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Moderating Role of Investment Efficiency between Board Diversity and Dividend Policy: Evidence from Pakistan

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ABSTRACT

The purpose of this study is to enhance the understanding in debate of governance demographics by investigate the impact of board diversity on dividend policy and moderating effect of corporate investment efficiency on dividend policy. The sample incorporated in this study comprises of panel data of 77 firms listed in Karachi stock exchange (KSE) during the period of 2012-2019. This study performs a parametric technique regression analysis to measure the investment efficiency and Panel least square models to investigate the association between board diversity and dividend policy. Furthermore, hierarchical explained the results for interaction effect of investment efficiency. This study adds a new finding in the corporate governance through empirical an investigation on the association between board diversity and dividend policy. Results support the interaction effect of investment efficiency between board diversity and dividend policy. Our study suggests that firms involve in high level of efficient investment with diverse ethnic backgrounds and gender in corporate board significantly associated with dividend policy. This study explains the practical implications for the corporate boards in the south Asian culture who enhance the investment efficiency that main goal of finance to enhance the wealth maximization of shareholders in terms of dividends.

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1. Introduction

The goal of Corporate Governance is to maintain a balance between the firm's individual and collective interests, as well as between economic and social goals. It attempts to ensure responsible practices utilizing a variety of mechanisms such as audit committees, auditors, and directors who are responsible for monitoring and supervising the performance of management and decisions. As the business world grows more competitive, companies must generate and build exceptional corporate governance, and stakeholders will see companies with strong corporate values favorably. The Corporate Governance is a system that regulates and controls organizations that generates benefit. Distribution of free cash inflows back to the shareholders' wealth mitigates the agency cost. According to agency theory, presence of asymmetric information or moral hazards forced the outside investors to prefer on dividends rather than managers (Jensen & Meckling, 2019) can expropriate retained earnings as later. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2000) argue in their substitution model, dividend is substitute for investor rights. Presence of strong governance makes confident the investors over their regular dividend payments while in weak governance they are not sure about their returns. In addition to this above statement, dividend policy can also linked in highlighting the major role of corporate governance. Dividend policy creates impact on firm's value. The dividend policy has a significant impact on the firm since it determines whether the company's profits gained during the current year would paid to shareholders in the form of dividends or the company will retain that. The corporation will undoubtedly evolve in the process of increasing its value, and this development will inevitably result in social inequity. After (Battista, Coppick, Howsmon, Morehead, & Sisson, 1956) and (Miller & Modigliani, 1961) seminal work on dividends, several empirical studies are examined on the dividend policy. Agency theory is more prominent among them, which explains dividend through agency costs that arises due to the conflict of interest between managers and shareholders. In this situation a managements' dividend policy may not leads to wealth maximization of shareholders (Jensen & Meckling, 2019). Jiraporn, Kim, and Kim (2011) argues mangers may adopt a dividend policy for the maximization of own benefits. Therefore, dividends can eliminate agency cost by reducing free cash flow that management used for their own benefits (DeAngelo, DeAngelo, & Stulz, 2006). Corporate board is the most effective part of business in the business organizations. In this study, we explore the association between board diversity in terms of education, foreign or local backgrounds and gender representation and dividend policy.

In the modern corporate world directors are most important body of the management (Ferguson, Ormiston, & Wong, 2019). They are responsible for strategic plans, dictionary actions and facilitating corporate contracts and financial agreements (Ferguson et al., 2019). In the earlier researches dividend policy highlighted with financial performance, financial advantage and corporate governance. Dividend policy significantly associated with corporate boards' composition (Benlemlih, 2019). Board attributes are significantly effect on the dividend policy (Pahi & Yadav, 2018). In the previous researches, it has found that Board duality (Sawicki, 2009), foreign directors (Boumosleh & Cline, 2015), Board size (Mosa, Taher, & Al-Jaberi, 2017) and directors' age (Custódio & Metzger, 2014) influenced on dividend policy.

Earlier studies found that a diverse board in corporate governance has been emerging trend for both experts and academic scholars. Diversity in corporate board has impact on the shareholder's wealth and financial performance of business (Rao & Tilt, 2016). However, board diversity not always associated with shareholders' value in terms of dividend (Ooi, Hooy, & Som, 2017). To the best of ours' literature, knowledge current study provides the empirical investigation between Board diversity and dividend policy in context of corporate sectors from the efficient investment. Existing literature found a gap between dividend policy and corporate governance from perspective of efficient investment. Efficient investment leads to higher profitability that ultimately enhances shareholders' wealth in terms of dividends (Abor & Bokpin, 2010). Trong and Nguyen (2020) found an optimal or efficient investment leads moderates the relationship between firm profitability and distribution of dividends to its shareholders. Our study will help and contribute to the literature in a number of ways. According to our knowledge this is the first research to look into the relationship of corporate boards diversity in supporting Dividend Policy, which is one of the most contentious topics in modern corporate finance and business world.

In the earlier literature, studies mostly conducted on the moderation of profitability. However, an efficient investment reduces the agency conflicts that maximize shareholders' wealth. To best of our knowledge, this research contributes in the literature of corporate governance in two ways. Firstly, we are viewing the board demographics promoting the dividend policy under the corporate sector getting efficient investment. Secondly the study we investigate the board demographics enhancing the shareholders' wealth in the context of Pakistan. At theoretical level, this study confirms shareholder theory.

2. Literature Review and Hypotheses Development

2.1. Board Diversity and Dividend Policy

Board diversity in the recent literature considered as significant element that promotes the shareholder's wealth. Tobin (1972) Management decisions of the board followed in accordance of agency theory in the more diverse board. Nordberg and Booth

(2018) theory of resource dependency found that a diverse knowledge, skills and experience based on the diverse culture enhance the overall performance of board. Moreover, diversity in the age and gender helps in problem solving and better understanding in corporate sector (Ibrahim & Hanefah, 2016). Well-organized governance based on diverse board affect positively on dividend policy (Tahir, Masri, & Rahman, 2020). Financial performance of the corporate sector improves shareholders' stake and confidence by diverse board (Tilt, 2016). Literature on corporate governance suggests that board diversity in corporate sector is an emerging trend in both experts and academics. In review of previous literature, it has found a significant gap of shareholders' wealth from efficient investment point of view. Corporate sector can provide a solid foundation and implementation through reference shareholders dividend and wealth from business involve in optimal or efficient investment and cost reduction (Abor & Bokpin, 2010). A business can optimize profitability by investment efficiency or reducing cost and redistribute to their shareholders in terms of dividends.

A company communicates their dividend distribution to attract investors and raising capital for their long-term funds by communicating their returns targets, achievements and performance with relative industry.

2.2. Ethnic Diversity and Dividend policy

Presence of foreign directors in the board brings a positive financial performance in the corporate sector (Macaulay, Richard, Peng, & Hasenhuttl, 2018). Cultural configuration of directors effects on the environment of the organizations. Cultural diversification in the organizations supports the shareholder's interest. Investors are willing to invest in the firms having culture that is more diverse. Racial diversity in the board of directors has a significant impact on the dividend policy with respect to their counterpart a none driver's board. Results of the study revealed that board of directors with the different ethnic backgrounds are able to reduce agency cost between managers and common investors (Hunt, Layton, & Prince, 2015). Board diversity can be indication for external and internal stakeholders. Symbolic indication has a positive impact on the firm value, which attracts the diverse group of members and investors to invest in specific firm. Diversity in the board of directors has a significant communicating effect within and outside the group. In this way diversity board of directors to fulfill gear monitoring role (Thanetsunthorn & Wuthisatian, 2018). Ethnic background of the investor is highly associated with investment performance (Gompers & Kovvali, 2018). A positive and significant association found between ethno-racial diversity and shareholders' dividend. Diverse ethnic ties in board of directors pressurize them to make independent decision-makings in dividend distribution (Kolev & McNamara, 2020). Hence, we proposed that

H1: Ethnic diversity has significant and positive impact on dividend policy

2.3. Educational Diversity and Dividend policy

Personal characteristics of the CEO outline corporate decisions making (Roach & Slater, 2016). A combined set of knowledge and skills of CEO impact on financial performance of firms and these skills and knowledge are beyond the university Curriculums. Study based on the Australian research found that business school education might not significantly improve financial performance of firms (Linford, 2013). Furthermore, the universities must divert their curriculums to skill-based knowledge for the sustainability of business (Hughes, Upadhyaya, & Houston, 2018). Higher education in the top management enhances firm globalization because of diverse knowledge, expertise and problem solving skills (Fredrickson, 2001). As per Resource Dependency Theory, diverse skill and knowledge in the board of directors promote business for globalization and sustainability (Tan, Kamarudin, Bany-Ariffin, & Rahim, 2020). Accounting expertise of directors significantly effect on the dividend policies (Qiao, Chen, & Hung, 2018). Board with diverse education increases firm performance through firm efficiency, which ultimately enhances shareholders' confidence (Tan et al., 2020). From the above discussion, we propose that

H2: Educational diversity has a significant and positive impact on the dividend policy.

2.4. Gender Diversity and Dividend Policy

Women managers are discriminate in the business organizations with respect to male counterparts due to large numbers (Koričan & Jelavić, 2008). Financial performance of the corporate sector increases due to the female counterparts at manager and director level (Lin, Liu, Huang, & Chen, 2018). Higher percentage of female directors are found in 500 firms more than male which play an important role in the success of organizations (Macaulay et al., 2018). From the growing pressure of society and regulatory bodies signifies that board must be representative of population (Shaukat, Qiu, & Trojanowski, 2016). Women directors in the U.S listed firms are likely to promote dividends than male counterparts (J. Chen, Leung, & Goergen, 2017). Ye, Deng, Liu, Szewczyk, and Chen (2019) found quality governance in corporate sector facilitated through gender diversity which promotes dividends pay out consequently. Women directors have greater impact on the dividend payments when there are three or more women in the boards (Gyapong, Ahmed, Ntim, & Nadeem, 2021). Gender diversity due to female counter parts enhances the dividend payouts of the shareholders in the sate-owned firms specifically china and Russia. However, in financial crises this relationship not remains significant (Riaz, Saeed, & Sameer, 2020).

H3: Gender diversity has a significant and positive impact on the dividend policy.

2.5. Moderating Role of Investment Efficiency

Optimal investment is fundamental question in the corporate finance. Investment determined by the investment opportunities in the frictionless market (Modigliani & Miller, 1958). Dividends payments are important due to conflict of interest between managers and shareholders. Bhagat and Welch (1995) found inefficient investment caused by self-interest behaviors of the managers. S. Chen et al. (2014) argue agency problems are like to increase investment inefficiency due to own benefits of managers. Guariglia and Yang (2016) found a strong evidence of investment inefficiency in the Chinese market resulting from agency conflicts. Agency problems and conflict of interest increases due to over and under investment. Managers are expropriating firm’s resources for their own interest. They prefer to spend free cash flow on investment having negative net present value rather than paying dividends, result in overinvestment problems. Higher managerial ability in the corporate board leads to efficient decision-makings (Gan, 2019). Agyei-Mensah (2021) Optimum or efficient investments reduce agency conflicts by corporate boards that enable the shareholders to get their returns. Growing literature in the corporate governance has documented that agency conflicts and information asymmetry between managers and external investors prevents from the optimal investment decisions makings. (Tan et al., 2020) found board education builds information asymmetry that significantly effects on investment efficiency. Hence, due to low agency conflicts firms are able to build shareholders’ interest. Cheng, Han, and Lu (2017) found that outside directors’ positively associate with corporate investment efficiency implies reduction in agency cost hence improve shareholder’s interest consequently dividend payouts increase. Agency conflicts reduce due to gender diversity that promotes the investment efficiency of corporate sector (Mirza, Majeed, & Ahsan, 2020). Liu et al. (2012) postulate that family CEOs mitigates the agency conflicts between managers and outside shareholders and hence increase firm performance. Family CEO has positive impact on the investment efficiency that leads to optimal returns on investment. Hence, it strengthens the shareholder’s confidence in term of dividends payouts (Gao, Cai, Yang, Dong, & Zhang, 2017). Firms with diverse board contain diverse set of knowledge, skills and problem solving expertise as per resource dependency theory lowers the conflict of interest and enhance the information asymmetry. Diverse experience and knowledge of managers enable them to get optimal returns from their investment (Ullah, Zeb, Khan, & Xiao, 2020). High profits on investment strengthen the shareholders interest in firms’ investment.

Agency problems also alleviates by Institutional ownership. Institutional investor has great influence on corporate governance that reduces mangers’ self-interest and window-dressing and pressurizes managers to direct effectively and focus on long-term performance of the organization (Aggarwal, Erel, Ferreira, & Matos, 2011; Easterbrook, 1984). Institutional investors with large ownership improve the firm’s ability to work for their investments (Admati & Pfleiderer, 2009). Cao et al. (2018) found that institutional ownership has positive impact on the investment efficiency of the firm suggesting that institutional investors have large influence in corporate board and this effect is more pronounced for their wealth maximization (Dividends payouts).

A firm with efficient investment believes on lowering agency conflicts and maximizing the shareholders wealth and interest (Majeed, Zhang, & Umar, 2018). Efficient investment optimize the firm profitability and it redistribute to shareholders in terms of dividend. Hence, we conclude that Diversity in the corporate board minimize the agency conflicts enables them for optimal investment opportunities. Than corporate board, easily work for shareholders' wealth. Hence, we proposed the below hypotheses:

H4(a): Investment efficiency moderates the relationship between Ethnic diversity and dividend policy

H4(b): Investment efficiency moderates the relationship between Educational diversity and dividend policy

H4(c): Investment efficiency moderates the relationship between Gender diversity and dividend policy

3. Theoretical and Conceptual Framework

In the recent literature, it has found the growing interest in the relation between board diversity and dividend policy (Hunt et al., 2015; Kolev & McNamara, 2020; Macaulay et al., 2018; Thanetsunthorn & Wuthisatian, 2018). In this study, we extend the previous work by incorporating investment efficiency as moderator to explore the impact of diverse board on dividend policy. The proposed conceptual framework is follows as:

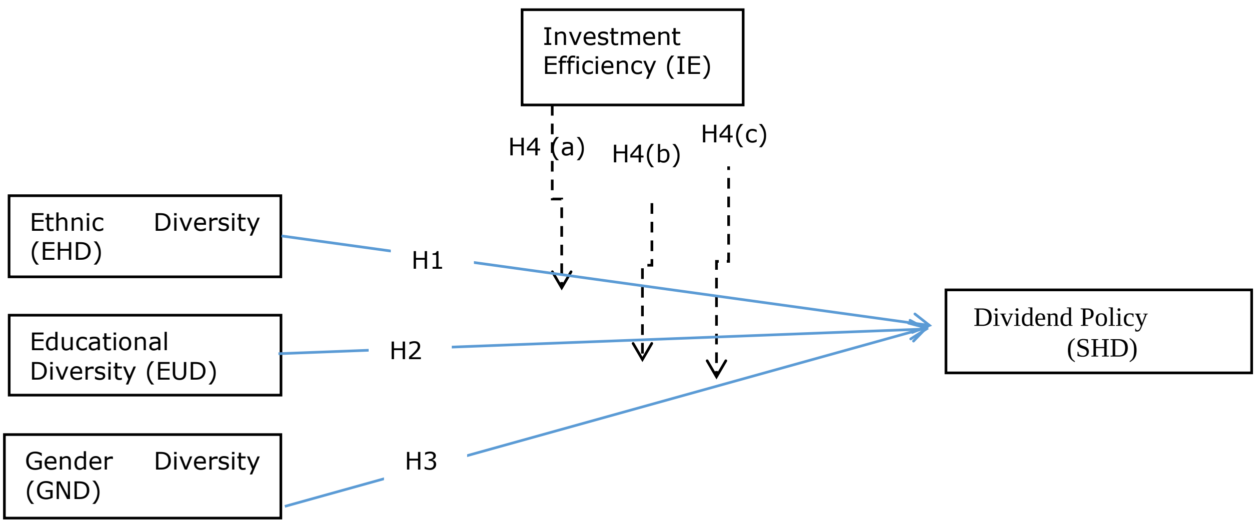

Figure 1: ***Conceptual Frame Work***

4. Data and Methodology

The sample size for our study is comprises of 77 listed none-financial firms in Karachi stock exchange (KSE) selected from different sectors in Pakistan. Data were collected based on the period of 2012-19 from annual reports obtained from KSE (N=616). Selected sample presents about 80 % of the total market capitalization of Pakistani stock market. In our study dividends policy is dependent variable, independent variable is Board diversity, which measured through ethnic diversity, educational diversity and gender diversity. Firms involve in the efficient investment are taken as mediator. Panel regression models with fixed and random effects employed to test our model. Furthermore, moderating effect investigated through hierarchical regression in the model. Our regression model presented as follow in the light of above discussion:

$$SHD_{it} = \beta_0 + \beta_1 EHD_{it} + \beta_2 EUD_{it} + \beta_3 GND_{it} + \beta_4 IE_{it} + \beta_5 (EHD * IE)_{it} + \beta_6 (EUD * IE)_{it} + \beta_7 (GND * IE)_{it} + \varepsilon_{it} \quad (1)$$

$$SHAREHOLDERS\ DIVIDEND_{it} = \beta_0 + \beta_1 ETHNIC\ DIVERSITY_{it} + \beta_2 EDUCATIONAL\ DIVERSITY_{it} + \beta_3 GENDER\ DIVERSITY_{it} + \beta_4 INVESTMENT\ EFFICIENCY_{it} + \beta_5 (ETHNIC\ DIVERSITY * INVESTMENT\ EFFICIENCY)_{it} + \beta_6 (EDUCATIONAL\ DIVERSITY * INVESTMENT\ EFFICIENCY)_{it} + \beta_7 (GENSER\ DIVERSITY * INVESTMENT\ EFFICIENCY)_{it} + \varepsilon_{it} \quad (2)$$

4.1. Dividend policy

Dividend policy of the corporate sector measured through annual dividends payouts to their shareholders (Asquith & Mullins Jr, 1983).

4.2. Ethnic Diversity

Percentages of foreign directors in the corporate boards taken ethnic diversity obtained from the annual financial reports of firms.

$$Ethnic\ diversity = \frac{Number\ of\ Foreign\ diretors}{Total\ number\ of\ directors} \times 10 \quad (3)$$

4.3. Educational Diversity

Educational diversity measured at the five-point scale obtained from the financial reports of firms. At first stage educational achievements are obtained at ordinal scale i.e. 5= Phd Degree, 4= MBA, 3= Master, 2= Graduate, 1= School. Then take the average of CEO and director's educations (Kaczmarek, Kimino, & Pye, 2014; Tan et al., 2020).

Table 1
Measurement of variables

Variables	Variables Abbreviation	Measurement/Variable Definitions
	Dependent variable	
Dividend Policy	SHD	Annual dividends payout ratio
	Independent variable	
Ethnic diversity	EHD	Percentage of Foreign directions
Educational diversity	EUD	Average education of chairman and CEO i.e. Bachlor, Master/CA degree, Phd Degree, others
Gender diversity	GND	Percentage of Female directions
	Moderator	
Investment Efficiency	IE	1= efficient investment firms otherwise 0

4.4. Gender Diversity

Percentages of female directors in the corporate boards are taken gender diversity obtained from the annual financial reports of firms. Macaulay et al. (2018) accounted gender diversity as percentage of female gender in the total directors of corporate board.

$$Ethnic\ diversity = \frac{Number\ of\ Female\ diretors}{Total\ number\ of\ directors} \times 100 \quad (4)$$

4.5. Investment Efficiency

Difference between actual and expected investment is measured as investment efficiency. Firm is being involves in over or under investment if actual investment is higher or lower than expected investment respectively (Biddle, Hilary, & Verdi, 2009; Shen, Luo, & Huang, 2015). Estimation of expected investment is followed by (F. Chen, Hope, Li, & Wang, 2011; Richardson, 2006) investment expectation model for measuring investment efficiency. The proposed model as follows:

$$INVESTMENT_{it} = \beta_0 + \beta_1 SALES\ GROWTH_{it-1} + \varepsilon_{it} \quad (5)$$

Where i= firm, t=time, Investment= Net increase in tangible and intangible scaled by total assets and sales growth expressed by rate of change in sales. Investment efficiency measured through residual error term ε_{it} of the model that is the difference between actual and expected investment.

At first stage, we obtained the investment efficiency score from residual of above model. Then at second stage, we assigned "1" for firms having efficiency score more or equal to fifty percent otherwise zero.

5. Results and Findings

5.1. Descriptive Analysis

Table II explains the descriptive analysis in terms of mean, slandered deviation and pearson correlation for each variable. A significant and positive correlation found among ethnic diversity and dividends payouts. Same results are repeating between educational diversity and dividends supports the idea of (Ooi et al., 2017). However, in case of gender diversity relationship is insignificant. Firms with efficient investment are more likely positively support dividends payouts by ethnic, education and gender diversity but negatively support by educational diversity.

Table 2
Descriptive Analysis

Variables	Mean	SD	SHD	EHD	EUD	GND	EHD×IE	EUD×IE	GND×IE
SHD	17.100	69.5548	1.000						
EHD	0.1150	0.21355	0.215***	1.000					
			(0.000)						
EUD	1.8130	0.4042	0.085**	-0.104**	1.000				
			(0.036)	(0.010)					
GND	0.6895	0.1078	0.034	-0.219**	-0.052	1.000			
			(0.407)	(0.000)	(0.195)				
EHD×IE	0.0496	0.1662	0.149***	0.553**	-0.21***	-0.030	1.000		
			(0.000)	(0.000)	(0.000)	(0.460)			
EUD×IE	0.7760	0.9292	0.09**	-0.109**	0.140***	0.009	0.350***	1.000	
			(0.010)	(0.007)	(0.000)	(0.826)	(0.000)		
GND×IE	0.0320	0.0860	0.080**	-0.041	-0.007	0.58**	0.193***	0.486***	1.000
			(0.048)	(0.314)	(0.871)	(0.000)	(0.000)	(0.000)	

Note : () denotes p-value at ***p<0.01, **p< 0.05, *p< 0.10, N=616

5.2. Panel Regression Models

To test our hypotheses panel regression models employed for data analysis. In the main effect models, we investigate board diversity with dividends pay out but in interaction models moderating effect of efficient investment via firms. Standardized form of variables eliminates multicollinearity between interaction variables and independent variables (Aiken, West, & Reno, 1991). Pooled effect model ignores the unobserved heterogeneity in the data sample. However, fixed effect model ignores time effect among cross sections or firms level (Bartels, 2008). Hence, table II employed pooled, fixed and random effect models to test our proposed hypotheses. Huasmen test in main effect model is failed to reject null hypothesis (*p-value,* .2339>0.05) suggest that random effect is appropriate hence there is no covariance among error term and independent variables i.e., education, ethnic and gender diversity but results are not supporting to random effect in interaction terms. Moreover, covariance also checked in interaction effect models. Since three independent variables, one moderator and a dependent variable in our model we employed main and interaction effects to test our data. In the main effect model, dividend policy checked through board diversity but in interaction effect moderation of investment efficiency investigated. Main effect predicts H1, H2 and H3 respectively. Model III as per decision of random effect supporting our H1 (β= 0.1705, $p < .05$) predicting that ethnic diversity supporting shareholders' dividend. Same results are repeating for H3 (β= 0.4454, $p < .05$) but educational diversity is not able to support our H2 (β= 0.007, $p > .05$). Model III preferred as per Hausman test (*p-value,* .2339>0.05) for estimation of main effect.

Finally, H4 (a), (b) and (c) confirmed through interaction effect. Education diversity is insignificant in main effect (β= 0.007, $p > .05$) but significant in interaction effect (β= 0.03747, $p < .05$) confirming H4 (b) that investment efficiency moderating educational diversity. Furthermore, investment efficiency moderates ethnic diversity but positively to dividend policy (β= 0.1489, $p < .05$) explaining H4 (a).

Table 3
Panel Regression Model

Variables	Model I Pooled Effect		Model II Fixed Effect		Model III Random Effect	
Main Effect						
Constant	0.0673** (0.0243)	0.0797*** (0.0077)	-0.0557 (0.5377)	-0.06275 (0.4784)	0.0512 (0.268)	0.0594 (0.1954)
EHD	0.2023*** (0.000)	0.2089*** (0.000)	0.1293** (0.013)	0.1522*** (0.0032)	0.1705*** (0.000)	0.1784*** (0.000)
EUD	0.0088 (0.562)	0.0141 (0.3567)	0.0694 (0.160)	0.0712 (0.1404)	0.0047 (0.843)	0.0007 (0.9756)
GND	0.4699*** (0.000)	0.4417*** (0.000)	0.4223*** (0.000)	0.4495*** (0.000)	0.4454*** (0.000)	0.4465*** (0.000)
Interaction Effect						
EHD×IE		0.0924*** (0.0028)		0.1489*** (0.000)		0.1186*** (0.000)
EUD×IE		0.01296*** (0.0086)		0.0374*** (0.000)		0.02584*** (0.000)
GND×IE		0.0705 (0.1107)		-0.0492 (0.3425)		-0.0061 (0.8944)
F-Stats.	57.202*** (0.000)	31.949*** (0.000)	6.9695*** (0.000)	7.3595*** (0.000)	33.6024*** (0.000)	20.8936*** (0.000)
R-square	0.2189	0.2397	0.5067	0.5314	0.1414	0.1709
Adj.Rsquare	0.2151	0.2322	0.4340	0.4592	0.1372	0.1627
Hausman Test				13.6379 (0.0340)	4.2680 (0.2339)	

Note : N=616 for all models; () denotes p-value at ***p<0.01, **p< 0.05, *p< 0.10

5.3. Hierarchical Regression Analysis

For robustness of results proposed hypothesis tested through hierarchical regression model. To eliminate multicollinearity variables standardized before estimating results for main and interaction effects. Ethnic and gender diversity have positive and significant impact on the shareholders' dividend supporting H1 (0.000<0.05) and H2 (0.000<0.05). Results presented in model I conclude that board with diverse ethnic's backgrounds support payouts to their shareholders. Same results are repeating for educational diversity explaining the diverse education in the board promotes dividends payouts. Higher the ethnicity and presence of diverse education in directors higher will be the payouts. H3 tests whether the presence of female directors in board has significant associated with shareholders' dividend. Results in the Model I (0.616>0.05) are insignificant failed to reject null hypothesis. Thus Model I indicates that board diversity in terms of ethnicity and education enhance the shareholder's wealth in terms of their dividends payouts. Hence, H1 and H2 reports board diversity enhance dividends payout to shareholders.

Furthermore, hierarchical regression investigates H4(a), H4(b) and H4(c) through interaction effect of corporate sector involve in investment efficiency by Model II. H4(a) tests that efficiency in investment strengthen the relationship between ethnic diversity and dividends payouts. Higher level of investment efficiency promotes shareholder's payouts through higher ethnicity in the board. Results are significant and positive (0.003<0.05). H4(b) investigates the moderating effect of investment efficiency between educational diversity and dividends. We are failed to reject null hypotheses at 10 % level of confidence (0.063<0.10). However, investment efficiency is unable to moderate between gender diversity and dividends payout. Hence we reject null hypothesis for gender diversity (0.149>0.05). Hence we conclude that corporate sector involve in the investment efficiency positively moderated between board diversity (ethnicity and education) and the shareholder's payouts.

For further confirmation of interaction effects, we plot a graph between board diversity and shareholders dividends. Plot graph presents independent variables (ethnicity and education) on x-axis with low and high parameters, but dependent variable (dividends payouts on y-axis). Findings of the plot show a positive and significant impact of ethnic and educational diversity on shareholders dividends moderated by firms efficient in investment. However, investment efficiency not moderated to gender diversity.

Table 4
Panel Regression Model

	Model I		**Model II**		
Main Effect					
Constant	0.0673***		0.080***		
	(0.0243)		(0.007)		
EHD	0.197***		0.207***		
	(0.000)		(0.000)		
EUD	0.0088		0.014		
	(0.616)		(0.351)		
GND	0.461***		0.442***		**Table IV**
	(0.000)		(0.000)		
IE	0.015**		0.013		Hierarchical
	(0.014)		(0.669)		Regression
Interaction Effect					
EHD×IE			0.095***		
			(0.003)		
EUD×IE			0.007*		
			(0.063)		
GND×IE			0.066		
			(0.149)		
	R-square	R-square Change	F	Sig	
Model I	0.227	0.227	44.76***	(0.000)	
Model II	0.240	0.013	3.466**	(0.016)	

Note : N=616 for all models; () denotes p-value at ***p<0.01, **p< 0.05, *p< 0.10 respectively

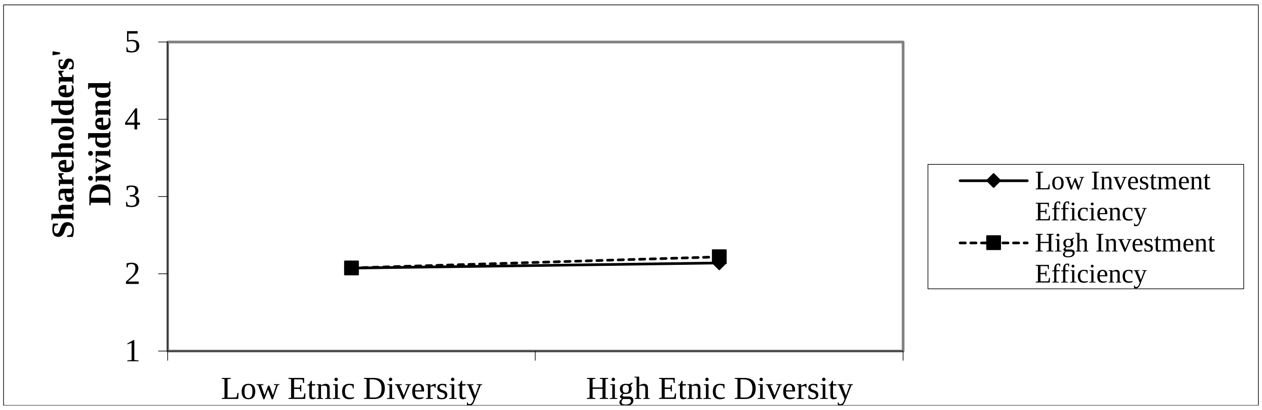

Figure 2: Moderating effect of Ethnic diversity

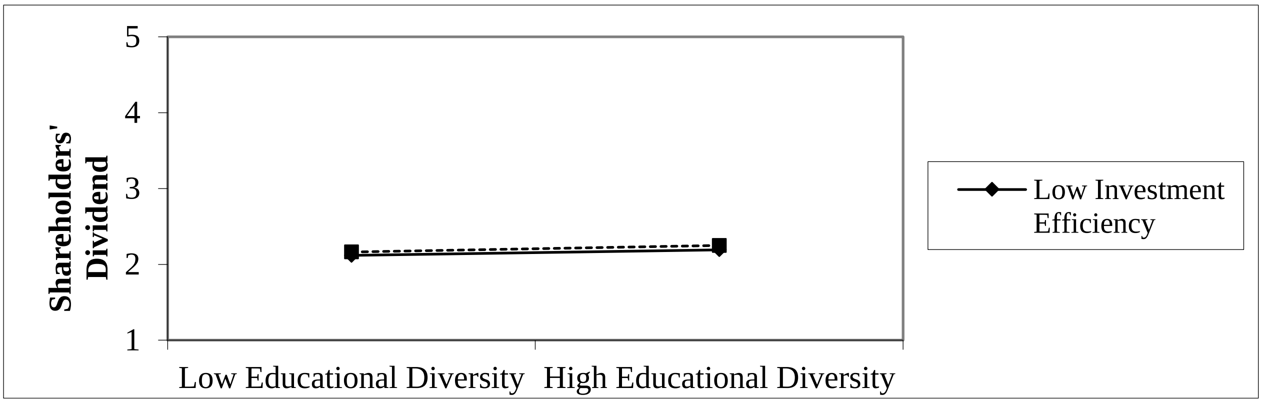

Figure 3: Moderating effect of gender diversity

6. Discussions and Conclusions

Current study aims to investigate the impact of board diversity on dividend policy and interaction of firms incorporated in investment efficiency. Panel regression models employed to test the impact of board diversity of dividend policy while interaction effect of efficient investment analyzed through hierarchical regression model. In the light of investment efficiency, our findings show that firms achieving efficient investment have greater tendency to enhance shareholder’s dividends. This study supports the moderating impact of efficient investment on the relationship between board diversity and dividend policy. However, moderation effect is significant of ethnic and educational diversity but gender diversity is insignificant. Our results found that firms achieving investment efficiency with diverse ethnic and educational backgrounds are significantly promoting shareholder’s wealth in terms dividends.

Current study found a significant association between ethnic diversity and dividend policy confirms the idea of (Kolev & McNamara, 2020). Ooi et al. (2017) found a significant and positive association between educational diversity and dividend policy supports our results. Hence, we conclude that investment efficiency positive and significantly enhance the relationship between ethnic diversity to dividends payouts and educational diversity to dividends payouts. However, in case of gender diversity moderated effect of investment efficiency is insignificant for dividends payouts. Gender diversity founds a distinction in Pakistan for shareholder’s payouts as compared to developed nations. Findings suggest that still women workforce in Pakistan is not free of biasedness. Ratio of women in board size is not significant and up to mark. However, diverse ethnicity and education in the corporate board has significant contribution in shareholder payout by achievement of investment efficiency.

6.1. Limitations and Policy Implications

This study limits in the geographical and demographical dimensions of corporate sector. For instance, the study conducted in the geographical context of Pakistan. With the concerned subject firms are listed the Pakistan stock exchange are accounted for. Study based on the demographical variables like education, ethnicity and gender. Other demographical factors foreign experience, age and culture not included in the study.

Further research can be in different geographic and demographics. Studies can incorporate other demographics prominent in their respective regions either they developed or developing countries. Our proposed model can apply in the developing country like Bangladesh. In addition to its future studies can include additional factors of investment efficiency.

Authors Contribution

Kamran Mohy-Ud-Din: Draft write up
Riaz Ahmad: Data analysis
Hafiz Muhammad Ishaq: Developed conceptual and theoretical framework
Muhammad Akram: Editing of references and citation

Conflict of Interests/Disclosures

The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

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