

FEMALES ON BOARD AND SUSTAINABILITY PERFORMANCE IN A DEVELOPING COUNTRY: EVIDENCE FROM EGYPT

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Abstract

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This study aims at filling the existing research gap by scrutinizing the influence of females on management boards on sustainability performance in a developing country using cross-sectional data from the Egyptian Stock Exchange (EGX) of non-financial companies over the period 2012–2019. To the best of our knowledge, the analysis is considered one of the earliest empirical studies that tests the relationship of females on management board and sustainability performance in Egypt. Our results indicate that female representation on board has a positive impact on sustainability performance, which demonstrates that companies that have females on their boards have a better sustainability performance. Moreover, board size and independence enhance sustainability performance. Thus, this study has imperative repercussions on users and companies' boards in Egypt, which recommend that current Egyptian regulatory bodies would take further steps that may significantly impact the environmental, social and corporate governance imminent in Egypt.

Keywords: Sustainability Performance, Female on Board, Corporate Governance, Corporate Social Responsibility, Management Board

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1. INTRODUCTION

Recently, it has been accepted by the public that companies should consider their profits as well as have more responsibility toward social and environmental issues (Carroll & Shabana, 2010). Consequently, contemporary studies have focused on sustainability performance, which examined the association between business practices and sustainability commitment (Ağan, Kuzey, Acar, & Açıkgöz, 2016; Mohamed, Abu-hashim, & Belal, 2018). Therefore, sustainability performance has been a fundamental part of companies, and it is no longer conventional to solely focus on economic

goals. Although profit maximization is still imperative for all businesses, the board of directors should balance between both financial and non-financial objectives (Kilic, 2015), which emphasizes that management companies' boards should consider sustainability performance as a top priority (Elkington, 2006; Jamali, Safieddine, & Rabbath, 2008; Jo & Harjoto, 2012; Harjoto, Laksmana, & Lee, 2015). The growing attention to sustainability performance has aroused a greater need for non-financial reports (Torelli, Balluchi, & Lazzini, 2020).

It is claimed that when companies' board of directors and senior management consider social responsibility values, they attain economic value

creation goals (Kemp, 2011), where the board of directors enhances the strategic and financial decision-making process (Ferreira, 2010), and the corporate sustainability practices (Liao, Luo, & Tang, 2015); thus protecting the interests of stakeholders of companies (Pérez Carrillo, 2007; Ayuso & Argandoña, 2009). The responsibilities of the board of directors have been diversified into a wider range to better satisfy the interests of multiple stakeholders; most importantly the diversity on board, which ratify ethical behaviors and promote transparency disclosure, which reveals that the board of directors diversity is a significant stimulus to social and ecological accomplishment (Post, Rahman, & Rubow, 2011; Laurence & Bentley, 2016).

Generally, the literature mostly agrees that the board of directors' composition of multiple characteristics impacts firm performance (Bhagat & Black, 1999; Duru, Iyengar, & Zampelli, 2016). Consistently, various board traits impact the effectiveness of corporate governance, and the quantity and quality of corporate social responsibility disclosure: board independence, size, CEO duality, and board diversity (Chan, Watson, & Woodliff, 2014). Thus, board diversity has captured the attention of policymakers, companies, media, and academic scholars in many countries (Dhir, 2015). Moreover, it has been argued that heterogeneous management attains better performance when the uncertainty level increases, while the homogeneous groups perform better in stable conditions. However, the latter does not have the ability to include multiple perspectives and have the ability to tolerate by social rules (Zhu, Shen, & Hillman, 2014; Adams et al., 2018), which may lead to more pressure toward conformity (Miller & del Carmen Triana, 2009), thus weakening the quality and multiplicity of board dispute (Grady, 1999). Conversely, heterogeneous boards have different skills, knowledge, ability, and information (Nielsen & Huse, 2010), which promotes performance (van Knippenberg, De Dreu, & Norman, 2004). Diversity in terms of gender, ethnicity, or cultural background leads to a better comprehension of the company's market position, creativity, and innovation as well as more problem solving (Carter, Simkins, & Simpson, 2003).

Literature has studied the impact of gender diversity on financial performance (Terjesen, Sealy, & Singh, 2009; Gul, Hutchinson, & Lai, 2013; Nguyen, Locke, & Reddy, 2014), effective governance (del Carmen Triana, Miller, & Trzebiatowski, 2014; Alm & Winberg, 2016), annual reports disclosure (Nalikka, 2009), and CSR disclosure (Giannarakis, 2014b). Similar studies have revealed that boards with more female members have a better corporate social responsibility quality (Fernandez-Feijoo, Romero, & Ruiz, 2012; Zhang, Zhu, & Ding, 2013), which improves the board's efficiency (Terjesen, Aguilera, & Lorenz, 2015). According to the quantitative analysis, at least 47% of companies in Egypt have at least one female board member, and women make up 14% of all board members (listed and private companies). Women made up 10% of the boardrooms of publicly traded businesses, with three women serving as chairpersons of their boards. In addition, 39% of companies have one or two female board members, and 8% have three or

more. In comparison to their sub-Saharan peers, women held roughly 8.5% of Egyptian boardrooms in 2015, according to a survey conducted by the African Development Bank (ADB). Despite the evidence that having more women on boards improves financial performance, board gender diversity in the Middle East and North Africa continues to expand slowly. Yet, there is dearth of research studies in MENA region compared to developing countries. Accordingly, this study addresses this gap by examining board gender diversity in Egypt, which presents an inimitable setting that is merit more devotion (Ethical Boardroom, <https://ethicalboardroom.com/>). The major question of our study is how female directors influence the sustainability performance in a developing country such Egypt?

This study makes various pertinent contributions to the debate on the impact of females on board and sustainability performance, and more specifically in Egypt. Thus, this study adds major contributions as follows. First, it provides in-depth insights into both the theoretical and practical dimensions of females on board and its impact on sustainability performance literature in developing and emerging economies. Improving corporate sustainability performance by incorporating more females on boards in Egypt is imperative, as Egypt is one of the most imperative emerging economies in the MENA region, and hence providing value-added evidence to the theoretical framework. Secondly, the previous literature provides mixed results with regards to the association between females on board and sustainability performance; moreover, there have been few studies to scrutinize this relationship in emerging economies in the MENA region compared to developed ones. Thirdly, to the best of our knowledge, this is one of the foremost empirical investigations to document the impact of females on board on sustainability performance in Egypt. Fourth, it supports the significance of the presence of females on board in Egypt as well as in the MENA region. Finally, the study offers findings that might be useful to researchers, practitioners, and regulators.

The rest of this paper is organized as follows. In Section 2, we review the previous literature and sets out the hypotheses. Section 3 discusses the data collection and research methodology. Subsequently, the results are presented and discussed in Section 4. Finally, a conclusion as well as recommendations for future research are provided in Section 5.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Theoretical background

Companies' commitment to sustainability can be explained through stakeholder theory (Jo & Harjoto, 2012). Stakeholder theorists insinuate that corporations have to focus on both the economic and the social perspectives (Russo & Perrini, 2010; Andreasson, 2011). In other words, stakeholder theory emphasizes the importance of good corporate governance, which assures that companies underlie responsibility to multiple stakeholders (Ntim, Opong, & Danbolt, 2012). However, the stakeholder theory cannot be utilized

solely in this study, but the resource dependency theory is considered as well. According to the resource dependency theory, female responsibilities on boards offer various merits for organizations, where they assist them to better understand customers' needs, together with helping the access of more resources (Ntim et al., 2012). Accordingly, board gender diversity improves the availability of the resources, and therefore fosters problem-solving skills and allows wider network connection. Similarly, if the board of directors has adequate skills, competencies, and corporate governance, they may become leaders of sustainable performance (Pfeffer & Salancik, 2003). In addition to those theories, the critical mass theory is employed, which recommends that size identifies the kind of group interactions; whenever a minority group achieves a critical mass, the subgroup's influence grows dramatically, and its interactions within the larger group shift qualitatively (Kanter, 1987). Additionally, when the majority group is faced with a minimum of three perspectives from the minority group, the majority tends to deliberate and cram from the minority (Asch, 1955); more specifically when the minority opinions cling (Nemeth, 1986).

Recently, board gender diversity has become a significant factor of corporate governance structure around the world (Terjesen et al., 2009). Generally, diversity leads to finer strategic decision-making, a greater knowledge base, innovation, and creativity (Watson, Kumar, & Michaelesen, 1993). Hence, the board has to be compromised of diverse directors that have different backgrounds, skills, and perspectives to satisfy multiple needs of various stakeholders (Kaufman & Englander, 2005), which strategically attract human resources that consequently recuperate performance (Bhagat & Black, 1999). The more diverse the board of directors, the higher the sense of philanthropy that leads to more social and ethical involvement (Lau, Lu, & Liang, 2016).

Gender diversity is one key indicator of board diversity, which adds value to governance as it provides multiple merits (Wehrmeyer & McNeil, 2000; Galbreath, 2011, 2018). The reason behind this could be verified by the specific female characteristics, for instance, their low-risk aversion, transparency, and responsibility (Boulouta, 2013); moreover females focus more attention on social concerns than men (Diamantopoulos, Schlegelmilch, & Sinkovics, 2003; Liao et al., 2015; Nadeem, Zaman, & Saleem, 2017), and a higher percentage of females on board leads to more inclination towards corporate social responsibility (Krüger, 2009), and thus enhancing corporate social responsibility practices (Glass & Cook, 2018). Females represent 50% of the population of the world, so ignoring them on board means a shortage of human capital adequacy and skills that consequently undermines the board performance (van der Walt & Ingley, 2003; Carver, 2011).

Despite the vast empirical evidence on the benefits of female presence on board and sustainability performance, there are still contradicting results. Some studies have shown a positive relationship (Bear, Rahman, & Post, 2010; Harjoto et al., 2015; Rao & Tilt, 2016b; Nadeem et al., 2017; Galbreath, 2018); however, other studies have

claimed an adverse association (Cucari, Esposito de Falco, & Orlando, 2018; Argento, Grossi, Persson, & Vingren, 2019), while other studies found insignificant relationship (Prado-Lorenzo & García-Sánchez, 2010; Amran, Lee, & Devi, 2014). Such sporadic results may be due to multiple contextual, internal, or personal antecedents; these antecedents include different methodologies, cultures, use of variables and measurements, time-horizons, and omitted variable biases that have been used (Hermalin & Weisbach, 2001; Adams, de Haan, Terjesen, & van Ees, 2015).

2.2. Hypotheses development

2.2.1. Females on board and sustainability performance

Previous studies have claimed that more female presence on boards enhances charitable activities, thus enhancing the boards' attention to corporate social responsibility (CSR) issues (Ayuso & Argandoña, 2009). Similarly, it has been claimed that companies are more likely to invest in corporate social responsibility if they have more females on board (Boulouta, 2013, Harjoto et al., 2015), thus female directors may assist in CSR issues (Singh, Terjesen, & Vinnicombe, 2008). Moreover, the presence of females on board demonstrates a positive image to the stakeholders and the market, hence enhancing legitimacy to the company by confirming with the expectancies of the society (Hillman, Shropshire, & Cannella, 2007). Better firm performance may be achieved by higher female representation in top management focusing on innovation (Dezsö & Ross, 2012). It has been found that more females on board representation may lead to a more inclination towards CSR (Krüger, 2009). It has been argued that three females on board may raise their perspectives and voices; therefore affecting the board's dynamics (Konrad, Kramer, & Erkut, 2008). Furthermore, a study that has been conducted on a sample of electronic and chemical companies in the US has shown a better environmental strength score with a critical mass of female directors (Post et al., 2011). Whereas another study claimed that if the board has three female directors, the board's decisions may not be affected and neither CSR issues (Joecks, Pull, & Vetter, 2013). Likewise, it has been claimed that a positive association is found between the number of females on board and CSR (Bear et al., 2010). More effective corporate governance has prevailed with a higher percentage of females on board (Terjesen et al., 2009). It has been revealed that there is a positive relationship between the proportion of females on board and CSR (Zhang et al., 2013). According to previous studies, having female representation on the board of directors has a beneficial impact on business sustainability performance (Margaretha & Isnaini, 2014; Ozordi, Uwalomwa, Obarakpo, & Ikumapayi, 2018). On the contrary another study found that gender diversity has strong negative correlations with both accounting and market success (Darmadi, 2011).

H1: Females on board have a positive significant association with sustainability performance.

2.2.2. Board size and sustainability performance

According to resource dependency theory, large board sizes improve corporate sustainability performance (Chen, Ngaiatedema, & Li, 2018). Consequently, members will have extensive external networks to quickly collect scarce resources and market data (Kor & Sundaramurthy, 2009). Similarly, a larger board size carries diverse skills, experience, which assists the company to contribute more to environmental and social issues (Haji, 2013). On the other hand, larger boards take more time for discussion and coordination doing more negotiations and concessions than smaller boards (Kogan & Wallach, 1966; Moscovici & Zavalloni, 1969), which impede company productivity (Jensen, 1993). It has been found that larger boards tend to have a lower sustainability performance (Fuente, García-Sánchez, & Lozano, 2017).

H2: Board size has a positive significant association with sustainability performance.

2.2.3. Board independence and sustainability performance

The appointment of independent directors is crucial to the corporate governance framework that can result in sound management (Said, Hj Zainuddin, & Haron, 2009), which aids in the implementation and execution of sustainability initiatives, as well as monitoring sustainability reporting transparency (Wang, 2017). There are mixed results in previous studies with regard to the relationship between independent directors and sustainability performance. Some studies have found a positive impact (Ho & Wong, 2001; Barako & Brown, 2008). Similarly, an increase in the number of independent directors can persuade firms to implement best practices in environmental and social sustainability while still serving the interests of shareholders (Ho & Wong, 2001; Nguyen & Nguyen, 2020). Moreover, another study has shown a positive relationship between the higher independent directors with social and environmental performance (Hussain, Rigoni, & Oriji, 2018). However, some other studies have found a negative association between independent directors and corporate sustainability reporting (Ozordi et al., 2018).

H3: Board independence has a positive significant association with sustainability performance.

2.2.4. Company size and sustainability performance

It has been stipulated that companies that are larger in size have ample resources to engage in corporate social activities than smaller ones (Andrew, Gul, Guthrie, & Teoh, 1989). It has been found that larger size companies have a significant influence on social performance (Moore, 2001; Reverte, 2009; Gallo & Christensen, 2011). This could be verified as companies grow, they attempt to grasp more shareholders, and therefore, need to counter their needs more amenably (Hillman & Keim, 2001), which leads to a significant influence on corporate social responsibility (Chang, Oh, Jung, & Lee, 2012). It has been revealed that the third-largest budget item for corporate communication departments in Fortune 500 corporations is communication spending for

social responsibility (Hutton, Goodman, Alexander, & Genest, 2001).

H4: Company size has a positive significant association with sustainability performance.

2.2.5. Company leverage and sustainability performance

Companies with a higher leverage ratio disclose more detailed information (Naser, Al-Hussaini, al-Kwari, & Nuseibeh, 2006). It has been argued that companies of higher leverage tend to rely more on debt, therefore, necessitating an increase in environmental actions and the presentation of additional environmental information in order to meet creditors' expectations on environmental issues (Roberts, 1992; Osazuwa & Che-Ahmad, 2016). Another study has shown that higher leverage has no effect on the relationship between eco-efficiency and firm value (Osazuwa & Che-Ahmad, 2016). It has been found that operating at a lower leverage level is associated with a high score in employee treatment (Bae, Kang, & Wang, 2011). Likewise, a study has shown that socially responsible businesses employ less leverage and prefer to use equity rather than debt financing (Pijourlet, 2013), which is supported by another study that demonstrated a negative association between leverage and social dimension, as well as no significant relationship between environmental dimension and leverage ratio (Goss & Roberts, 2011).

H5: Company leverage has a positive significant association with sustainability performance.

2.2.6. Company profitability and sustainability performance

It has been recommended that companies with strong financial performance are more likely to participate in social, environmental, and corporate governance activities (Campbell & Mínguez-Vera, 2008). Moreover, extensive social and environmental information is published by directors of profitable companies to their stakeholders (Haniffa & Cooke, 2005). Likewise, prior studies have acknowledged a positive association between the companies' profitability and the quality of sustainability practices (Giannarakis, 2014a; Ben-Amar, Chang, McIlkenny, 2017). Moreover, better financial situations could lead to greater corporate social responsibility levels; such as high profitability (Waddock & Graves, 1997).

H6: Company profitability has a positive significant association with sustainability performance.

3. METHODOLOGY

3.1. Sample and data collection

In this empirical study, data has been obtained from the companies' annual reports of non-financial listed companies on the Egyptian Stock Exchange (EGX). The sample of the study covers a period of 8 years from 2012 to 2019. In developing the sample, the financial institutions were excluded owing to the fact that they have their unique accounting system (Reverte, 2009). Furthermore, they manage under a firm set of procedures and rules utilizing

different disclosure requirements (Haniffa & Cooke, 2005), capitalization, and regulation (Cooper, Jackson, & Patterson, 2003). Therefore, they were excluded to avoid blemishing the results leading to a more homogenous and unbiased analysis. The board data has been collected depending on the companies' financial statements and websites, among all non-board data, has been extracted from the Thomson Reuters database.

The research population comprised of 120 listed firms on EGX during the period 2012-2019. After excluding 4 financial companies, the initial sample consists of 124 companies. A total observation of 1000 has been collected from the companies' annual reports and companies' websites for eight years. During the study period, companies with missing annual reports have been expelled from the assorted sample, so that the final number of observations was lessened to 904 observations.

3.2. Measurement of variables

3.2.1. Dependent variable

Corporate sustainability performance is illustrated in this study as the dependent variable. It has been measured utilizing the S&P/EGX ESG index that has been developed by the Egyptian Institute of Directors with the help of the EGX, S&P Dow Jones indices. The index is calculated by providing scores to companies in the three aspects of environmental, social, and corporate governance; considering the size and liquidity of companies. The companies' weight in S&P/EGX ESG is used as a proxy for measuring corporate sustainability performance.

3.2.2. Independent variables

In this study, the board gender diversity was introduced in the regression model to scrutinize the impact of females on board on the corporate sustainability performance in Egypt. To expansively comprehend such association, three proxies for board gender diversity have been used for data analysis: 1) the representation of females on board; 2) the number of females on board; 3) the percentage of females on board to a total size of the board.

3.2.3. Control variables

Multiple control variables that are theoretically associated with sustainability performance have been presented in the regression model to prevent model misspecification, and lessen the probability of any bias in the findings. According to a prior literature review, sustainability performance could be affected by various corporate governance and firm-specific factors. Consequently, the study includes control variables that have been previously used by preceding scholars as follows. First, controlling corporate governance mechanism in testing the impact of females on board on corporate sustainability performance. Therefore, board size and independence were included in the study model. Second, firm-specific characteristics were also included as control variables. Company size is measured using the natural logarithm of total assets. Leverage has also been controlled in the study and is calculated using leverage ratio. Profitability is controlled using the return on assets ratio (ROA). Control variables are shown in Table 1 as follows.

Table 1. Definition and measurement of variables

Variable	Code	Description
Female representation on board	FR	Dummy variable: 1 if female exists on board and 0 if no female on board
Female number on board	FN	Number of females on board
Female percentage on board	FP	Number of females on board/size of board
Sustainability	ESGR	ESG ranking, S&P EGX Index
Board size	BSIZE	Total number of BOD members
Board independence	BINDP	Percentage of independent members to the total board size
Company size	CSIZE	Log value of total assets
Company leverage	CLEV	Ratio of long-term debt to total assets
Company profitability	CPROF	ROA

3.3. Model specification

The quantitative analysis has been applied in the study using panel data that includes both cross-sectional and time-series data from 100 Egyptian companies listed in the EGX during the period 2012

to 2019. The regression model is utilized to test the impact of females on board on the sustainability performance of Egyptian companies, which are depicted in the development of hypotheses section along with control variables. The estimated models are as follows:

Model 1:

$$ESGR_{it} = \beta_0 + \beta_1 FR_{it} + \beta_2 BSIZE_{it} + \beta_3 BINDP_{it} + \beta_4 CSIZE_{it} + \beta_5 CLEV_{it} + \beta_6 CPROF_{it} + \varepsilon \quad (1)$$

Model 2:

$$ESGR_{it} = \beta_0 + \beta_1 FN_{it} + \beta_2 BSIZE_{it} + \beta_3 BINDP_{it} + \beta_4 CSIZE_{it} + \beta_5 CLEV_{it} + \beta_6 CPROF_{it} + \varepsilon \quad (2)$$

Model 3:

$$ESGR_{it} = \beta_0 + \beta_1 FP_{it} + \beta_2 BSIZE_{it} + \beta_3 BINDP_{it} + \beta_4 CSIZE_{it} + \beta_5 CLEV_{it} + \beta_6 CPROF_{it} + \varepsilon \quad (3)$$

where, i denotes firms in the sample; t refers to time period, β_0 is the constant; β_1 to β_6 represents

the regression coefficients, and ε is a vector of the stochastic error term.

4. DATA ANALYSIS

4.1. Descriptive statistics

Table 2 presents descriptive statistics of all variables. The lowest, maximum, mean as a measure of central tendency, and finally the standard deviation as a measure of dispersion, which is all

included in the descriptive analysis. As can be seen from this table, the mean percentage of females is 0.096; whereas the mean females' number is 0.0884. The female representation of females in the sample represented 48%; however, 52% of companies do not have females on their boards. The mean and standard deviation of *ESGR* are 0.235 and 0.477 respectively.

Table 2. Descriptive statistics

Panel A				
<i>Variables</i>	<i>Mean</i>	<i>SD</i>	<i>Min.</i>	<i>Max.</i>
<i>FN</i>	0.884	1.187	0	8
<i>FP</i>	0.096	0.122	0	0.625
<i>CSIZE</i>	3.026	0.902	1.077	5.86
<i>CLEV</i>	0.469	0.286	-1.262	2.248
<i>CPROF</i>	0.397	0.098	-0.943	0.439
<i>BSIZE</i>	8.703	3.166	3	23
<i>BINDP</i>	0.1506	0.147	0	0.778
<i>ESGR</i>	0.235	0.477	0	1.477
Panel B				
<i>Variable</i>	<i>Female representation</i>		<i>Frequency</i>	<i>%</i>
<i>FR</i>	Female (1)		434	48%
	No female (0)		471	52%

4.2. Group unit root test

Table 3 reveals the stationary of the time series confirming that the mean and variance are invariant over time in which Levin-Lin-Chu test; ADF Fisher

Chi-square (ADF-Fisher); PP-Fisher Chi-square tests have been applied at a significant level less than 5% level. Thus, least square regression has been used to test the relationship between dependent and independent variables.

Table 3. Group unit root test

<i>Variables</i>	<i>Levin-Lin-Chu test</i>	<i>ADF-Fisher</i>	<i>Chi-square</i>
<i>FR</i>	-6.0698**	39.406**	35.632**
<i>FP</i>	-10.172**	255.912**	247.739**
<i>FN</i>	-8.9421**	99.924**	103.416**
<i>CSIZE</i>	-15.162**	589.003**	631.924**
<i>CLEV</i>	-35.328**	806.517**	874.060**
<i>CPROF</i>	-41.5602**	1102.16**	1241.85**
<i>BSIZE</i>	-14.9519**	237.958**	217.236**
<i>BINDP</i>	-7.5226**	209.134**	216.480**
<i>ESGR</i>	-21.9957**	312.918**	325.942**

Note: ** is significant at a 5% level.

4.3. Hypotheses testing

The fixed-effect model is used to examine the impact of females on board and sustainability performance on 120 Egyptian companies, using board size, board independence, company size, company leverage, and company profitability as control variables. Before applying the regression analysis for the three models, Hausman test is employed to compare the random and fixed effect estimates of coefficients. As illustrated in Table 4, the calculated values are significant at 5%; therefore, supporting the appropriateness of the fixed-effects model.

Table 4. Hausman test

<i>Models</i>	<i>Chi-square statistic</i>
Model 1	32.940***
Model 2	31.841***
Model 3	31.781***

Note: *** is significant at a 1% level.

4.4. Analysis and discussion

As shown in Table 5, Model 1 examines the impact of females' representation on board and sustainability performance. The results reveal that

females on board representation have a significant positive impact on sustainability performance at a 1% level. These results are consistent with previous studies whose findings confirm that boards with more female directors are more likely to engage in corporate social responsibility activities (Boulouta, 2013; Harjoto et al., 2015); together with another study that argued that representation of females on board has a positive association with social performance (Byron & Post, 2016) and other studies found that gender diversity has a positive impact on return on assets (Conyon & He, 2017; Abdelzaher & Abdelzaher, 2019; EmadEldeen, Elbayoumi, Basuony, & Mohamed, 2021). This is supported by literature that stipulates the gender-based differences between men and females, as men hold a different perspective concerning a leadership concept (Leary & Hoyle, 2009) and focus more on economic concerns; whereas females carry better communal attributes that lead them to encounter more stakeholders' interests (Adams, Licht, & Sagiv, 2011). Moreover, it has been argued that corporate governance systems can be thought of as a set of accountability measures that boost legitimacy (Aguilera, Williams, Conley, & Rupp, 2006), in which the appointment of females on board lends credibility to a company by conveying a good message to present and potential female employees, as well as stakeholders and

the market that the company meets societal standards (Hillman et al., 2007). Model 2 examines the effect of the number of females on board and sustainability performance. The results show that there is no significant association between the number of females on board and sustainability performance. Model 3 scrutinizes the relationship between the percentages of females on board and sustainability performance. The results demonstrate that there is no significant impact of a percentage of females on board and sustainability performance, which is consistent with other studies that documented negative or no relationship between gender diversity and corporate social responsibility (Galbreath, 2010; Gallego-Álvarez, García-Sánchez, & Rodríguez-Dominguez, 2010; Rao & Tilt, 2016a).

Table 5. Results of the fixed-effects models

Variables	Model 1	Model 2	Model 3
Constant	0.197	0.257	0.235
FR	0.104***		
FN		0.019	
FP			0.211
CSIZE	0.051	0.043	0.043
CLEV	-0.167**	-0.172	-0.171
CPROF	-1.186	-0.194	-0.1895
BSIZE	-0.009	-0.009	-0.007
BINDP	-0.031	-0.008	-0.0099
R ²	0.741	0.74	0.74
Adjusted R	0.70	0.70	0.70
F-test	17.864***	17.682***	17.690***

Note: *** is significant at a 1% level, ** is significant at a 5% level.

Moreover, company leverage has a significant positive impact on sustainability performance at a 5% level. Although companies that have a high leverage ratio are risky, managers tend to disclose more data information to reassure stakeholders (Naser et al., 2006). Consistently, it has been found that leverage is positively significant with ESG (Naser et al., 2006). However, the board size has demonstrated a non-significant negative impact on sustainability performance, concluding that the larger the board size, the lower the sustainability performance, which is consistent with the findings of prior research (Fuente et al., 2017). Furthermore, board independence has shown a negative non-significant influence on sustainability performance that is consistent with another study (Ozordi et al., 2018).

5. CONCLUSION

The purpose of this research is to provide empirical evidence on the influence of females on board on

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sustainability performance. The study has been undertaken in the light of stakeholder and resource dependency theories, in which each of them represents a unique perspective on gender diversity. Despite the various empirical studies that have been done across different countries and years, there is still no decisive evidence on the relationship between gender diversity and sustainability performance; more specifically in developing countries. By analyzing the case of Egypt, our study contributes to the still-growing academic knowledge base on board gender diversity and serves as a springboard for future research on this fascinating topic of the relationship between gender diversity and corporate sustainability performance. In our study, the analysis of the sustainable performance of 120 Egyptian companies over the period 2012-2019 has yielded a positive significant link between females' representation on board and sustainability performance; concluding that companies that have more females on their boards have higher sustainability performance. On the other hand, the number and percentage of females on board have no significant impact on sustainable performance. For future advancement, it is recommended that companies' boards enhance more representation of females as well as the number of female members on their boards. Thus, shifting the focus to more gender-diverse boards, which would further lead to amendments by regulators and policymakers in Egypt.

This study has some limitations where the sample of the study includes only the non-financial companies. Furthermore, it has been measured utilizing the S&P/EGX ESG index that has been developed by the Egyptian Institute of Directors with the help of the EGX, S&P Dow Jones indices. Future studies could use a bigger sample size and look at other sustainability performance measures. More analysis should be conducted on the impact of females on board on each of the three pillars of sustainability performance: environmental, social and corporate governance. Furthermore, future studies should look at the role of women on board and its impact on companies' corporate sustainable performance, and how they relate to company success. The scope of this paper provides direction for future research, instead of using secondary data on ESG scores, survey and interviews methods can be utilized to collect primary data on sustainability performance. Finally, comparative studies of the results can also contribute to the existing literature review.

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