi-square	1.6801	63	1.00

In the above 4.10 table shows that cross-section significance value greater than 0.05 its mean study should apply a common effect model in which we check the impact of independent variables on return on Tobinq but the study finalizes the random effect model because it is a more appropriate model compare to common effect model.

Table: 4.11, explains the impact of demographic and cognitive board diversity on firm performance evidence from Pakistan. The first section shows the direct impact of other board experience, financial expertise, age and gender on (Tobin-Q). In the next section, the study has to explore the controlling role of firm size and leverage on (Tobin-Q).

TABLE 4.11: Random Effect Model for Tobin-Q

Dependent Variable: TOBINQ				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.2441	0.1829	28.6758	0.000
OBEX	0.9475	0.033	28.716	0.000
FEX	-3.4182	0.2194	-15.5764	0.000
AGE	-0.0855	0.0182	-4.6921	0.000
GEN	-3.5525	0.4279	-8.3016	0.000
LEV	-3.5975	0.1878	-19.1566	0.000
SIZE	0.4964	0.1205	4.1191	0.000
SS	0.0002	0.0076	0.0299	0.976
R-squared	0.9124	Mean dependent var		1.1952
Adjusted R-squared	0.91143	S.D. dependent var		0.3064
S.E. of regression	0.09118	Sum squared resid		5.2549
Prob(F-statistic)	0.000	0.000	Durbin-Watson stat	1.3365

Note: The table depicts the results for the linear panel data regression model using the firms and 10 years random effects. The dependent variable is the Tobinq and the independent variables are cognitive board diversity and demographic variable. In further statistically significant level are 1%, 5%, and 10 percent respectively.

Table 4.11, the result has been explored about Tobinq and cognitive board diversity and demographic including controlling role of firm size and leverage while using the panel regression analysis with a random effect model. A linear panel data model with support of a non-financial firm's random effect model is to examine the resultswere reported in the table.All the coefficient of independent and controlling variable including control variables were mostly significant association with

dependent variable (Tobinq) market value of the firm divided by total asset value, except sectorial (SS) dummy variables who was insignificant. The value of $R^2 = 0.9124$ shows that 91% fluctuation in firm Tobinq due to the independent variable demographic and cognitive board diversity and control variable leverage, firm size respectively. In other words firms, Tobinq (firm market value divided by total assets) is 91% described by the state independent variables collectively. According to the outcome of the random effect model were mostly p values were significant so the study has been applied the random effect model for further discussion.

H1: There is a significant/positive association between cognitive board diversity and firm performance.

According to the H1, in the above table coefficient value of (OBEX) other board experience is ($\beta = 9475$ significant at the level of $p < 0.000$). These values show that significant positive influence of other board experience on Tobin-q. The coefficient value of (FEX) financial expertise is ($\beta = -3.4182$ significant at the level of $p < 0.000$). The value shows that financial expertise significantly positive impacts Tobin-q of the firm performance. According to the coefficient and significance level hypothesis, 1 has been accepted, in which other board experience and financial expertise mostly significant relation with (Tobinq) who is a measure of dependent variable firm performance. Both the measure of independent variable significantly related to Tobin-q, so its mean cognitive board diversity has a significant/positive influence on firm performance.

H2: There is a significant/positive association between demographic (age, gender) and firm performance.

The coefficient value of (AGE) is ($\beta = -0.0855$ significant at the level of $p < 0.000$), so we can say that age significantly negatively influenced Tobin-q. The coefficient value of (GENDER) is ($\beta = -3.5525$ significant at the level of $p < 0.000$), so we can say that age significantly negatively influence Tobin-q. In next section study also check the control variable effect in which the coefficient value of (LEV) is ($\beta = -3.5975$ significant at the level of $p < 0.000$), so, therefore, value shows that leverage significant negative influence on Tobin-q. The coefficient value of (SIZE) is ($\beta = 0.4964$. significant at the level of $p < 0.000$), however, the value shows that

firm size significantly positively influenced the Tobin-q. According to the coefficient and significance level hypothesis, 2 has been accepted, in which demographic variable age and gender are significantly linked with (Tobinq) who is a measure of dependent variable firm performance. It means the demographic variable has a significant influence on firm performance.

4.3.2 Moderating Role of Political Control among Independent and Dependent Variables

4.3.2.1 Return and Assets and Political Control as Moderator

Table: 4.12, explains the impact of demographic and cognitive board diversity on firm performance with moderating role of political control evidence from Pakistan. The first section shows the direct impact of other board experience, financial expertise, age and gender on (ROA). In the next section, the study has to explore the moderating role of political control on return on assets.

TABLE 4.12: Political Control Moderating Role for Return on Assets

Dependent Variable: ROA				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.1728	0.0213	-55.1282	0.0000
OBEX	-0.0421	0.0038	-10.9777	0.0000
FEX	-0.1566	0.0255	-6.1384	0.0000
AGE	0.0712	0.0021	33.5925	0.0000
GEN	1.1626	0.0498	23.3579	0.0000
LEV	-0.1493	0.0218	-6.8327	0.0000
SIZE	-0.2999	0.014	-21.4003	0.0000
PC	-0.0042	0.0115	-0.3676	0.7133
SS	0.0001	0.0009	0.078	0.9378
PC*OBEX	-0.0006	0.0006	-0.9896	0.3228
PC*FEX	0.0009	0.0029	0.3146	0.7532
PC*AGE	0.0001	0.0002	0.4543	0.6498
PC*GEN	-0.004	0.006	-0.6618	0.5083
R-squared	0.9713	Mean dependent var		0.1043
Adjusted R-squared	0.9708	S.D. dependent var		0.062
S.E. of regression	0.0106	Sum squared resid		0.0705
		Durbin-Watson stat		1.4872
Prob(F-statistic)	0.000			

Table 4.12, the above study model describes the return on assets and cognitive board diversity and demographic variables with moderating role of political control including control effect of firm size and leverage while using the panel regression analysis with a random effect model. A linear panel data model with support of a non-financial firm's random effect model is to examine the results were reported in the table. All the coefficient of independent and moderating variable including control variables were mostly significantly linked with the dependent variable (ROA), except sectorial (SS) dummy variables who was insignificant. The value of $R^2 = 0.9708$ shows that 97% fluctuation in firm return on assets due to the independent variable demographic and cognitive board diversity and control variable leverage, firm size respectively. In other words, firms' return on assets (ROA) is 97% described by the state independent variables collectively. According to the outcome of the random effect model were mostly p values were significant so the study has been applied random effect model for further discussion hypothesis.

H3: Political control significantly moderates the relationship between board diversity and firm performance.

According to the above model, every independent variable measure significantly influences the dependent variable. So, its mean independent variable measure (OBEX, FEX, AGE, GEN) directly influence the dependent variable (ROA). In the next section, the coefficient value of (PC*OBEX) is insignificant at the level of ($p > 0.000$). According to this value political control doesn't play a moderating role among other board experience and return on assets. The coefficient value of (PC*FEX) is insignificant in which ($p > 0.000$). According to the insignificant value, political control doesn't play a moderating role between financial expertise and return on assets. So, there is no moderation effect of political control between cognitive board diversity and firm performance measure (ROA).

H3: Political control significantly moderates the relationship between demographic (age, gender) and firm performance.

In next, the coefficient value of (PC*AGE) is insignificant at the level of ($p > 0.000$). According to this value political control doesn't play a moderating role between age as a demographic variable and return on assets. The coefficient value of

(PC*GENDER) is insignificant in which ($p > 0.000$). According to the insignificant value, political control doesn't play a moderating role between gender and return on assets. However, hypothesis 3 has been rejected, because political control as a moderation role can't fulfill the basic requirement of a significant level. Therefore, there is no moderation impact of political control between demographic variable age, gender and firm performance measure (ROA).

4.3.3 Return and Equity and Political Control as Moderator

Table: 4.13, explains the impact of demographic and cognitive board diversity on firm performance with moderating role of political control evidence from Pakistan. The first section shows the direct impact of other board experience, financial expertise, age and gender on (ROE). In the next section, the study has to explore the moderating role of political control on return on equity.

TABLE 4.13: Political Control Moderating Role for Return on Equity

Dependent Variable: ROE				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.1687	0.0451	-48.0695	0.0000
OBEX	-0.016	0.0081	-1.971	0.0492
FEX	0.1222	0.0541	2.2582	0.0243
AGE	0.0884	0.0045	19.6709	0.0000
GEN	1.1446	0.1056	10.8436	0.0000
LEV	-0.3992	0.0463	-8.6162	0.0000
SIZE	-0.2971	0.0297	-9.9952	0.0000
PC1	-0.006	0.0245	-0.2465	0.8054
SS	0.0002	0.0019	0.1152	0.9083
PC_OBEX	-0.0009	0.0012	-0.7749	0.4387
PC_FEX	0.0054	0.0062	0.8822	0.378
PC_AGE	0.0001	0.0005	0.2362	0.8134
PC_GEN	-0.0081	0.0127	-0.6329	0.527
R-squared	0.9408	Mean dependent var		0.2073
Adjusted R-squared	0.9397	S.D. dependent var		0.0916
S.E. of regression	0.0225	Sum squared resid		0.3173
Prob(F-statistic)	0	Durbin-Watson stat		1.2635

Table 4.13, the above study model describes the return on equity and cognitive board diversity and demographic variable with moderating role of political control including control effect of firm size and leverage while using the panel regression analysis with a random effect model. A linear panel data model with support of a non-financial firm's random effect model is to examine the results were reported in the table. All the coefficient of independent and moderating variable including control variables were mostly significantly linked with the dependent variable (ROE), except sectorial (SS) dummy variables who was insignificant. The value of $R^2 = 0.9402$ shows a 94% fluctuation in firm return on equity due to the independent variable demographic and cognitive board diversity and control variable leverage, firm size respectively. However, firms' return on equity (ROE) is 94% described by the state independent variables collectively. According to the outcome of the random effect model were mostly p values were significant so the study has been applied random effect model for further discussion hypothesis.

H3: Political control significantly moderates the relationship between board diversity and firm performance.

According to the above model mostly independent variable measure significantly influences the dependent variable. So, its mean independent variable measure (OBEX, FEX, AGE, GEN) directly influence the dependent variable (ROE). In the next section, the coefficient value of (PC*OBEX) is insignificant at the level of ($p > 0.000$). According to this value political control doesn't play a moderating role among other board experience and return on equity. The coefficient value of (PC*FEX) is insignificant in which ($p > 0.000$). According to the insignificant value, political control doesn't play a moderating role between financial expertise and return on equity (ROE). So, there is no moderation effect of political control between cognitive board diversity and firm performance measure (ROE).

H3: Political control significantly moderates the relationship between demographic (age, gender) and firm performance.

Next, the coefficient value of (PC*AGE) is insignificant at the level of ($p > 0.000$). According to this value political control doesn't play a moderating role between age as a demographic variable and return on equity. The coefficient value of

(PC*GENDER) is insignificant in which ($p > 0.000$). According to the insignificant value, political control doesn't play a moderating role between gender and return on equity. However, hypothesis 3 has been rejected, because political control as a moderation role can't fulfill the basic requirement of a significant level. Therefore, there is no moderation impact of political control between demographic variable age, gender and firm performance measure (ROE).

4.3.3.1 TobinQ and Political Control as Moderator

Table: 4.14, explains the impact of demographic and cognitive board diversity on firm performance with moderating role of political control evidence from Pakistan. The first section shows the direct impact of other board experience, financial expertise, age and gender on (Tobinq). In the next section, the study has to explore the moderating role of political control on Tobin-q.

TABLE 4.14: Political Control Moderating Role for Tobin-Q

Dependent Variable: TOBINQ				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.2486	0.1833	28.6395	0.0000
OBEX	0.9478	0.033	28.6858	0.0000
FEX	-3.4222	0.2198	-15.572	0.0000
AGE	-0.0851	0.0183	-4.6601	0.0000
GEN	-3.5372	0.4288	-8.2499	0.0000
LEV	-3.5883	0.1882	-19.066	0.0000
SIZE	0.4925	0.1207	4.0794	0.0001
PC1	0.0255	0.0994	0.2567	0.7975
SS	-0.0005	0.0078	-0.0637	0.9493
PC_OBEX	0.0027	0.005	0.543	0.5873
PC_FEX	-0.0256	0.025	-1.0206	0.3078
PC_AGE	-0.0004	0.0019	-0.1966	0.8442
PC_GEN	0.0323	0.0518	0.6231	0.5334
R-squared	0.9127	Mean dependent var		1.1952
Adjusted R-squared	0.9111	S.D. dependent var		0.3064
S.E. of regression	0.0914	Sum squared resid		5.2353
Prob(F-statistic)	0.0000	Durbin-Watson stat		1.3341

Table 4.14, the above model of the study describes the TobinQ and cognitive board diversity and demographic variables with moderating role of political control including control effect of firm size and leverage while using the panel regression analysis with a random effect model. A linear panel data model with support of a non-financial firm's random effect model is to examine the results were reported in the table. All the coefficient of independent and moderating variable including control variables were mostly significantly linked with the dependent variable (Tobinq), except sectorial (SS) dummy variables who was insignificant. The value of $R^2 = 0.9127$ shows that 92% fluctuation in firm Tobinq due to the independent variable demographic and cognitive board diversity and control variable leverage, firm size respectively. However, firms Tobinq is 92% described by the state independent variables collectively. According to the outcome of the random effect model p values were mostly significant so the study has been applied the random effect model for further discussion hypothesis.

H3: Political control significantly moderates the relationship between board diversity and firm performance.

According to the above model mostly independent variable measure significantly influences the dependent variable. So, its mean independent variable measure (OBEX, FEX, AGE, GEN) directly influence the dependent variable (Tobinq). In the next section, the coefficient value of (PC*OBEX) is insignificant at the level of ($p > 0.000$). According to this value political control doesn't play a moderating role among other board experience and return on equity. The coefficient value of (PC*FEX) is insignificant in which ($p > 0.000$). According to the insignificant value, political control doesn't play a moderating role between financial expertise and return on equity (ROE). So, there is no moderation effect of political control between cognitive board diversity and firm performance measure (ROE).

H3: Political control significantly moderates the relationship between demographic (age, gender) and firm performance.

Next, the coefficient value of (PC*AGE) is insignificant at the level of ($p > 0.000$). According to this value political control doesn't play a moderating role between age as a demographic variable and Tobin-Q. The coefficient value of (PC*GENDER)

is insignificant in which ($p > 0.000$). According to the insignificant value, political control doesn't play a moderating role between gender and TobinQ. However, hypothesis 3 has been rejected, because political control as a moderation role can't fulfill the basic requirement of a significant level. Therefore, there is no moderation impact of political control between demographic variable age, gender and firm performance measure (Tobin-Q).

Chapter 5

Discussion and Conclusion

5.1 Discussion

The study determines the impact of demographic and cognitive board diversity on firm performance with the moderating role of political control in Pakistan as an emerging economy during 2010 to 2019. This study analyze that link among demographic, cognitive board diversity and firm performance has been considering the valuable theme in the area of corporate governance especially in firm performance with the help of literature support and empirical evidence. So, the is to analyze either cognitive board diversity and demographic influence the firm performance in the non-financing sector. This research also examined how non-financial firms were going to overcome specific issues related to board settings and firm profitability measures.

In the current study first objective is to investigate the relationship between board cognitive diversity and firm performance and the second objective is to examine the relationship between board demographic diversity and firm performance. The study also explores the moderating role of political control among board cognitive diversity and firm performance and the number four objective were to examine the moderating role of political control among board demographic diversity and firm performance.

The current study try to analyze confirmation of outcome and analysis accuracy, also included two control variables; leverage and firm size but in our model, both

the leverage and firm size were mostly fit for analysis. In this study panel data analysis technique have been applied, so the statistical and fundamental conclusion of this research work showed a significant connection among cognitive board diversity, demographic, political control and firm performance.

In this study panel regression model were applied: in which study was finalized applied Housman and likelihood ratio test, so these tests suggest random fixed effect model was most suitable for further interpretation and discussion study were applied random effect model for all further interpretations.

In the first model of this study, it is found the direct impact of cognitive board diversity on return on assets and the second objective in which we explore the impact of demographic variables like age and gender on firm performance. So, it explore to found that value of other board experience significantly linked with return on assets. With second independent variable found that the value of financial expertise was also significantly linked with return on assets. With third independent variable, the value of age as demographic found that significantly/positively linked with return on assets. With the gender also significant and positive influence on return on assets. So, our research found a significant connection among cognitive board diversity, demographic variables on firm performance because all independent variables significantly influence on a measure of firm performance such as return on assets. These results supported the first two objectives.

H1: There is a positive impact of demographic (age, gender) board diversity on firm performance.

H2: There is a positive impact of cognitive board diversity on firm performance.

Table 4.5, return on equity is the dependent variable in which the study examines the impact of cognitive board diversity on return on equity findings. Other board experience (OBEX) significantly and negatively influences the return on equity. Next the value of financial expertise (FEX) found that significantly linked with return on equity. Financial expertise significantly positive influence on return on equity. In the next face research analysis has been explored the third independent variable age as a demographic variable (AGE) also found that significant positive

linked with return on equity. The demographic gender (GEN) found that significantly/positively linked with return on equity. So according to this value shows a direct connection between demographic variables and return on equity. According to our findings recommends that non-financial firms should set the policies to set the equity with the settlement of age and gender diversification. The above model 2 shows that cognitive board diversity and demographic variables significantly and positively influence the return on equity who is a measure for firm performance. So, the hypothesis 1 and 2 is approved.

In the third model of table 4.6, Tobinq (profitability margin) is the dependent variable in which the study examines the impact of cognitive board diversity on Tobin-Q findings. Other board experience (OBEX) significantly and positively influences the Tobin-Q. Next, the value of financial expertise (FEX) found a significant and negative links with Tobin-Q. Financial expertise significantly negative influence on firm performance. In the next face research analysis has been explored the third independent variable age as a demographic variable (AGE) also found that significantly negatively linked with Tobin-Q. The demographic gender (GEN) found that significantly/negatively linked with Tobin-Q. So according to this value shows that direct connection among demographic variables and firm performance measure Tobin-Q. According to findings, non-financial firms should set the policies to manage the overall profitability margin with the settlement of age and gender diversification. The results shows that cognitive board diversity and demographic variables significantly and positively influence the Tobinq who is a measure for firm performance.

The study also examined the moderation effect through interaction term political control. First of all, we applied the moderation analysis among other board experience and return on assets. Our study analyzed the value of interaction term (PC*OBEX) insignificant association among other board experiences and return on assets. So political control did not moderate this linkage among other board experience and return on assets. The second interaction term (PC*FEX) found that insignificant association between financial expertise and return on assets. So, according to the outcomes study found that political control moderated the association between financial expertise and return on assets. The second interaction

term (PC*AGE) found that insignificant association between age and return on assets. So, according to the outcomes study found that political control moderated the association between age and return on assets. The second interaction term (PC*GEN) found that insignificant association between gender and return on assets. So, according to the outcomes study found that political control moderated the association between gender and return on assets. These values show that foreign ownership doesn't alter the relationship among cognitive board diversity, demographic variables and firm performance measures.

The result also examine the moderation effect through interaction term political control. First of all, we applied the moderation effect among other board experience and return on assets. Our study analyzed the value of interaction term (PC*OBEX) insignificant association among other board experiences and return on equity. So political control did not moderate this linkage among other board experience and return on equity. The second interaction term (PC*FEX) found that insignificant association between financial expertise and return on equity. So, according to the outcomes study found that political control moderated the association between financial expertise and return on equity. The second interaction term (PC*AGE) found that insignificant association between age and return on equity. So, according to the outcomes study found that political control moderated the association between age and return on equity. The second interaction term (PC*GEN) found that insignificant association between gender and return on equity. So, according to the outcomes study found that political control moderated the association between gender and return on equity. These values show that foreign ownership doesn't alter the relationship among cognitive board diversity, demographic variables and firm performance measures.

The sixth model study also examined the moderation effect through interaction term political control. First of all, we applied the moderation effect among other board experience and return on Tobin-Q. Our study analyzed the value of interaction term (PC*OBEX) insignificant association among other board experiences and Tobin-Q. So political control did not moderate this linkage among other board experiences and Tobin-Q. The second interaction term (PC*FEX) found that insignificant association among financial expertise and Tobin-Q. So, according to

the outcomes study found that political control moderated the association among financial expertise and Tobin-Q. The second interaction term (PC*AGE) found that insignificant association among age and Tobin-Q. So, according to the outcomes study found that political control moderated the association among age and Tobin-Q. The second interaction term (PC*GEN) found that insignificant association among gender and Tobin-Q. So, according to the outcomes study found that political control moderated the association among gender and Tobin-Q. These values show that foreign ownership doesn't alter the relationship among cognitive board diversity, demographic variables and firm performance measures. So, the analysis didn't approve the hypothesis 3 and 4.

5.2 Recommendations

The study determine the impact of demographic and cognitive board diversity on firm performance with the moderating role of political control: evidence from Pakistan. By taking as the sample of a panel data approach in 58 non-financial manufacturing firms who are registered on the Pakistan Stock Exchange. In the research work findings panel regression approaches for improving the influence of cognitive board diversity and demographics on dependent variable firm performance. This research work may control the meaningful contributions for manufacturing firms that create the best performance and board diversity with different demographics. The first thing kept in mind regarding the study of return on assets just 97% variation in non-financial firms due to these cognitive boards and demographics. The other 3% variation is influenced by other board dimensions and demographics like internal and external governance, political and international laws.

Usually, non-manufacturing firms faced many challenges about unprofessional attitude, fraud, forgery, low level of internal control management, non-execution of disciplinary measurement including the government policies and legal framework about corporations. Due to these measures and steps political control play a vital role in any non-financial sector in Pakistan.

The present study encourage the manufacturing firms for industrial improvement through retaining the best mechanisms in board characteristics and the best setting

regarding age and gender. However, study provides the excellent guidelines to Security Exchange Commission of Pakistan, Federal Board of Revenue and small & large size non-financial firms of Pakistan in which they can improve in their assets, equity and total income volume. Whereas, all other policymakers, stakeholders, practitioners who take guidelines from this study, and also regulatory bodies also take a beneficial measure in the manufacturing sector. Including the board of directors' size, other board members, financial expertise, employees and general public linked with the non-financial firms adopted the reforms and restructuring of financial tasks regarding the ROA, ROE and Tobin-Q measure in any firm, these corporate governance measures showed a significant character for the development of wealth maximization and firm performance.

5.3 Important Suggestions and Recommendations

- To bring the best improvement in cognitive board diversity must bring transparency, accountability and fairness in the financial reporting of the firm.
- Political control level owners and directors should take a serious step to encourage the international investors to invest in the Pakistani manufacturing industry as well as promoting foreign reserves such as China Pakistan Economic Corridor. There area great consumer market and human capital and non-financial firms can increase the performance and growth of the country through foreign investment.
- The firm should settle the reasonable assets volume, equity of shareholders, total income margin.

5.4 Limitations

The present study applies to conduct the research work on non-financial firm performance in which we made a useful contribution for the academia, practitioners,

governmental, regulatory bodies, policymakers and non-financial firm executives; however, some limitation has been explored regarding this study. The current research includes 64 manufacturing firms registered on the Pakistan Stock Exchange, which publish annual reports annually according to the Standard of Corporate Governance imposed by SECP. In the present study, only cognitive board diversity and demographic variables have been included like independent impact and dependent variable like firm performance. The study model applies just to Pakistani non-financial firms. So, the data set was collected from the Pakistani registered firms on PSX.

5.5 Future Directions

Further, the scholars can adopt the same model in other regions of different countries and their financial measures and non-financial sector of the industrial system. However, this study examined Pakistan as a single country so in-depth research can collect data from the other two or three countries and then the researcher can conduct a comparative analysis of data. In our study, we have conducted a study on some board characteristics of the firm as independent and dependent variables but future scholars can adopt the other corporate governance characteristics like audit committee, managerial ownership, foreign ownership, institutional ownership joint venture firms. In study, political control employ as a moderator but furthermore researcher can take family ownership or foreign ownership and employee ownership as a moderator. The firm performance with a measure of ROA, ROE and Tobin in our model have been used as a dependent variable so the future researchers can take voluntary disclosures, financial distress and risk management as the dependent variable in the same study framework. The research work has been taken out the sample of 10 years of data so in the future, the researcher can take updated and more years of data for the consistent findings of the study model. In a future studies conducted on the emerging topic that moderating role of family ownership among the relation of external corporate governance variables and profitability of the non-manufacturing firms and future scholars can adopt a comparative study based on south and western nations.

Bibliography

- Adams, R. B., de Haan, J., Terjesen, S., & van Ees, H. (2015). Board diversity: Moving the field forward. *Corporate Governance: An International Review*, 23(2), 77-82.
- Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of financial economics*, 94(2), 291-309.
- Adler, R. D. (2001). Women in the executive suite correlate to high profits. *Harvard Business Review*, 79(3), 30-32.
- Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation. *The quarterly journal of economics*, 127(1), 137-197.
- Akerlof, G. A., & Kranton, R. E. (2000). Economics and identity. *The quarterly journal of economics*, 115(3), 715-753.
- Alabede, J. O. (2016). Effect of board diversity on corporate governance structure and operating performance: Evidence from the UK listed firms. *Asian Journal of Accounting and Governance*, 7, 67-80.
- Amason, A. C., & Sapienza, H. J. (1997). The effects of top management team size and interaction norms on cognitive and affective conflict. *Journal of management*, 23(4), 495-516.
- Anderson, R. C., Reeb, D. M., Upadhyay, A., & Zhao, W. (2011). The economics of director heterogeneity. *Financial Management*, 40(1), 5-38.

- Ararat, M., Aksu, M., & Tansel Cetin, A. (2015). How board diversity affects firm performance in emerging markets: Evidence on channels in controlled firms. *Corporate Governance: An International Review*, 23(2), 83-103.
- Arioglu, E. (2020). The affiliations and characteristics of female directors and earnings management: evidence from Turkey. *Managerial Auditing Journal*.
- Baranchuk, N., & Dybvig, P. H. (2009). Consensus in diverse corporate boards. *The Review of Financial Studies*, 22(2), 715-747.
- Barker III, V. L., & Mueller, G. C. (2002). CEO characteristics and firm R&D spending. *Management Science*, 48(6), 782-801.
- Baugh, S. G., & Graen, G. B. (1997). Effects of team gender and racial composition on perceptions of team performance in cross-functional teams. *Group & Organization Management*, 22(3), 366-383.
- Bell, S. T. (2007). Deep-level composition variables as predictors of team performance: a meta-analysis. *Journal of applied psychology*, 92(3), 595.
- Ben-Amar, W., Francoeur, C., Hafsi, T., & Labelle, R. (2013). What makes better boards? A closer look at diversity and ownership. *British Journal of Management*, 24(1), 85-101.
- Bernile, G., Bhagwat, V., & Yonker, S. (2018). Board diversity, firm risk, and corporate policies. *Journal of financial economics*, 127(3), 588-612.
- Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. *Journal of Corporate finance*, 14(3), 257-273.
- Burgoyne, J., & Jackson, B. (1997). The arena thesis: management development as a pluralistic meeting point. *Management learning: Integrating perspectives in theory and practice*, 54-70.
- Burke, R. J., & Mattis, M. C. (2013). *Women on corporate boards of directors: International challenges and opportunities* (Vol. 14): Springer Science & Business Media.
- Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics*, 83(3), 435-451.

- Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. *Journal of management*, 30(6), 749-778.
- Carter, D. A., D'Souza, F., Simkins, B. J., & Simpson, W. G. (2010). The gender and ethnic diversity of US boards and board committees and firm financial performance. *Corporate Governance: An International Review*, 18(5), 396-414.
- Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial review*, 38(1), 33-53.
- Catalyst. (2004). *The bottom line: Connecting corporate performance and gender diversity*: Catalyst.
- Council, C. L. (2006). Attracting and retaining critical talent segments: Building a competitive employment value proposition. *Washington, DC: Corporate Executive Board*.
- Dahya, J., Dimitrov, O., & McConnell, J. J. (2008). Dominant shareholders, corporate boards, and corporate value: A cross-country analysis. *Journal of financial economics*, 87(1), 73-100.
- Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of management*, 16(1), 49-64.
- Drees, J. M., & Heugens, P. P. (2013). Synthesizing and extending resource dependence theory: A meta-analysis. *Journal of management*, 39(6), 1666-1698.
- Drobetz, W., & Momtaz, P. (2016). Corporate Governance Convergence in the European M&A market (Working Paper). *University of Hamburg, Germany*.
- Dwyer, S., Richard, O. C., & Chadwick, K. (2003). Gender diversity in management and firm performance: The influence of growth orientation and organizational culture. *Journal of Business Research*, 56(12), 1009-1019.
- Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance: An International Review*, 11(2), 102-111.

- Espeland, M., Breinholt, J., Willmott, K. R., Warren, A. D., Vila, R., Toussaint, E. F., Eastwood, R. (2018). A comprehensive and dated phylogenomic analysis of butterflies. *Current Biology*, 28(5), 770-778. e775.
- Estélyi, K. S., & Nisar, T. M. (2016). Diverse boards: Why do firms get foreign nationals on their boards? *Journal of Corporate finance*, 39, 174-192.
- Eulerich, M., Velte, P., & van Uum, C. (2014). The impact of management board diversity on corporate performance. An empirical analysis for the German two-tier system. *An Empirical Analysis for the German Two-Tier System (November 8, 2013). Problems and Perspectives in Management (PPM)*, 12, 25-39.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, 26(2), 301-325.
- Farrell, K. A., & Hersch, P. L. (2005). Additions to corporate boards: The effect of gender. *Journal of Corporate finance*, 11(1-2), 85-106.
- Francoeur, C., Labelle, R., & Sinclair-Desgagné, B. (2008). Gender diversity in corporate governance and top management. *Journal of Business Ethics*, 81(1), 83-95.
- Germain, L., Galy, N., & Lee, W. (2014). Corporate governance reform in Malaysia: Board size, independence and monitoring. *Journal of Economics and Business*, 75, 126-162.
- Goette, L., Huffman, D., & Meier, S. (2006). The impact of group membership on cooperation and norm enforcement: Evidence using random assignment to real social groups. *American Economic Review*, 96(2), 212-216.
- Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *The quarterly journal of economics*, 118(1), 107-156.
- Güner, A. B., Malmendier, U., & Tate, G. (2008). Financial expertise of directors. *Journal of financial economics*, 88(2), 323-354.
- Gyapong, E., Monem, R. M., & Hu, F. (2016). Do women and ethnic minority directors influence firm value? Evidence from post-apartheid South Africa. *Journal of Business Finance & Accounting*, 43(3-4), 370-413.

- Hafsi, T., & Turgut, G. (2013). Boardroom diversity and its effect on social performance: Conceptualization and empirical evidence. *Journal of Business Ethics*, 112(3), 463-479.
- Hagendorff, J., & Keasey, K. (2012). The value of board diversity in banking: evidence from the market for corporate control. *The European Journal of Finance*, 18(1), 41-58.
- Hargreaves Heap, S. P., & Zizzo, D. J. (2009). The value of groups. *American Economic Review*, 99(1), 295-323.
- Haslam, S. A., Ryan, M. K., Kulich, C., Trojanowski, G., & Atkins, C. (2010). Investing with prejudice: The relationship between women's presence on company boards and objective and subjective measures of company performance. *British Journal of Management*, 21(2), 484-497.
- Hassan, R., & Marimuthu, M. (2018). Bridging and bonding: having a Muslim diversity on corporate boards and firm performance. *Journal of Islamic Accounting and Business Research*.
- Hassan, R., Marimuthu, M., & Johl, S. K. (2015). Ethnic diversity on boards and market performance: An empirical investigation in Malaysia. *Advanced Science Letters*, 21(5), 1099-1103.
- Hassan, R., Marimuthu, M., & Johl, S. K. (2017). Bridging and Bonding: How Gender Diversity Influence Organizational Performance. *Global Business & Management Research*, 9.
- Hermalin, B. E., & Weisbach, M. S. (2001). Boards of directors as an endogenously determined institution: A survey of the economic literature: National Bureau of Economic Research.
- Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource dependence theory: A review. *Journal of management*, 35(6), 1404-1427.
- Horwitz, S. K., & Horwitz, I. B. (2007). The effects of team diversity on team outcomes: A meta-analytic review of team demography. *Journal of management*, 33(6), 987-1015.

- Huang, X., & Iun, J. (2006). The impact of subordinate–supervisor similarity in growth-need strength on work outcomes: the mediating role of perceived similarity. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 27(8), 1121-1148.
- Jackson, S. E., Brett, J. F., Sessa, V. I., Cooper, D. M., Julin, J. A., & Peyronnin, K. (1991). Some differences make a difference: Individual dissimilarity and group heterogeneity as correlates of recruitment, promotions, and turnover. *Journal of applied psychology*, 76(5), 675.
- Jackson, S. E., May, K. E., Whitney, K., Guzzo, R., & Salas, E. (1995). Understanding the dynamics of diversity in decision-making teams. *Team effectiveness and decision making in organizations*, 204, 261.
- Javid, A. Y., & Iqbal, R. (2008). Ownership concentration, corporate governance and firm performance: Evidence from Pakistan. *The Pakistan Development Review*, 643-659.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360.
- Kiel, G. C., & Nicholson, G. J. (2003). Board composition and corporate performance: How the Australian experience informs contrasting theories of corporate governance. *Corporate Governance: An International Review*, 11(3), 189-205.
- Kim, I., Pantzalis, C., & Park, J. C. (2013). Corporate boards' political ideology diversity and firm performance. *Journal of Empirical Finance*, 21, 223-240.
- King, A. W., & Zeithaml, C. P. (2001). Competencies and firm performance: Examining the causal ambiguity paradox. *Strategic management journal*, 22(1), 75-99.
- Kochan, T., Bezrukova, K., Ely, R., Jackson, S., Joshi, A., Jehn, K., Thomas, D. (2003). The effects of diversity on business performance: Report of the diversity research network. Human Resource Management: Published in Cooperation with the School of Business Administration, *The University of Michigan*

- and in alliance with the Society of Human Resources Management*, 42(1), 3-21.
- Krishnan, H. A., & Park, D. (2005). A few good women—on top management teams. *Journal of Business Research*, 58(12), 1712-1720.
- Kumar, R., & Sharma, V. (2015). *Auditing: Principles and practice*: PHI Learning Pvt. Ltd.
- Labelle, R., Francoeur, C., & Lakhali, F. (2015). To regulate or not to regulate? Early evidence on the means used around the world to promote gender diversity in the boardroom. *Gender, Work & Organization*, 22(4), 339-363.
- Leventis, S., Weetman, P., & Caramanis, C. (2005). Determinants of audit report lag: Some evidence from the Athens Stock Exchange. *International Journal of Auditing*, 9(1), 45-58.
- Liu, Y., Wei, Z., & Xie, F. (2014). Do women directors improve firm performance in China? *Journal of Corporate Finance*, 28, 169-184.
- Lückerath-Rovers, M. (2013). Women on boards and firm performance. *Journal of Management & Governance*, 17(2), 491-509.
- Mahadeo, J. D., Soobaroyen, T., & Hanuman, V. O. (2012). Board composition and financial performance: Uncovering the effects of diversity in an emerging economy. *Journal of Business Ethics*, 105(3), 375-388.
- Mannix, E., & Neale, M. A. (2005). What differences make a difference? The promise and reality of diverse teams in organizations. *Psychological Science in the Public Interest*, 6(2), 31-55.
- Matsa, D. A., & Miller, A. R. (2013). A female style in corporate leadership? Evidence from quotas. *American Economic Journal: Applied Economics*, 5(3), 136-169.
- Maznevski, M. L. (1994). Understanding our differences: Performance in decision-making groups with diverse members. *Human Relations*, 47(5), 531-552.
- Miller, T., & del Carmen Triana, M. (2009). Demographic diversity in the boardroom: Mediators of the board diversity–firm performance relationship. *Journal of Management Studies*, 46(5), 755-786.

- Milliken, F. J., & Martins, L. L. (1996). Searching for common threads: Understanding the multiple effects of diversity in organizational groups. *Academy of management review*, 21(2), 402-433.
- Minton, B. A., Taillard, J. P., & Williamson, R. (2014). Financial expertise of the board, risk taking, and performance: Evidence from bank holding companies. *Journal of Financial and Quantitative Analysis*, 351-380.
- Mohamed, D. M., & Habib, M. H. (2013). Auditor independence, audit quality and the mandatory auditor rotation in Egypt. *Education, Business and Society: Contemporary Middle Eastern Issues*.
- Nakai, M., Yamaguchi, K., & Takeuchi, K. (2016). Can SRI funds better resist global financial crisis? Evidence from Japan. *International Review of Financial Analysis*, 48, 12-20.
- Nguyen, D. D., Hagendorff, J., & Eshraghi, A. (2015). Which executive characteristics create value in banking? Evidence from appointment announcements. *Corporate Governance: An International Review*, 23(2), 112-128.
- Nielsen, S., & Huse, M. (2010). The contribution of women on boards of directors: Going beyond the surface. *Corporate Governance: An International Review*, 18(2), 136-148.
- Nielsen Tasheva, S., & Hillman, A. (2018). Integrating diversity at different levels: Multi-level human capital, social capital, and demographic diversity and their (online).
- O'Reilly III, C. A., Williams, K. Y., & Barsade, S. (1998). Group demography and innovation: Does diversity help?
- Parola, H. R., Ellis, K. M., & Golden, P. (2015). Performance effects of top management team gender diversity during the merger and acquisition process. *Management Decision*.
- Patzelt, H., zu Knyphausen-Aufseß, D., & Fischer, H. T. (2009). Upper echelons and portfolio strategies of venture capital firms. *Journal of Business Venturing*, 24(6), 558-572.
- Pfeffer, J. (1982). *Organizations and organization theory*: Pitman Boston.

- Pfeffer, J., & Gerald, R. (1978). Salancik. 1978. The external control of organizations: A resource dependence perspective: New York: Harper & Row.
- Post, C., & Byron, K. (2015). Women on boards and firm financial performance: A meta-analysis. *Academy of management Journal*, 58(5), 1546-1571.
- Randøy, T., Thomsen, S., & Oxelheim, L. (2006). A Nordic perspective on corporate board diversity. *Age*, 390(0.5428), 1-26.
- Rhode, D. L., & Packel, A. K. (2014). Diversity on corporate boards: How much difference does difference make. *Del. J. Corp. L.*, 39, 377.
- Richard, O. C., Wu, J., Markoczy, L. A., & Chung, Y. (2019). Top management team demographic-faultline strength and strategic change: What role does environmental dynamism play? *Strategic management journal*, 40(6), 987-1009.
- Riordan, C. M., & Shore, L. M. (1997). Demographic diversity and employee attitudes: An empirical examination of relational demography within work units. *Journal of applied psychology*, 82(3), 342.
- Rose, C. (2007). Does female board representation influence firm performance? The Danish evidence. *Corporate Governance: An International Review*, 15(2), 404-413.
- Rowley, T. J., Shipilov, A. V., & Greve, H. R. (2017). Board reform versus profits: The impact of ratings on the adoption of governance practices. *Strategic management journal*, 38(4), 815-833.
- Sarhan, A. A., Ntim, C. G., & Al-Najjar, B. (2019). Board diversity, corporate governance, corporate performance, and executive pay. *International Journal of Finance & Economics*, 24(2), 761-786.
- Schneid, M., Isidor, R., Steinmetz, H., & Kabst, R. (2016). Age diversity and team outcomes: A quantitative review. *Journal of Managerial Psychology*.
- Shaffer, B., & Hillman, A. J. (2000). The development of business-government strategies by diversified firms. *Strategic management journal*, 21(2), 175-190.
- Shemla, M., Meyer, B., Greer, L., & Jehn, K. A. (2016). A review of perceived diversity in teams: Does how members perceive their team's composition

- affect team processes and outcomes? *Journal of Organizational Behavior*, 37, S89-S106.
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The journal of finance*, 52(2), 737-783.
- Shrader, C. B., Blackburn, V. B., & Iles, P. (1997). Women in management and firm financial performance: An exploratory study. *Journal of managerial issues*, 355-372.
- Siciliano, J. I. (1996). The relationship of board member diversity to organizational performance. *Journal of Business Ethics*, 15(12), 1313-1320.
- Talavera, O., Yin, S., & Zhang, M. (2018). Age diversity, directors' personal values, and bank performance. *International Review of Financial Analysis*, 55, 60-79.
- Tarus, D. K., & Aime, F. (2014). Board demographic diversity, firm performance and strategic change. *Management Research Review*.
- Thaler, R. H., & Benartzi, S. (2004). Save more tomorrowTM: Using behavioral economics to increase employee saving. *Journal of political Economy*, 112(S1), S164-S187.
- Thatcher, S., & Patel, P. C. (2011). Demographic faultlines: A meta-analysis of the literature. *Journal of applied psychology*, 96(6), 1119.
- Thomsen, S., & Conyon, M. (2012). Stakeholder Governance in Scandinavia. *Corporate Governance: Mechanisms and Systems*, 285-305.
- Tommerup, H., Rose, J., & Svendsen, S. (2007). Energy-efficient houses built according to the energy performance requirements introduced in Denmark in 2006. *Energy and Buildings*, 39(10), 1123-1130.
- Wagner, W. G., Pfeffer, J., & O'Reilly III, C. A. (1984). Organizational demography and turnover in top-management group. *Administrative Science Quarterly*, 74-92.
- Watsham, T. J., & Parramore, K. (1997). *Quantitative methods in finance*: Cengage Learning EMEA.

- Watson, W. E., Kumar, K., & Michaelsen, L. K. (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneous and diverse task groups. *Academy of management Journal*, 36(3), 590-602.
- Williams, K. Y., & O'Reilly III, C. A. (1998). Demography and. *Research in organizational behavior*, 20, 77-140.
- Woodside, A. G., & Zhang, M. (2013). Cultural diversity and marketing transactions: Are market integration, large community size, and world religions necessary for fairness in ephemeral exchanges? *Psychology & Marketing*, 30(3), 263-276.
- Zakir, N. (2019). *The economics of political donations*. University of Leicester.