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THE MODERATING IMPACT OF BOARD GENDER DIVERSITY ON THE RELATIONSHIP BETWEEN OWNERSHIP STRUCTURE AND FIRM PERFORMANCE AN IMPIRICAL STUDY

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Abstract

This research aims to explore the impact of board gender diversity on the relationship between ownership structure and firm performance. The research employs sample of 26 non- financial firms listed on the S&P EGX 30 ESG index for the period of 2016-2021. The study utilized accounting-based measures (ROA & ROE) and market-based measure (EPS) to evaluate the firms' performance, ownership identity (family, foreign, institutional, managerial) to evaluate the firm's ownership structure as well as leverage, board independence, firm size, board meetings, and board size as control variables. The research findings indicated that ownership structure have significant positive impact on the firm performance (using both accounting based and market-based measures). Moreover, board gender diversity moderates the relationship between ownership structure and firm performance. The study findings have an important implication for regulators they are advised to establish policies aimed at empowering women in firms board of directors and guidelines that steer the ownership and board structure in the ideal manner to enhance firm performance.

Keywords: board gender diversity, ownership structure, family ownership, foreign ownership, institutional ownership, managerial ownership, firm performance.

1. Introduction

Ownership structure and board of directors are essential internal corporate governance mechanisms in today's challenging environment, having a proper ownership structure, and implementing effective corporate governance are two necessary criteria moreover, the company's performance is influenced by both its corporate governance and by its ownership structure (Zraiq and Fadzil 2018). The company's ownership structure is considered to be among the most critical elements that deals with the interests of the firm's shareholders and is responsible for minimizing agency problems between managers and stockholders in addition to conflicts between the company's majority and minority stockholders (Dakhlallha et al., 2019). Therefore, it is argued that ownership structure could enhance the convergence between shareholders' and managers interests and reduce opportunistic actions arising from a conflict of interests (Okewale et al., 2020). There are a considerable number of research in the corporate governance literature that mainly concentrated on the ownership structure nevertheless, there is currently no consensus concerning the ownership-performance association (Rashid 2020).

On the other hand, a notable feature of these research results, is that they are not very conclusive or helpful (Karim et al., 2021). One possible explanation for these results is that the firm owners have little capacity to impact management's decisions and actions. As their ability to influence the company's day-to-day activities and strategic decisions

is limited unless they participate on the board of directors (Rashid 2020). Therefore, shareholders use their voting power to restructure the board of directors to ensure that they better serve their interests. As a result, it can be argued that ownership structure and firm performance relationship is much more complex than the findings of several preceding studies indicate (Rashid 2020).

Nevertheless, the board of directors supervises and oversees the company, decides the company's strategy, monitors, and supervises management, employs, supervises, compensates top management, links the firm with the external environment and protects shareholders' interests. Within this context, the board of directors performs a vital role (Karim et al., 2021). In addition, the social challenges, such as gender diversity, represent one of the most critical international challenges that face the economic actors in the twenty-first decade (Byron and Post 2016; Li and Chen 2018).

On the other hand, the boards of directors have already been blamed for the failures of the companies as well as the dropping value of stocks held by shareholders. All such business failures have already been attributed to several factors, some of which include the board of directors' inefficient monitoring, and inadequate control by business executives who seek their own self-interests, as well as the board of directors' absence of accountability to firm's stakeholders. Therefore, an entity's performance and value will improve significantly if its managers are subjected to appropriate monitoring and discipline

mechanisms (Kılıç, and Kuzey 2016). Besides, Gender diversity on corporate boards of directors' results in increased innovation, creativity, and a broader scope of points of view during the board discussions and decision-making process, and improved efficiency of problem solving, all of which could be valuable to the organization's overall performance (Pidani et al., 2020). The existing literature indicates that gender diversity in the boardroom develops higher levels of innovation and efficient decision - making process on both the personal and operational levels. This is because the functioning of the board is strongly connected to the firm's performance.

The significance of board gender diversity issue has expanded throughout the recent decades, and several states now have laws that require at least one female director on each board (Kılıç, and Kuzey 2016). While the participation of women work-force has dramatically increased in some domains, owing to the fact that females have progressively climbed the ladder of management in historically male-dominated fields. Studies on gender diversity on board of directors' positions indicates that the percentage of females on board seats is still considerably under-represented (Pidani et al., 2020).

The question of whether increased gender diversity on a firm's board of directors relates to better business performance is a topic that is frequently debated among businesses located in developed nations, such as those located in the in European countries or United States of America (USA) (Li and Chen 2018). Therefore, according to the above

discussion, this research seeks to fill this gab by empirically examine the direct relationship between ownership structure focusing on the owners Identity (Family, Foreign, Institutional, Managerial) and firm performance of the top listed firms in Egypt, not only but also investigating the impact of board gender diversity on this relationship as the focus of this is to identify such complications in the Egyptian market in order to reach findings about how further Egypt lags from developing market rivals.

This research adds to the literature in many ways, it contributes by applying the study on the emerging market of Egypt. Furthermore, due to the diversity of Egyptian companies’ ownership structures, Egypt is an ideal case to explore the relationship between the firm's ownership structure and performance as well as the political and legal calls that mandate and encourage women involvement in high managerial positions such as the board of directors. Besides, the research might add value to the Egyptian legislators and regulators while addressing rules requiring women's participation on the board of directors.

2. Literature review and hypotheses development.

2.1. Family ownership: Thomsen and Pedersen (2000) defined family ownership “as a dual role for the family as both owners and managers of the company”. Theoretically, family owners have a significant influence on their firms greater than non-family managers. Because of their long term and continuance existence in the firm and to protect

family members, especially those who have a higher share in the business. Family businesses, in comparison to other types of businesses, typically have distinctive and distinguishable characteristics. Whereas in family businesses, members of the family hold important roles in the company, such as those of senior executives or company directors, and they are proactively involved in the company’s operations. The second feature of family-owned businesses is that they place a greater emphasis on their long-term existence than with short-term earnings. Because of this, they typically view their businesses as intrinsic family assets that should be passed down to next generations of their family (Langit and Adhariani 2017). The third distinguishing feature of family businesses is that they often have less diversified portfolios than other types of businesses due to the fact that family members hold concentrated ownership in the business.

Hence, majority of the investor's assets are invested in the company; family companies are risk adverse and seek to safeguard their wealth and capital instead of acting in a way that is more risky or innovative. (Langit and Adhariani 2017). Moreover, families will most likely ignore the short-term benefits of earning management owing to their desire to pass on their business to their relatives and safeguard family name’s reputation. Therefore, family ownership avoids the practices of opportunistic behavior in earnings in order to protect their family reputation, firm’s long run performance and their wealth, as these practices may potentially harm their image (De Massis et al., 2015).

Accordingly, family firms have incentives to disclose higher quality earnings than non-family firms. Briefly family firms seek high level of earnings quality (González et al., 2015). Various prior research illustrated that family ownership positively impact on the company's performance (Isakov and Weisskopf 2014; Poutziouris et al., 2015; Zraiq and Fadzil 2018; Eugster and Isakov 2019; Al-Janadi, 2021), while other research documented negative relationship (Jiang and Peng, 2011; Sener, 2014; Putra et al., 2020). Moreover, other studies documented inverted U-shape relationship (Kowalewski et al., 2010; Guillaume, 2018).

2.2. Foreign ownership: Foreign ownership is a type of ownership where foreign investors have a share in the firms that invest in local market. Foreign investors can be considered as less informed investors and come from straightforward systems. They may request a high level of disclosure of financial information in contrast with local investors who are aware and more informed, as they can obtain the financial information and details they need (Zraiq and Fadzil 2018). Furthermore, because of the isolation of foreign investors from domestic investors and having less information, foreign investors are more likely to carefully monitor the Business's activities (Rashid, 2020). However, when foreign investors have control over the firm, they tend to be a part of the insider shareholders and act like local investors which in turn enhance the firm performance (Ananchoticul, 2007; Mangena and Tauringana, 2007). Therefore, foreign investors are

likely to respond even more to the firm performance like the minority shareholders who prefer in turn to protect their investment by high firm performance (Zraiq and Fadzil 2018). Moreover, foreign ownership is important due to its strong monitoring of managers which in turns minimize agency costs (Musallam 2015). Besides, Lau and Tong (2008) argue that foreign ownership provides the firms with a wealthy experience in how to deal with managerial opportunism, minimizing agency conflicts across various national and cultural environments which reflect that foreign investors are better and more experienced monitors, which in turn allow business to access more advanced technical, managerial talents, and financial resources. Many investors in the market perceive the existence of foreign investors' ownership structure positively. Foreign investors with significant shareholdings have a higher level of dedication, and their long-term engagement has a favorable enfluence on the business performance. Since foreign investors have access to less information than domestic investors, it's assumed that they conduct many calculations and analysis before investing (Rashid 2020). Prior studies revealed mixed results on the foreign ownership and the firm's performance association, many studies revealed positive association (Al-Matari et al., 2017; Abdallah and Ismail, 2017; Iwasaki et al., 2022). Moreover, other prior research documented negative association (Elghuweel et al., 2017; Talab et al., 2018; Al-Janadi, 2021) while Guillaume, (2018) found that foreign ownership and company's performance have Inverted U-shape association.

2.3 Institutional ownership : Institutional ownership refers to the acquisition of shares by other institutions, institutional investors are those investors who acquire or hold shares on behalf of other institutions, including insurance firms, mutual funds, and other financial entities, such as banks (Ali et al., 2022). There are various arguments concerning institutional shareholders' role as controlling shareholders. Previous research was also unable to determine if institutional investors reduce or increase agency costs. The treatment of institutional shareholders as a homogeneous group may be the reason of these conflicting arguments (Guizani and Abdalkrim 2021). Nevertheless, institutional investors have distinct attributes that contribute to various levels of corporate governance activism. One key distinguishing characteristic is that the investment horizons of the institutions vary. Institutional shareholders who are actively involved in the company can help to reduce agency conflict (Guizani and Abdalkrim 2021). Institutions that have long-term investment goals are more inclined to participate in monitoring to encourage policies designed to increase the company's long-term value. Moreover, institutional investors have the capacity as well as the means to monitor, control, and exert influence over the management activities, they have the potential to significantly restrict managerial opportunistic earnings management (Guizani and Abdalkrim 2021). Sophisticated investors, such as institutional owners, utilize their voting power in order to influence the boards' composition, to improve the efficiency of the monitoring role of outside directors (Rashid, 2020). Many prior

studies asserted that institutional ownership has a favorable or positive impact on the company's performance (Kansil and Singh, 2018; Yeh, 2019; Al-Janadi, 2021). A probable explanation for this is that institutional directors are perceived to be more competent, professional, and experienced, which might also lead investors to view firms with more institutional ownership as more potential. In comparison to their counterparts who lack these characteristics. Furthermore, institutional investors are expected to retain large amounts of stock for long durations than other stockholders (Rashid, 2020). Consequently, institutional investors are thought to have more influence than individual investors, and their active engagement in management can help to minimize agency problem (Colpan and Yoshikawa, 2012). In addition, institutional shareholders large-scale divestment in the form of stock sales may be interpreted negatively by other investors, which may adversely affect the price of stocks in the market (Hutchinson et al., 2015). Nevertheless, there are various studies that reveal a negative association between institutional ownership and the performance (Wang, 2019; Tsouknidis, 2019; Wijaya et al., 2020; Satt et al., 2021).

2.4 Managerial ownership: Managerial ownership refers to the stocks held by the firm’s managers (Sholikhah and Baroroh 2021). The owner of a company is considered to have managerial ownership if he/she is a shareholder in the company and actively participate in the management of the business. It is beneficial to the company’s performance if its managers own shares in the company. By owning

those shares, the manager will feel more like an owner of the company than just a salaried employee. Managers will be more proactive in serving shareholders goals because of the increased amount of managerial ownership in the company. Therefore, it is believed that management will be more persistent in carrying out business operations if they own shares in the company themselves. This will ensure the existence of a balance between the shareholders' and managers interests, that will ultimately lead to enhanced firm performance (Estiasih et al., 2019). Jensen and Meckling (1976) argue that managers who own shares in the company are better capable of minimizing agency conflicts. When decisions are taken, managers who own a portion of the company's shares will directly benefit from those decisions. However, if those decisions turn out to be inaccurate, managers should also be ready to bear the consequences of those decisions directly. Therefore, managerial ownership could indeed serve as an incentive that could enhance firm performance if it is properly utilized (Estiasih et al., 2019). Hence the concept of convergent interests suggests that there would be a positive association between managerial ownership and company's performance. Thus, the objectives of managerial owners are integrated with those of other shareholders in the pursuit of maximizing profits (Shan 2019). Prior studies revealed contradictory findings on the relationship between managerial ownership and company's performance. Many studies documented a positive association (Talab et al., 2018; Al-Janadi, 2021;

Iwasaki et al., 2022). While other studies findings indicated negative relationship (Sani 2020; Shao 2018; Al-Matari and Al-Arussi 2016).

2.4 Board gender diversity: Board gender diversity has received an increasing interest during the past decades, it has been a notable issue that has attracted attention of various parties such as government agencies, scholars, business entities and the public (Kılıç and Kuzey 2016). Because of media reports, shareholder recommendations from advocacy organizations, and policy statements by large institutional investors, the issue has retained a significant public profile (Carter et al., 2003). Despite the progress made in promoting gender diversity in Firms, the issue is very far from settlement the quest for more gender diversity now has been extended to include deciding who should be on the board of directors (Abdelzaher and Abdelzaher 2019). Prior studies documented that women are severely underrepresented in the firms' board (Perryman et al., 2016). Actually, this isn't limited to a specific country, women involvement on board has been a highly debated topic around the world as there are policies that forces women involvement on boards (Abdelzaher and Abdelzaher 2019). The impact of board gender diversity on the business performance has an enhanced attention due to the major corporate scandals like Enron, Parmalat, Tyco, and WorldCom (Kılıç and Kuzey 2016). Several experts asked for more board diversity following these scandals. However, it is stated that, in addition to ethical and social concerns, according to the resource dependency theory women participation in board may provide access

to a wider range of human capital, which might have significant impacts for a company's creating competitive advantage and improving its performance (Dezsö and Ross 2012).

Women's presence on boards of directors is growing slowly but consistently (Pathan and Faff 2013). Actuality, various countries encourage women to participate on boards of directors, some even make it mandatory for firms to hire one woman director at least (Carter et al., 2010). The challenge of gender equality has also found its way into the political agenda in Egypt. The fundamental goal of these legislative initiatives is to improve the ratio of females recruited onto boards of directors in order to build an effective board that is capable of protecting the interests of shareholders. These changes have focused attention on board gender diversity (Kılıç, M., and Kuzey, C. 2016). Nevertheless, according to the inconsistent and even conflicting preceding studies' findings there is no agreement concerning the relationship between the existence of women on the board and the business performance (Kılıç and Kuzey 2016). Moreover, these conflicting results are unsurprising, due to the theoretical and empirical complexity of the relationship between board diversity and firm performance (Carter et al., 2008).

The moderating impact of board gender diversity: Even though most of the preceding studies documented positive relationship between ownership structure (Family, foreign, institutional, and managerial) and business performance, other studies found either a negative relation or even no association at all. The primary explanation for these results may

be because shareholders (owners) have relatively minimal capability, in most of the situations, to affect the management's activities (since general shareholders can't participate in daily activities or critical decisions) except if they are members of the business board of directors. As mentioned earlier, shareholders utilized their voting power (using their ownership capacities) to form and restructure the firm's board of directors to assure that the corporate board guides the activities of the business in the benefit of the company's stockholders. As a result, one conclusion that can be drawn from these findings is that the association between ownership structure and the business performance is much more sophisticated than the conclusions that can be derived from the findings of several earlier studies. Therefore, the study aims to explore the moderating impact of board gender diversity on the ownership - performance relationship.

Based on the above literature the research hypotheses could be formulated as follows:

H1: There is a relationship between ownership structure and firm performance

H1a: There is a significant relationship between family ownership and firm performance

H1b: There is a significant relationship between foreign ownership and firm performance

H1c: There is a significant relationship between institutional ownership and firm performance

H1d: There is a significant relationship between managerial ownership and firm performance

H2: Board gender diversity moderates the relationship between ownership structure and firm performance.

3. Research methodology:

3.1 Sample selection: the research is based on a sample of 26 non-financial firms that are traded on the S&P EGX 30 ESG index. The S&P/EGX ESG index is developed by The Egyptian Institute of Directors, Standard & Poor's, and Crisil. It consists of companies that have demonstrated the highest performance on the Egyptian market when assessed against environmental, social, and governance criteria. In accordance with the findings of previous research, financial companies were excluded because these companies adhere to a distinct set of accounting standards and governance. The research data is collected for the years 2016–2021 from the firm’s financial statements, annual report, board of directors’ reports and corporate governance reports that were obtained by downloading them from company's website. The EGX's classification is utilized to categorize the sample firms into sectors. Table 1 displays the firms’ sectoral representation.

Table 1: The study sample sector distribution

Sector	Number
Chemicals and oils	6
Real estate	4
Construction materials	3
Food and beverages	3
Industrial Goods, Services and Automobiles	4
Healthcare and pharmaceuticals	3
Telecommunication	1
Travel and leisure	1
Technology	1
total	26

Source: prepared by the author

3.2 Research variables and its measurements

3.2.1 Dependent variable: This study employs both accounting and market-based measures in order to measure the firm performance. The return on assets (ROA) is represented as a percent after being calculated through dividing the net income by the total assets. The return on equity (ROE) is the firm's net income divided by its total equity. Although both ROA and ROE are retrospective measures that mainly depend on internal information, they have been utilized to simplify comparability with the preceding research. Furthermore, financial investors and analysts tend to emphasize ROA and ROE while making investment decisions (Rashid 2020). The earnings per share (EPS) measure is used to determine how much money a company has made from each stock of its common stock (Simionescu and Gherghina, 2014).

3.2.2 Independent variable: The ownership structure is among the most crucial variables in the CG literature, and it varies over time whenever the firm issues additional shares or engages in heavy trading by the current shareholders (Rashid). The shareholder's identity is mainly what determine who has ability to make decisions in the business (Kumar and Zattoni, 2015). The firm's ownership structure could be represented by many categories of owners, such as Family owners, foreign owners, Managerial owners, and Institutional shareholders. Table 2 show the study variables and measurements.

Regression model is as follows

FIRM PERFORMANCE $= B_0 + B_1$ ***FAM OWN*** $+ B_2$ ***FOREIGN OWN*** $+ B_3$ ***INST OWN*** $+ B_4$ ***MANG OWN*** $+ B_5$ ***B SIZE*** $+ B_6$ ***LEV*** $+ B_7$ ***B MEETINGS*** $+ B_8$ ***F SIZE*** $+ B_9$ ***B IND***

Table No. (2) Study Variables

Variable	Variable Label	Label	Measurement
Dependent Variable	Return on Assets Return on Equity Earnings Per Share	ROA ROE EPS	Net income / total assets. net income / total equity net income / total no. of outstanding common stocks
Independent Variables Ownership structure	a. Family ownership b. Foreign ownership c. Institutional ownership d. Managerial ownership	Fam own Foreign own Inst own Mang own	% of stocks held by family owners % of stocks held by foreign owners % of stocks held by institutional owners % of stocks held by managers
Moderator Variable	Board Gender diversity	BGD	% of women directors on the board
Control variables	Firm size Leverage Board size Board meetings Board Independence	F size Lev B size B meetings B ind	Natural log. of the total assets Total liabilities / total assets Total no. of board members Number of Board Meetings No. independent director / total no. of the board members

Source: Prepared by the researcher based on previous studies

3.3Results and discussion

3.3.1 Descriptive statistics for study variables

Table 2

Table No. (2) Descriptive analysis for study variables

Variable	Obs	Mean	Std. Dev.	Min	Max
FamilyOwn	156	.228	.606	0	7.1
ForeignOwn	156	.115	.211	0	.88
InstitutionalOwn	156	.374	.353	0	1
ManagerialOwn	156	.025	.067	0	.46
ROA	156	.063	.064	-.109	.288
ROE	156	.176	.314	-1.569	2.394
EPS	156	1.672	39.292	-244	298
Bgd	156	.099	.087	0	.33
BoardSize	156	9.922	3.415	0	19
leverage	156	2.959	3.047	-21.903	14.473
BoardMet	156	9.456	5.502	0	24
FirmSize	156	22.156	1.812	16.203	25.656
IndBoard	156	.744	.164	0	.929

Source: output from Stata v15 program

The standard deviation shows some variables is greater than the mean which means this variable does not follow the normal distribution. Therefore, we use the Winsorizing Data method to solve this problem.

3.3.2 Correlation matrix for study variables

In each of the study models, the Pearson correlation matrix was utilized to assess the correlation between the independent variables, as well as the correlation between independent and dependent variables.

Table No. (3) Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) FamilyOwn	1.000												
(2) ForeignOwn	-0.141	1.000											
(3) InstitutionalOwn	-0.193	-0.516	1.000										
(4) ManagerialOwn	0.026	-0.021	-0.225	1.000									
(5) ROA	0.017	0.041	0.114	0.131	1.000								
(6) ROE	0.049	-0.042	0.037	0.102	0.354	1.000							
(7) EPS	0.006	0.019	0.003	0.010	0.243	0.136	1.000						
(8) Bgd	0.036	0.254	0.110	0.115	0.092	0.085	0.021	1.000					
(9) BoardSize	-0.074	-0.103	0.099	0.044	0.309	0.186	0.028	0.122	1.000				
(10) leverage	0.048	-0.106	-0.011	0.167	0.067	0.277	0.343	0.165	-0.149	1.000			
(11) BoardMet	-0.172	-0.001	0.555	-0.150	0.165	0.126	0.036	0.042	0.121	-0.092	1.000		
(12) FirmSize	0.110	-0.185	-0.105	-0.050	0.171	0.007	0.021	0.060	0.112	0.056	-0.091	1.000	
(13) IndBoard	-0.133	0.080	0.303	-0.313	0.074	0.077	0.020	0.230	0.401	-0.053	0.373	0.019	1.000

Source: output from Stata v15 program

From the above statistical data displayed in Table (3), there is a direct relationship between the dependent and independent variables of the study models. Also results show that the largest correlation coefficient value is 0.55, which indicates that there is no correlation problem between the variables.

3.3.3 Regression results

The research utilizes 4 models to test the 2 main hypotheses, the first three models test the direct relationship between the independent variable ownership structure (family, foreign, institutional and managerial) and the dependent variable (firm performance) without the existence of moderator variable (board gender diversity). And then the research will use one model to test the influence of the moderator variable (board gender diversity) on the relationship between ownership structure and firm performance.

The results of the first hypothesis is presented from three models. Model 1 show that family, foreign, institutional, and managerial ownership have a significant positive impact on the firm performance using ROA. Furthermore, model 2 display that family, foreign, institutional, and managerial ownership have a significant positive impact on the firm performance using ROE. Moreover, as shown in

	Model 1 ROA		Model 2 ROE		Model 3 EPS	
ROA	**Coef.**	**p-value**	**Coef.**	**p-value**	**Coef.**	**p-value**
FamilyOwn	**.140**	**.001**	**.038**	**.003**	**.283**	**.004**
ForeignOwn	**.183**	**.002**	**.134**	**.021**	**.331**	**.002**
InstitutionalOwn	**.113**	**.021**	**.063**	**.004**	**.997**	**.001**
ManagerialOwn	**.222**	**.003**	**.747**	**.006**	**.523**	**.006**
BoardSize	**.094**	**.019**	**.009**	**.002**	**.174**	**.006**
leverage	**.013**	**.017**	**.031**	**.000**	**.898**	**.030**
BoardMet	**.024**	**.018**	**.008**	**.008**	**.706**	**.004**
FirmSize	**.033**	**.008**	**.002**	**.001**	**.319**	**.009**
IndBoard	**.055**	**.004**	**.112**	**.002**	**.868**	**.008**
Constant	**.095**	**.008**	**.079**	**.007**	**.373**	**.009**

model 3, family, foreign, institutional, and managerial ownership has a significant positive impact on the firm performance using EPS. Table 4 the study regression results.

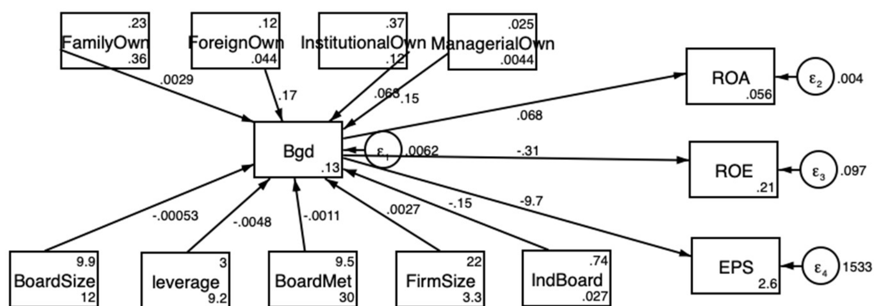
Table 4 the study regression results.

Source: prepared by the author

According to the research results, the research accepts H1 that ownership has a significant impact on the firm performance using both accounting and market-based measures as well as H1a, H1b, H1c, and H1d are also accepted. This result is useful since it can help investors to take into consideration the ownership structure of the listed companies on the EGX 100. In this way, investors can make rational decisions concerning their investments.

Path analysis usually involves creating a path diagram in which the relationships between all the variables and the causal direction between them are specifically identified. Relationships as they exist based on the analysis performed. Path patterns sometimes consist of independent and dependent variables illustrated graphically by squares or rectangles, and variables that are independent variables and not dependent variables are called "external" graphically, as these variable outer boxes are located on the outer edges of the model and have arrows with only one head. The next Figure show structural equation modeling for hypothesis.

After the existence of board gender diversity as a moderator variable, the results changed to be more reliable and logical by enhancing the



relationship between ownership structure and firm performance using accounting-based measures (ROA & ROE), except for market based measure (EPS). Therefore, the research accepts H2 because there is a positive significant relationship between ownership structure and firm performance with the existence of board gender diversity as a moderator variable.

Figure No. Structural equation modeling

Source: output from Stata v15 program.

from the results of path analysis, we conclude the independent variable and control variable has a positive impact on the dependent variable ROA through Board gender diversity by more than 6%, But the impact on Eps is negative by -9.7, and it has the same effect on the variable Roe with a value of -31%. Also, independent variables (FamilyOwn – ForeignOwn – InstitutionalOwn – ManagerialOwn) has a positive impact on Board gender diversity by (0.009 – 0.17 – 0.065 – 0.15). From the results, we accepted H2 ***"Board gender diversity moderates the relationship between ownership structure and firm performance"***. Because there is a relation are a significance at level 0.05.

4. Conclusion and recommendations:

The research investigated how board gender diversity moderates the relationship between ownership structure and firm performance of listed firms in the emerging economy of Egypt. The direct impact model demonstrated a significant positive impact of family ownership on accounting-based and market-based indicators, which is consistent with previous studies (Isakov and Weisskopf 2014; Poutziouris et al., 2015; Zraiq and Fadzil 2018; Eugster and Isakov 2019; Al-Janadi, 2021). Foreign ownership has a significant positive impact on firm performance (using ROA, ROE, and EPS that is consistent with earlier literature (Al-Matari et al., 2017; Abdallah and Ismail, 2017; Iwasaki et al., 2022). Nevertheless, institutional ownership is positively and significantly related to company performance (using ROA, ROE, EPS),

which is also consistent with previous findings ((Kansil and Singh, 2018; Yeh, 2019; Rashid, 2020; Al-Janadi, 2021). Moreover, Managerial ownership revealed a significant positive association with the firm performance (using ROA, ROE, and EPS) which is consistent with other studies results (Talab et al., 2018; Al-Janadi, 2021; Iwasaki et al., 2022).

Adding board gender diversity as a moderating variable, the results indicated a strong positive association between ownership structure and control variables on ROA and ROE in Egypt. This result confirms the arguments of the resource dependency theory and is in line with the findings of other studies (Nguyen et al., 2020; Ramadan and Hassan 2021; Barhama et al. 2021), contradictory to the claim that the existence of females in corporate board of directors have a negative impact on performance (Wang et al., 2019; Lim et al., 2019). However, the moderating impact of board gender diversity showed negative impact on EPS. These findings indicate a partial acceptance of H2 that board gender diversity moderates the relationship between ownership structure and company performance. The research findings illustrate a number of crucial facts that could be valuable for firm's management and policymakers. Company management may reform its board of directors and ownership structure in order to enhance the firm's performance. Policymakers could establish laws and guidelines that steer the ownership and board structure in the ideal manner for the purpose of achieving superior performance. The study results also demonstrates that Egypt's efforts to promote gender equality and empower women are on the right track. Therefore, policymakers should seize on these policies.

There are some limitations that point to possible directions for future research. The scope limitation is confined to companies that are listed on the Egyptian Stock Exchange (non-financial S&P EGX 30 ESG Index firms). Regarding corporate governance, the study focused only on internal corporate governance (Ownership structure – board gender diversity) and it also ignored the external corporate governance. Furthermore, time limitation is confined to six years only from 2016 to 2021 Due to the availability of data.

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