

RESEARCH ARTICLE

Exploring the relationship between female director's profile and sustainability performance: Evidence from the Middle East

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This paper purposes to analyze how female directors' human capital can influence the development of sustainability performance. Specifically, we classified the human capital of female directors into three categories including highly educated members, community influentials, and business experts to determine which particular types of these categories can foster sustainability performance. The estimation is based on a sample of 93 nonfinancial firms listed on the national stock exchanges of Bahrain, Egypt, Kuwait, Morocco, Oman, Saudi Arabia, Turkey, and UAE over the period from 2014 to 2018. The findings clearly unveil that not all female directors are equally influential to sustainability performance by considering their human capital profiles that significantly determine their decisions. Further, we found that female directors with advanced education and social engagement background are positively associated with sustainability performance. Our study has important implications for companies and policymakers. Companies should pay attention to experiences, educational levels, and backgrounds of female directors based on the assumption that human capital profiles of female directors may influence the board effectiveness. Policymakers should also play an active role in promotion gender diversity on regional boards by introducing initiatives that provide more support for qualified women's representation on boards to ameliorate corporate sustainability performance. This empirical study extends the literature on the impact of female director categories on sustainability performance by going beyond the taxonomy of female directors (i.e., independent/nonindependent female directors). We offer clear evidence that not all types of female directors have an impact on sustainability performance by considering their human capital profiles which significantly determine their cognitive abilities.

1 | INTRODUCTION

In the past decade, sustainability has reached a tipping point and became a defining factor in companies' long-term strategies, especially in major economies. The increasing pressures from key stakeholder groups have led companies to embrace more responsible capitalism by improving nonfinancial performance and making a positive contribution to the community (Garcia-Sanchez et al., 2014; Helmgig et al., 2016; Zhang et al., 2013). Furthermore, sustainability issues have become much more important for investors. Currently, investors

are demanding for better disclosure of corporate sustainability performance. Consistent and comparable sustainability information has therefore become essential for investors to inform their decisions (Barker & Eccles, 2018). This trend has been visibly illustrated by the increasing number of companies that integrated sustainability indicators into their business activities, because they believe that such integration can decrease risk and maximize long-term returns.

Moreover, the adoption of sustainability practices legitimizes companies' operations by achieving social legitimacy and disclosing these practices to achieve greater credibility with stakeholder groups.

According to Zeng et al. (2020), corporate social responsibility (CSR) reporting has a significant impact on stakeholders' intentions to boycott companies. Consumers are likely to boycott when companies lack environmental or philanthropic concerns. Therefore, well-managed firms tend to be less likely to suffer from public relations problem, boycotts, or labor problems that affect their returns (Yang & Rhee, 2020).

It should be indicated that there is a growing body of evidence in the literature regarding the influence of sustainability performance on long-term value creation (e.g., Chouaibi et al., 2021; Lourenço et al., 2012; Lu & Taylor, 2016; Velte, 2017; Vishwanathan et al., 2020; Wang et al., 2016). Additionally, it is undoubtedly accepted that incorporating sustainability information into investment decisions can contribute to superior returns over time (Barker & Eccles, 2018).

Considering the aforesaid discussion, the increasing importance of sustainability information for stakeholders creates an urgent need for regulation to improve the consistency and comparability in sustainability reporting (Barker & Eccles, 2018). In September 2020, the Trustees of the International Financial Reporting Standards (IFRS) Foundation released a consultation paper on sustainability reporting. The IFRS Foundation's proposal suggests that the IFRS Foundation develops a Sustainability Standards Board (SSB) under the auspices of the IFRS Foundation to develop global sustainability reporting standards for harmonizing and streamlining sustainability reporting, which could be beneficial to investors and an even broad spectrum of audience in a context in which a society is demanding initiatives to reduce environmental impact (Orij & Vergoossen, 2020).

With growing investor attention to sustainability reporting, there is a greater emphasis on the board of directors and its fiduciary duties to supervise a company's environmental, social, and governance (ESG) strategies, risk, and capital allocation (Chang et al., 2017; Zhang et al., 2013). The board of directors is an important part of the governance structure responsible for firms' strategies, ensuring the company works in the interests of stakeholders and shareholders (Prado-Lorenzo & Garcia-Sanchez, 2010). The effectiveness of board of directors is associated with its characteristics, such as the diversity of board resources, human capital, and board gender composition (Bear et al., 2010; Harjoto et al., 2015; Issa & Fang, 2019). It is believed that human capital of female directors on the board, such as substantial knowledge, experience, and skills, determine the quality of a board's decisions. In this sense, this paper is aimed to analyze how female directors' human capital can influence the development of sustainability performance. To better understand the nature of this phenomenon, we classified the human capital of female directors into three categories including highly educated members, community influentials, and business experts to determine which particular types of these categories can foster sustainability performance (Hillman et al., 2000; Johnson et al., 2013).

The results were obtained for a sample of 93 nonfinancial firms listed on the national stock exchanges of Bahrain, Egypt, Kuwait, Morocco, Oman, Saudi Arabia, Turkey, and UAE over the period from 2014 to 2018. Our findings demonstrate that board gender diversity

(BGD) has a significant positive impact on sustainability performance.

The main results reveal that the role of female directors' social background and advanced educational level play a critical role in improvement of sustainability performance. Our study makes four main contributions to the literature on board diversity. **First**, this study takes an international perspective to investigate the effect of female directors' human capital on firms' ESG performance in the Middle East. Cross-country-level data enable us to examine the role of country-level variables—such as ESG performance, investor protection, and gender gap—that might impact the association between gender diversity and ESG performance (Jamali et al., 2020; Houque et al., 2020). Even though cross-country studies are important to improve our understanding of how specific business practices manifest across the world (Jamali et al., 2017; Jamali et al., 2020), few studies have been conducted in developing countries (e.g., Middle Eastern countries) to explore the nature of ESG performance in a multicountry context (e.g., Arayssi et al., 2020; Harun et al., 2020; Issa & Fang, 2019). Hence, this study fills this gap in the literature by exploring the effect of female directors' human capital on firm's sustainability performance in the Middle East region.

Second, in this paper, we extend the research on the impact of female director categories on sustainability performance by going beyond the taxonomy of female directors (i.e., independent/non-independent female directors) in order to gain a more fine-grained understanding of the impact of female directors on boards. According to Johnson et al. (2013), using aggregate measures of board composition in analysis may bias results because directors' knowledge, experiences, and skills have different effects on corporate strategic outcomes. We have considered the specific knowledge, backgrounds, and skills of female directors that may have a positive impact on proactive sustainability strategies. We followed the classification of Johnson et al. (2013) and Hillman et al. (2000) and categorized female directors into three main subgroups, namely, highly educated members, community influentials, and business experts.

Third, our study contributes to existing literature regarding board human capital by testing specific hypotheses that predict what board female member attributes are most critical for improvement of sustainability performance. Our contribution comes from the findings provided, as not all female directors are equally effective in fostering sustainability performance. Some female directors, especially those with social engagement background and advanced education degrees, are positively associated with the development of sustainability performance, while female directors with past business experience in other firms have an insignificant relationship. Thus, we address the limitation in previous studies that suggest all female directors are homogeneous in their impact on sustainability performance. The current study contributes to our understanding about BGD that not all female directors are equally influential to sustainability performance by considering their experiences, educational levels, and backgrounds.

This study is organized as follows: Section 2 describes the literature review that supports the research hypotheses. The third section shows the sample, variable measurement, and model specification. Section 4 describes the descriptive and empirical results.

Section 5 discusses the results. Finally, the conclusions, implications, and limitations are presented in Section 6.

2 | LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In recent years, the research which has been directed towards exploring the determinants or drivers of corporate sustainability practices has proliferated because of their relevance at the business level. Adoption of sustainability strategies enables companies to minimize the agency costs associated with the separation of ownership and control (Martínez-Ferrero et al., 2016) and helps them to foster corporate financial performance (Chen & Wang, 2011). In addition, better sustainability performance creates or maintains social legitimacy (Chauvey et al., 2015; Du & Vieira, 2012), and it also bolsters the reputation and competitiveness which helps companies to grow their global businesses (Bear et al., 2010; Bernal-Conesa et al., 2017).

The literature has agreed in suggesting that governance quality significantly influences corporate environmental and social performance (Bear et al., 2010; Boulouta, 2013; Chang et al., 2017; Harjoto et al., 2015; Issa & Fang, 2019; Issa & Zaid, 2021; Rao & Tilt, 2016). The board of directors is the apex of the decision-making process, and it is ultimately responsible for implementing corporate strategies, such as sustainability (Chang et al., 2017; Fama & Jensen, 1983; Jain & Jamali, 2016; Walls et al., 2012). In this sense, the composition of the board with regard to its diversity and human capital plays a main role in the ethical commitment shown by the firm (García-Sánchez et al., 2015). Review studies and meta-analyses from academia have revealed a positive association between board diversity and sustainability performance (Amorelli & García-Sánchez, 2020; Byron & Post, 2016; Kagzi & Guha, 2018).

Prior research conducted by ancestors has suggested some dimensions of diversity that could determine the strategies of corporate sustainability (Al-Shaer & Zaman, 2016; Walls et al., 2012). Some researchers have identified certain diversity types such as independent directors (Liao et al., 2015), foreign directors (Ibrahim & Hanefah, 2016), highly educated directors (Harjoto et al., 2019; Katmon et al., 2019), and directors with social or political backgrounds (Alazzani et al., 2019; Ramón-Llorens et al., 2019). The results obtained by García-Sánchez et al. (2020); Nadeem et al. (2020), Lu and Herremans (2019), Ben-Amar et al. (2017), Haque (2017), Glass et al. (2016), and Böttcher and Müller (2016) suggest that the inclusion of women at top management level has a strong correlation with the improvement of sustainability practices such as carbon emission, energy efficiency, well-being of employees, environmentally oriented design, and industrial ecology. Therefore, women with social and human capital are expected to outperform men in decision-making on sustainability issues as a result of their early experiences and backgrounds through social interactions (Al-Shaer & Zaman, 2016).

Several theoretical perspectives explain the role of female directors' social and human capital in promoting sustainability practices in a

firm, including, but not limited to, resource dependency theory, human capital theory, and gender socialization theory.

From a resource theoretical ambit, it's imperative to distinguish between the resource dependence theory (RDT) and resource-based perspectives (RBPs). In this vein, the RDT is related to the external drivers of sustainability initiatives, whereas the RBPs are linked with the internal drivers of sustainability actions. Furthermore, it is well-articulated that the current mainstream theorizing of CSR and sustainability are mainly dominated by theories related to the external drivers such as RDT than their RBPs counterpart (Frynas & Yamahaki, 2016).

In line with the aforementioned, Pfeffer and Salancik (1978a) denote that firms are dependent on their surroundings to ensure the flow of vital resources for their survival in the foreseeable future. Thereby, firms must attend to the demands of those in their environment that provide resources for their continued survival. In this context, firms depend on stream of actors who can put conflicting social demands on the entity (Oliver, 1991), and RDT foretells that an entity is more likely to pay remarkable attention to social actors who control critical resources (Pfeffer & Salancik, 1978a), which can clearly illustrate, for instance, why firms with a high dependence on female staff pay conspicuous attention to work-life balance issues. Moreover, the RDT casts the light on the role of board of directors' structure in guaranteeing the flow of critical resources to the entity, particularly knowledge, gender diversity, education, business expert, and social network ties (Frynas & Yamahaki, 2016). Motivated by the abovementioned arguments, this study attempts to respond to the recent calls by investigating sustainability performance within the RDT theory.

The resource dependency theory states that the survival and success of an organization rely not only on its ability to manage and allocate its resources but also on its capacity to obtain the valued resources from the environment in a stable and low cost manner (Pfeffer & Salancik, 1978b). The board must provide the firm with critical resources (e.g., legitimacy, advice, counseling, and social networks) that are essential to survive (Hillman et al., 2000). The board of directors provides these diverse resources to the firm through skills, experience, capabilities, and backgrounds of board members. The availability of these diverse resources improves the ability of the board to formulate long-term strategies (e.g., sustainability) (Bear et al., 2010). In this regard, the diversity in terms of gender brings different perspectives, skills, and professional experiences to corporate boards that improve their functions.

In addition, female directors often have more heterogeneous backgrounds and professional experiences than male directors. For instance, unlike men, women tend to reach board of directors after gaining higher education (e.g., PhD) and working voluntarily with charity organizations. These experiences, skills, and knowledge may help them to communicate effectively with stakeholders and exert influence on environmental and social performance (Galbreath, 2016; Hillman et al., 2002; Vinnicombe et al., 2009; Zhang et al., 2013).

According to the human capital theory, board diversity represents an important criterion for ensuring better board performance in relation to the diverse and unique human capital (Becker, 1964). Human

capital characteristics are the skills and experiences that individual board members bring to the decision-making process (Johnson et al., 2013). A greater amplitude of human capital in the boardroom improves decision making and exerts a positive influence on accountability and transparency by providing information to a broader universe of stakeholders about the corporate performance (Bear et al., 2010; Carter et al., 2010). Therefore, female directors who have knowledge, capabilities, and expertise may possess a variety of perspectives that can affect a board's strategic decisions and, thus, improves the ability to produce creative and innovative solutions to problems on time (Chang et al., 2017; Hsu et al., 2013; Milliken & Martins, 1996; Srinidhi et al., 2011).

Finally, the gender socialization perspective states that women are more ethically sensitive than men due to their early experiences through social interactions (Loo, 2003). Women are more likely to obey the rules and less likely to be tolerant of those individuals who break them (O'Fallon & Butterfield, 2013; Weeks et al., 1999). These different ethical beliefs cause men and women to develop different work-related decisions and judgments (Ameen et al., 1996; Chen et al., 2016). Women's ethical standards are relevant in enhancing a board's understanding of the demands of stakeholders, particularly on environmental and social issues (Liu, 2018). Therefore, it is expected that women are more likely to react to ethical issues such as environmental and social practices.

2.1 | Institutional regulatory context, corporate regulations, and the role of women on boards

Drawing upon Institutional theory, it was suggested by Scott (1995) that institutions have several enduring aspects related to social structures, cultural norms and beliefs, and rules as fundamental elements, with profound facets of social structures which promote socially acceptable behavior. That is, based on Institutional theory, the institutions include social structures which are composed of cultural-cognitive forces, normative elements, and regulative aspects (Tlairs, 2015) which rely on social rules and norms as prominent guidelines for directing social behavior. In order to safeguard their subsistence and to ensure the stability and meaningfulness to social lives, societies endorse various systems and rules via normative pillars which emphasize on behavioral appropriateness and via certain regulative pillars which concentrate on instrumentality and compliance to the prevalent rules and regulations (Scott, 1995).

2.1.1 | Normative forces

Concerning women's leadership, social constraints are likely to be imposed on the professional as well as social behavior of women through normative systems (Milazzo & Goldstein, 2019). According to Jamali (2009), the normative element is largely prominent in the Middle East context, as the employment choices for women are governed by what is perceived to be socially appropriate for them. Likewise,

Baughn et al. (2006) outlined the effect of normative elements as societies remain expecting women to follow the common social rules of behavior. Though traditional values and imbalanced gender stereotypes are still hindering women's leadership in organization, they are highly triggered in Muslim countries which are experiencing slow changes in the rates of cultural and social facets (Kazemi, 2000).

Norms usually emerge from cultural aspects which dictate clearly what is considered to be acceptable in a particular society and what is not. The culture in Middle Eastern countries tends to be collective, characterized by high power distance, and ranks low in gender egalitarianism (Hofstede, 2001; Yahiaoui et al., 2021). There is a high level of conservatism in which the roles of men and women are evident and undoubtedly different. In these countries, women are mainly assigned to take care of the family and household sphere. This conservatism has contributed to the lack of women's presence in top positions in organizations. Despite the social freedom and education rights that are explicitly given to women, there is a silent mentality towards the primary roles of women pertaining to their houses and families (Jamali et al., 2005).

2.1.2 | Cultural-cognitive forces

MENA countries are characterized by distinct cultural factors shaped by traditions, beliefs, and customs, which have a negative influence on the development of women, and rather assured the continuous control of men over them (Aslam & Haron, 2020; Hegland, 2018; Salloum & Azoury, 2012). Sarhan et al. (2019a) stated that the perceptions of men and women towards the employment of women are not positive in the MENA countries as compared to other regions. The differences in their perceptions towards working women have been considered to be greater in the MENA region. The less favorable attitude of men towards working women could impact the participation of women in the workforce, particularly because women generally have to get permissions from men prior to participation in the workforce in majority of the Middle East nations (Hegland, 2018).

Furthermore, culture-cognitive elements in the Middle East countries are predominantly driven by family and religion (Sharabi, 1988; Sidani et al., 2015). The regions of Islam and Christianity have in common strong emphasis on dissimilar gender roles. Prior studies highlighted the effect of disparate religious views towards the participation of women in leadership and economic spheres (Omar, 2010; Sidani, 2005). They identified two features of gender roles in Middle East countries. The first feature emphasizes that dissimilar gender roles are significantly prevalent in comparison with western societies as individuals tend to clearly embrace the views of egalitarianism towards gender in the society (Stickney & Konrad, 2007). The second feature highlights that gender norms usually endorse the control of men over the activities of women, especially in the public spheres.

Family has at all times played a key role in the Middle East countries (Welsh & Raven, 2006). Women receive high respect and are considered to be powerful, but there are strict gender roles towards them. They are not normally given leadership roles; instead, they are

prepared to ensure the management of their own homes and take care of family members. These nepotistic understandings restrict business actions (Grosvold, 2011; Sidani & Thornberry, 2013) which normally favor males over women for leadership positions. Such practices impede the leadership of women in different ways. First, women are perceived to be unsuitable for leadership positions. Second, they are given substantial domestic duties which contradict with leadership jobs. Third, the control of men over women is acceptable but the opposite is not.

2.1.3 | Regulatory forces

According to Greenwood et al. (2008), regulations shift individuals' interests and reinforce some practices while discouraging others. The laws in the Middle East, including citizenship and labor laws, contain some discrimination among men and women, and therefore, they have been considered to be irrational (Moghadam, 2003; Sidani et al., 2015). The laws in most of these countries view males as the main responsible individuals for generating income and sponsoring the family, while women may work either to support the income of the family or to achieve self-satisfaction. Such laws influence the personal status, work, and family of women and seem to confront the abilities of women in participating in paid jobs, particularly in top management levels. Feminist establishments aspire for changes in the law, yet the absence of legal enforcement creates another critical issue. Certain laws recognize the necessity of comparable payment for identical work; however, it has rarely been brought as a case under these laws, and it is hard to find a mechanism for monitoring of compliance.

2.1.4 | Corporate regulations

The majority of listed firms in the MENA countries have very focused shareholding structures, characterized by family controls and state's dominance (Al-Bassam et al., 2018; El-Kassar et al., 2018; Othman & Zeghal, 2010; Piesse et al., 2012). According to Smith (2009), nearly 75% of the firms in Middle East countries are controlled by families. Other studies also pointed out that powerful families in the MENA countries have a tendency to vigorously form the board of directors by selecting individuals from their own inner circles (e.g., relatives) to be considered for appointment on the board; thus, the family remains influential in controlling organizational decisions (Hasan et al., 2014; Sarhan et al., 2019b). A better environment for general governance and investment conditions, with higher emphasis on merits and individuals' qualifications, tends to have a positive influence on women's chances for getting jobs in organizations at different levels (Salloum et al., 2019). Unfortunately, the growth of corruption, ineffective governance, coupled with the weaknesses of law rules in the MENA countries, tends to exert a negative effect on the participation of women in the workforce and may hinder their chances for selection in boardrooms and top management positions, as the preferences are

likely to be given for those (men) with social connections and linkages (Sarhan et al., 2019b).

2.1.5 | Role of women on boards

The significance of women's presence on board of directors has been acknowledged in earlier researches. Arayssi et al. (2016) reported that the participation of women on corporate boards improves an organization's ESG disclosure and positively affects the association between ESG and corporate performance. The increasing number of females' directors on boardrooms provides a noteworthy contribution to the effectiveness of corporate governance via multiple board processes and entity interactions (Abdullah et al., 2016; Terjesen et al., 2009). According to Mallin and Michelon (2011), female directors tend to be more sensitive towards others than males, and their concerns about various stakeholders' interests enhance the deal role of board of directors. Hillman et al. (2007) added that female directors are generally influential in linking companies with valuable resources that are controlled by women, besides supporting the human resource department in attracting and retaining female staff. Such connections tend to be of considerable value in developing and emerging economies, in which the gender divide usually hinders the abilities of male directors in effectively connecting with females.

The existence of women on board members tends to bring valuable benefits to the firm, including a greater understanding about its operations, a new perspective, and ideas about females' products/market concerns (Jamali et al., 2007). Prior research revealed that women directors tend to have distinct educational backgrounds, and due to their diverse abilities and skills, they are likely to provide novel contributions to the boardroom (Fan et al., 2019). According to Francoeur et al. (2008, p. 84) "women (like external shareholders, ethnic minorities, and foreigners) often bring a fresh perspective on complex issues, and this can help correct informational biases in strategy formulation and problem-solving." A contemporary study on board diversity in the MENA countries reported that female board of directors are more inclined towards taking vigorous roles on their boardrooms (Mertzanis et al., 2019). Certain scholars also suggested that females have high tendency towards asking questions during meeting (Bilimoria & Wheeler, 2000), discussing an organization's matters (McInerney-Lacombe et al., 2008), displaying participative leadership style and collaboration willingness (Herrera et al., 2012), and in general hold their firms accountable to ethical principles (Galbreath, 2011).

2.2 | Hypotheses development

2.2.1 | Female directors

Gender diversity on boards plays an important role in making business decisions. It is generally agreed in corporate governance literature that female directors enhance a board's tasks by providing critical

resources to the board. Furthermore, female directors provide a heterogeneous bundle of resources including wide range of ideas, perspectives, skills, and competencies (Galbreath, 2016; Zhang et al., 2013), which consequently enhance board's strategic decision-making process (Nadeem et al., 2020; Terjesen et al., 2016), improve monitoring of executive officers (Adams & Ferreira, 2009; Gull et al., 2018), and promote public disclosure (Frias-Aceituno et al., 2013; Pucheta-Martínez et al., 2019).

According to the RDT, female directors can provide critical resources to the board (e.g., expertise, skills, and ties to other external contingencies). In a similar vein, Erhardt et al. (2003) and Carter et al. (2003) suggested that heterogeneous boards in term of gender perform better than less heterogeneous ones. Furthermore, female board members encourage open discussion, atmosphere of greater information communication and more participation, which, in turn, enhance the board decision-making process and promote the quality of board decisions (Hillman et al., 2002; Nielsen & Huse, 2010). In addition, female directors have nonbusiness perspectives and different values from their male counterparts, and they tend to be more concerned with ESG practices than men (Bear et al., 2010). Thus, female members are expected to exercise influence on decisions pertaining to social and environmental practices.

Based on the gender socialization theory, women leaders' styles are attributed to communal attributes (e.g., empathy, kindness, interpersonal sensitivity, and care about others) (Carli & Eagly, 2016). They are more compassionate and more aware of the welfare of other people (Eagly et al., 2003). Furthermore, several studies indicated that women are more moral than men (Dawson, 1997; Gilligan, 1982; Khlif & Achek, 2017; O'Fallon & Butterfield, 2013; Weeks et al., 1999). Due to gender-related difference in moral reasoning, men and women do not perceive stakeholders' claims in the same way. Women tend to be more care-oriented and creating or maintaining long-term relationships with stakeholders (Boulouta, 2013).

These communal qualities and moral reasoning of women are relevant in formulating environmental strategies and policies (Adams & Funk, 2012; Liu, 2018; Mallin & Michelon, 2011). Therefore, we argue that women express a stronger commitment to corporate sustainability and are more likely to support social and environmental strategies than their male counterparts. Accordingly, the first hypothesis can be formulated as follows:

Hypothesis 1. Female board members are positively associated with sustainability performance.

2.2.2 | Highly educated female members

Knowledge embedded in human capital is a unique resource that competitors cannot imitate (Crook et al., 2011). It plays a fundamental role in promoting decision-making process. According to human capital theory (Becker, 1964), individuals' cumulative stocks (e.g., knowledge, skills, and abilities) play an important role in honing cognitive and

productive capabilities that benefit both the individual and the organization. With regard to board directorship, Katmon et al. (2019) suggested that successful firms exploit diverse advanced educational levels (e.g., Ph.D., master degree, and MBA) of directors efficiently in order to help them in making strategic decisions and creating sustained competitive advantages. Furthermore, directors with higher level of education may mitigate agency problems which result in an improved decision-making process. According to Zhang (2010), diverse knowledge and information possession on board decrease information asymmetry and uncertainty which in turn enable the directors to make faster and higher quality decisions. Additionally, Wiersema and Bantel (1992) showed that highly educated managers are more likely to implement significant changes in corporate long-term strategies. Adams et al. (2018) found that higher educational level and more a firm's-specific experience are positively related to CEO succession.

Moreover, Gull et al. (2018) suggested that directors with advanced education level bring diverse perspectives to the discussions in board meetings that may enhance the board's understanding of organizational issues from different perspectives and, thereby, increase the likelihood of creative and innovative solutions to complex problems (Cox & Blake, 1991).

Based on the abovementioned discussion, we assume that female directors' cognitive ability and advanced education contribute effectively to the board's strategic decisions related to sustainability. Human capital of female board members is likely to improve the decision-making process function of the board and enhance corporate sustainability strategies. Hence, we outline our second hypothesis on highly educated female members as follows:

Hypothesis 2. Highly educated female board members are positively associated with sustainability performance.

2.2.3 | Female community influentials

Community influentials on boards are non-executive directors who provide service to the firm in terms of networking and legitimacy. They supply connections relevant to the firm's environment beyond the competitors (Hillman et al., 2000). Typically, community influentials include retired politicians, university representatives, and officers of social organizations (Michelon & Parbonetti, 2012).

In this vein, empirical research reveals that, compared with men, women use different attitude towards environmental and social issues (Bear et al., 2010; Glass et al., 2016; Post et al., 2015). In the social sphere, for instance, female directors are more likely to engage in humanitarian and community service activities and are more likely to be community influentials than male directors (Hillman et al., 2002). According to the RDT, such social engagement background may enable female directors to provide nonbusiness perspectives on issues, problems, and ideas as well as experience on boards that influence positively stakeholder management (Hillman et al., 2002).

Gender-diverse boards benefit from such valuable nonbusiness perspectives on a firm's proposed actions and strategies, which may enable the boards to better assess the needs of different stakeholder groups (Liao et al., 2015). Furthermore, according to Terjesen et al. (2016), female directors bring important resources and social network ties to their corporate boards. They have more potential to link organizations to important elements in the external environment than men due to their different experiences and nonbusiness backgrounds (Hillman et al., 2007).

From the gender socialization perspective, women are prescribed to communal attributes such as helpfulness, kindness, selflessness, and nurturance. These communal attributes lead women to be more self-sacrificing and concerned with the needs of others, whereas men are likely to be more autonomous, individualistic, and competitive (Gilligan, 1982). As a result, women directors tend to be more concerned than men directors about stakeholders' needs and interests (Byron & Post, 2016). Consistently, empirical evidence shows that presence of women on the board of directors is associated with more corporate charitable donations (Jia & Zhang, 2013; Williams, 2003), environmental, and CSR disclosure (al Fadli et al., 2019; Ben-Amar et al., 2017; Ibrahim & Hanefah, 2016; Liao et al., 2015; Liu, 2018).

Taken together, this evidence suggests that female board directors through their network ties, nonbusiness backgrounds, and experiences are likely to manage stakeholders in a better way by providing effective counseling to the board on sustainability issues. Therefore, the third hypothesis can be presented as follows.

Hypothesis 3. Female community influentials on board are positively associated with sustainability performance.

2.2.4 | Business female experts

Human capital resources include prior business experience and training of managers benefit the firm by providing valuable information and knowledge that lead to sustained competitive advantages (Johannessen & Olsen, 2003). Indeed, such resources enable the firm to conceive of and engage in strategies that other firms could either not conceive of, or not implement, or both, because they have a lack in the relevant resources (Barney, 1991).

However, directors' expertise may have differential effects on board's decision-making process, depending on their resource-dependence role. According to Hillman et al. (2000), disaggregating directors into truly independent and nonindependent categories do not adequately capture the role of directors, and these classification schemes are based on the underlying logic of the agency role. Therefore, Hillman et al. (2000) went beyond board's independence and classified directors into these categories: business experts and community influential. According to Johnson et al. (2013), such classifications demonstrate the resource dependence role of directors.

Prior business experience of board members is the key determinant of a board's decision-making analytical quality. More specifically,

business experts on boards, due to their experience outside the firm, bring alternative viewpoints and interpretations on firm's issues to boardroom and provide valuable information about how other firms deal with similar problems and concerns which facilitate the board's decision-making process (Almandoz & Tilcsik, 2016; Faleye et al., 2018; Peterson & Philpot, 2007). Furthermore, Dass et al. (2014) argued that board members with industry-specific experience can enhance a board's ability to monitor managerial performance by shrinking the information gap between the firm's board and its management. In addition, directors with prior experience may help the firm to prepare for new business challenges and opportunities, given their knowledge and past expertise as insiders of other firms (see, King & Zeithaml, 2001; McDonald et al., 2008).

The most recent literature on corporate governance has stressed the importance of incorporating qualified female directors with prior experience to enhance the board's strategic decisions (Abbasi et al., 2020; Gull et al., 2018). According to Shrader et al. (1997), by better utilizing the contributions of women, firms can become more creative and innovative. According to the RDT, women in top management could be beneficial for the firm in acquiring a significant bundle of unique resources. Therefore, female directors with past expertise on boards may provide valuable human capital, such as experience and knowledge related to sustainability management matters than board members without such experience in other firms. Female directors with such experience may be more likely to perceive stakeholders' claims, and they may show a more positive attitude towards social and environmental issues (Galbreath, 2016; Zhang et al., 2013).

Based on prior evidence, we expect that female directors with prior business experience may have higher cognitive ability. More specifically, female business experts on boards could come up with creative solutions to a firm's internal issues due to their prior executive experience in other firms. Thus, they are more likely to improve the effectiveness of corporate governance, the quality of a board's decision-making process, and thereby improved sustainability performance. Thus, the last hypothesis can be formulated as follows:

Hypothesis 4. Business female experts on board are positively associated with sustainability performance.

3 | RESEARCH DESIGN

3.1 | Sample and data collection

Data were collected from Asset4 database of Thomson Reuters for a period of 5 years (2014–2018) for 93 nonfinancial firms listed on the national stock exchanges of Bahrain, Egypt, Kuwait, Morocco, Oman, Saudi Arabia, Turkey, and UAE (7, 10, 11, 4, 10, 14, 24, and 13, respectively).

The sampling period in this study started in 2014, because of data availability from Asset4 database of Thomson Reuters. It ended in

2018 because it was the most recent data available at the time of the study.

Our sample is relatively small as compared to other international studies in corporate governance because many companies in the Middle East region do not have environmental performance score in the Asset4 database of Thomson Reuters. We dropped some countries from the sample due to the lack of reliable data of corporate governance (e.g., Lebanon, Palestine, and Tunisia). After excluding companies and countries with missing information, a final unbalanced panel of 93 listed firms was built. Since some of the firms did not meet all of the required years, we adopted unbalanced panel regression. The estimates based on unbalanced panels are as unbiased and reliable as those based on balanced panels (Wooldridge, 2010).

Regarding the sources of data, the panel firm-level financial information and ESG index were mainly derived from the Thomson Reuters Asset4 database; the panel country-level data were gathered from the World Bank and World Economic Forum indicators; while the panel firm-level corporate governance and female directors' education, experience, and backgrounds information were hand-collected from annual reports that were downloaded from companies' websites.

3.2 | Dependent variable

The ESG score index (*ESG_INDEX*) reflects a company's environmental, social, and corporate governance performance. The index considers the company's sustainability practices as well as the weaknesses and strengths of its ESG performance. Asset4 ESG uses qualitative data from surveys, annual reports, company websites, stock exchange filings, CSR reports, media reports, and other sources to capture a firm's ESG performance in 10 main themes (e.g., resource usage, emissions, environmental product innovation, workforce, community, product responsibility, management, human rights, CSR strategy, and shareholders). The overall ESG score weights are normalized to percentages ranging between 0 and 100 (Thomson Reuters, 2019).

3.3 | Explanatory variables: Human capital of female directors

The proportion of female members on the board (*BGD*) is our main independent variable, and it is calculated as the number of women directors divided by the total number of board members (Cucari et al., 2018; Glass et al., 2016; Nadeem et al., 2020).

Also, we focused on three categories of female directors' human capital. Highly educated female members (*EDU_FEM*) who have advanced educational level (e.g., PhD and master degree); female business experts (*BUSS_FEM*) are proxied by female directors who have an executive or business background in other firms; and female community influentials (*COM_INF*) who are members of social/nonprofit organizations.

3.4 | Control variables

We used three categories of control variables supported by previous evidence that can impact the ESG performance.

First, we included variables on corporate governance characteristics that may influence board's decisions related to environmental performance. We control for board size (*B_SIZE*) and board independence (*IND*) (Zaid, Abuhijleh, & Pucheta-Martinez, 2020; Zaid et al., 2019; Zaid, Wang, et al., 2020), since the larger boards may benefit from more critical resources, greater information, and broader perspectives which can increase the firm's environmental concerns (Post et al., 2011). Moving to board independence, Post et al. (2015) found that a higher proportion of independent board directors would be able to improve the quality of environmental performance as it can help the corporate board in monitoring the management of the firm. We control for the existence of a CSR committee (*CSR_COM*) because firms that establish such committees are more prone to promote environmental practices (Cancela et al., 2020; Cucari et al., 2018). We also included CEO duality (*CEOD*) as a control variable because separation of roles of the board chairman and CEO will be important to protect the interests of stakeholders through greater sustainability reporting (Giannarakis et al., 2014).

Second, we took into account the firm-specific characteristics such as profitability, firm size, and leverage. In line with Hussain et al. (2018) and Song et al. (2017), we included profitability (*ROE*) as firms with better financial performance are expected to spend more on sustainability investments. We control for firm size (*F_SIZE*) in our model since larger firms are subject to greater pressure in terms of responding to stakeholders' demands, and they are more concerned about environmental policies in order to legitimize their activities (Cornett et al., 2016; Zaid, Abuhijleh, & Pucheta-Martinez, 2020). Leverage (*LEV*) was also accounted for in our model since Lan et al. (2013) and Zaid, Abuhijleh, & Pucheta-Martinez, 2020 reported a significant positive relationship between leverage and CSR reporting.

Third, we also selected two control country-specific variables. We control for the Global Gender Gap Index (*GEND_GAP*) because women's representation on corporate boards could have negative effects on strategic decision-making processes in countries with low gender parity (Hoobler et al., 2018). Post and Byron (2015) provided evidence that women on boards are more likely to be positively related to the firm's social sustainability. We included the strength of investor protection index (*INV_PROT*) because firms operating in countries that emphasize on shareholders' protection are expected to promote environmental sustainability (Byron & Post, 2016). Year dummies were added in the model to control for fixed year effects, similar to Issa and Fang (2019). Finally, we winsorized all firm-level variables at 1% and 99% percentile levels to mitigate the influence of extreme outliers. All of the variables' data were keyed-in using Statistical Package for Stata/MP 13. Table A1 provides a summary of the variables used and their definitions.

3.5 | Regression model specification

To test our hypotheses and examine whether **BGD** affects sustainability performance, we used multiple linear regressions as follows. **First**, the paper tests the effect of **BGD** on sustainability performance, as follows:

$$\begin{aligned} \text{ESG_INDEX}_{it} = & \beta_0 + \beta_1 \text{BGD}_{it} + \beta_2 \text{B_SIZE}_{it} + \beta_4 \text{IND}_{it} + \beta_5 \text{CSR_COM}_{it} \\ & + \beta_6 \text{CEOD}_{it} + \beta_7 \text{ROE}_{it} + \beta_8 \text{F_SIZE}_{it} + \beta_9 \text{LEV}_{it} \\ & + \beta_{10} \text{INV_PROT}_{it} + \beta_{11} \text{GEND_GAP}_{it} + \beta_{12} \text{INDUSTRY}_{it} \\ & + \sum \text{YEAR}_{it} + \epsilon \end{aligned}$$

Second, we examined the effect of female directors' human capital (educational level, business experience, and social engagement background) on sustainability performance, as follows:

$$\begin{aligned} \text{ESG_INDEX}_{it} = & \beta_0 + \beta_1 \text{EDU_FEM}_{it} + \beta_2 \text{BUSS_FEM}_{it} + \beta_3 \text{COM_INF}_{it} \\ & + \beta_4 \text{B_SIZE}_{it} + \beta_5 \text{IND}_{it} + \beta_6 \text{CSR_COM}_{it} + \beta_7 \text{CEOD}_{it} \\ & + \beta_8 \text{ROE}_{it} + \beta_9 \text{F_SIZE}_{it} + \beta_{10} \text{LEV}_{it} + \beta_{11} \text{INV_PROT}_{it} \\ & + \beta_{12} \text{GEND_GAP}_{it} + \beta_{13} \text{INDUSTRY}_{it} + \sum \text{YEAR}_{it} + \epsilon_{it} \end{aligned}$$

whereas ϵ_{it} represents the disturbance term. The firm is represented by i , and t refers to the time period. β_0 is the constant and β_1 – β_{12} are the regression coefficients.

4 | RESULTS

4.1 | Descriptive statistics

Table A2 presents the descriptive statistics for the sample. The average for sustainability performance (**ESG_INDEX**) in the sample is 44.978, with a standard deviation of 19.528, thus, suggesting a significant variation in sustainability performance. **BGD** is on an average of 5.2% in our sample, which suggests that the boards in the Middle East remain overwhelmingly dominated by men directors. This low representation of women directors on boards is in line with most of the studies being conducted in the Middle East region (e.g., Arayssi et al., 2020; Issa et al., 2021; Issa & Fang, 2019; Zaid, Wang, et al., 2020). With regard to female board directors, the largest subgroup of female members is that of highly educated members (**EDU_FEM**) (2.2%) followed by community influentials (**COM_INF**) (1.4%) and business experts (**BUSS_FEM**) (0.5%).

The sampled firms have an average of 9 board members (**B_SIZE**), and around 35% of the board members are independent (**IND**). This is comparable with the evidence of Barka and Legendre (2017) and Sarhan et al. (2019b). Finally, around 10.1% of the firms have a CSR committee (**CSR_COM**), and 9.7% of them have CEOs who also hold chairman positions (**COED**).

4.2 | Bivariate analysis

Table A3 presents the results of both Pearson and Spearman correlation. As displayed in Table A3, the correlations between **BGD**,

highly educated females (**EDU_FEM**) and female community influentials (**COM_INF**), and sustainability performance (**ESG_INDEX**) are positive and significant, indicating that women and their human capital resources have positive impacts on sustainability performance. The majority of control variables, except the board's independence (**IND**) and CEO duality (**COED**), also have a significant association with sustainability performance. Nonetheless, no correlation exceeds .80, indicating that multicollinearity may not be a serious threat in our multivariate analysis (Gujarati, 1995). Alternatively, the highest variance inflation factor (VIF) was 1.59 which is below 10, and this also indicates that multicollinearity is not likely (Wooldridge, 2012, p. 98).

4.3 | Multivariate regression findings

Table A4 reports the OLS regression results using robust and clustered (by firm) standard errors. The results indicate that overall models are significant at $P < .01$. Model 1 reports the ordinary least squares (OLS) regression between control variables including board characteristics, firm characteristics, and country-level variables and sustainability performance index.

In respect of board characteristics, our results demonstrate that **B_SIZE** ($\beta = 10.897$, $P < .05$) and **CSR_COM** ($\beta = 9.226$, $P < .10$) have a positive association with sustainability performance index. For firm characteristics, our results demonstrate that **ROE** ($\beta = .147$, $P < .05$) and **F_SIZE** have a positive association with sustainability performance. For country-level control variables, our results show that **GEND_GAP** ($\beta = 200.545$, $P < .05$) has a significant positive association with sustainability performance. Moreover, the R -squared in Model 1 is .371, which suggests that 37.1% of sustainability performance can be explained by the variables that we added in Model 1.

Model 2 includes the **BGD** and all control variables. The OLS regression analysis as presented in Table A4 reflects that **BGD** ($\beta = 49.597$, $P < .01$) is positively associated with **ESG_INDEX**. Our H1 is accepted. The study supports the perspective that the greater sustainability performance is a result of greater representation of female directors on boards. This finding is consistent with previous studies (Birindelli et al., 2019; Fernandez-Feijoo et al., 2014; Liu, 2018; Pucheta-Martínez et al., 2020). Our result supports the RDT that gender diversity on board provides valuable resources to the corporation (e.g., expertise, skills, and ties to other external contingencies) that are useful determinants for improvement of sustainability practices. Also, the result is in line with gender socialization theory which suggests that women directors have greater ascription to communal characteristics which mainly emphasize the welfare of the society, supporting others, kindness, sympathetic behavior, and interpersonal sensitivity to peoples' needs (Liu, 2018).

In Models 3–5 shown in Table A4, we tested the relationship between female directors' human capital and sustainability performance. We disaggregated **BGD** (e.g., **EDU_FEM**, **COM_INF**, and **BUSS_FEM**) and consecutively analyzed each factor associated with **ESG_INDEX** in the regression models.

In Model 2 that is shown in Table A4, *EDU_FEM* ($\beta = 74.33$, $P < .01$) is positively associated with *ESG_INDEX*, indicating that the higher the female directors with advanced education on the board, the greater is the sustainability performance. Therefore, our H2 is accepted. The result is in line with human capital theory which suggests that high education provides appropriate human capital in order to execute the roles of the board of directors, and it improves the ability to successfully execute the monitoring and roles of resources provision by increasing organizational performance.

Regarding our third hypothesis (H3), the results in Model 4 indicate that *COM_INF* ($\beta = 74.33$, $P < .01$) on the board is positively and significantly associated with sustainability performance. This means that our third hypothesis is supported. Female community influentials on the board have a significant influence on sustainability performance as a result of their early experiences through social interactions. The result is in line with RDT indicating female directors with social interaction background are more impelled towards social practices. Also, the result is consistent with gender socialization theory that suggests communal qualities of women may also influence the board of directors to think more broadly about socially responsible business practices and consider a broader range of stakeholders (Byron & Post, 2016).

Model 5 which is shown in Table A4 reveals that prior business experience of female directors (*BUSS_FEM*) is insignificant. The results indicate that business experience of female directors is not a determinant of sustainability performance. Thus, H4 is not supported with the hypothesis following RDT. This is similar to the findings of Ramon-Llorens et al. (2020) who reported an insignificant influence of prior business experience of directors on social and environmental reporting.

Regarding the control variables, it is found that their impacts are generally consistent with the findings in existing studies. As the results show, five out of nine control variables are found to be significant in all models in Table A4. For corporate governance control variables, *B_SIZE* and *CSR_COM* maintain positive relationships with sustainability performance in all of the estimations. These findings are consistent with the results of Cancela et al. (2020) and Post et al. (2011). In respect to firm characteristics, profitability *ROE* and *F_SIZE* seem to be the main and important drivers of sustainability performance in the Middle Eastern countries. These results are consistent with prior studies, such as Orazalin and Baydauletov (2020), Hussain et al. (2018), and Post et al. (2015). Regarding the country-level control variables, *GEND_GAP* is found to be statistically and positively significant in all of the models. This is consistent with the idea that women on boards are more likely to influence the firm's strategic decisions in countries with greater gender equality and social fairness (Adams, 2016; Post & Byron, 2015).

In Table A5, we used random effects regression with lagged independent variables. Our previous OLS analysis in Table A4 has focused on assessing the effect of current female directors' human capital on current board decision-making process. However, it is possible that female directors' human capital in this period affects board's decisions related to sustainability performance in the next period. Therefore,

using lagged variables of *BGD* in terms of human capital reduces the impact of simultaneity since past board gender structure and current board's performance are not determined in the same period (Wintoki et al., 2012).

Model 2 in Table A5 shows that there is a positive and significant relationship between *BGD* ($\beta = 16.77$, $P < .05$) and *ESG_INDEX*. In Models 3–5 which are shown in Table A5, we tested the relationship between lagged disaggregated variables of female directors' human capital and sustainability performance. As shown in Model 3, *EDU_FEM* ($\beta = 30.474$, $P < .05$) is positively associated with *ESG_INDEX*. Also, Model 4 shows that *COM_INF* ($\beta = 53.342$, $P < .01$) on the board is again positively and significantly associated with sustainability performance. However, prior business experience of female directors (*BUSS_FEM*) shows insignificant association.

4.4 | Robustness check for endogeneity

A common issue with studies on board diversity is endogeneity (Jo & Harjoto, 2012). We believe that *BGD* is a potential endogenous variable. Endogeneity issue might be existing in our sample because of reverse causality. It is not clear whether better diverse-board drives the sustainability performance or vice versa. To account for such concerns, we adopted a two-step system generalized method of moments (GMM)¹ (Blundell & Bond, 1998) to ascertain the robustness of our empirical findings. The results of GMM show that the coefficient for *BGD* and female directors' human capital profiles remain consistent with our baseline regression results and are robust to endogeneity concerns. The results of robustness test are not reported for brevity but available upon request.

5 | DISCUSSION

Despite the expansion in female leaders' representation at top level of management globally, women continue to be under-represented at senior levels in the Middle East region. The Middle East countries are highly gendered in professional work environment as women are mostly employed in the education and health care sectors, whereas men mainly uptake leadership positions in the organizations (Bastian et al., 2018; Metcalfe, 2011). This domination of management as being a male paradigm is evident on corporate boards in the Middle Eastern countries. For instance, women's representation on board of directors is on average 5.2% in our sample. A recent survey by Hawkamah Institute for Corporate Governance² in 2020 finds that the proportion of women on listed firm boards in the Arabian Gulf countries, Egypt, and Lebanon is only 2.5%. However, the survey reveals that some of the markets in the region have witnessed huge improvements in the few past years. For example, listed firms on the UAE market doubled the number of female directors from 1.9% in 2017 to 4% in 2020.

From the perspective of institutional theory, two elements of institutional environment are considered in order to increase our

understandings about women's participation in the workforce and leadership positions in the Middle Eastern region. These include regulatory factors which cover areas, such as the legal and governance structures, and the sociocultural factors that include the culture portrayed through norms and beliefs (Marinakou & Giousmpasoglou, 2017). The World Bank reported that although women secure three-quarters of legitimate rights of men in certain areas in a typical global economy, they partake lower than half of the legal rights of men in a typical Middle Eastern economy (Bastian et al., 2018; Kochhar et al., 2017). It was also reported by the World Bank in 2018 that most of the Middle Eastern countries prohibit women from employment in specific industries. In most of these countries, working for women outside of their homes was considered to be inappropriate. Normally, females are expected to accept unequal burden for childcare and household work. Wilkinson (1996) conducted a study in the Arabian Gulf region including Bahrain, UAE, and Oman and reported that cultural issues in these countries represent the key barriers faced by women in holding leadership positions. The author added that the beliefs and customs stand against the career development of women, and this indicates that the likelihood for selecting them as leaders is limited. In most of Middle Eastern countries, the understandings of labor laws are directed by *Urf* (custom) that reflects the necessity to protect females and establish a moral work setting. This is associated with the concept in *Shari'ah* (Islamic law) that a woman must obey her husband and men are responsible for all expenditures.

According to Salloum et al. (2019), women are experiencing perceived discrimination with regards to employment and holding senior leadership positions in the Middle Eastern countries, and the governments in these countries (e.g., Oman, Saudi Arabia, Bahrain, UAE, Egypt, and Kuwait) are adopting new political reforms and altering corporate laws for the purpose of promoting women participation in strategic leadership roles as well as increasing economic freedoms. Due to the globalization of businesses and increased access to the internet and technologies worldwide, people became more connected than before. For these reasons, there was a cultural shift in different countries, including the Middle East as became started to compare themselves with others. The economic crises have also created a significant impact on the role of women in supporting their families. For these reasons, the percentage of women's employment and involvement in strategic decision makings started to increase.

Drawing upon resource dependency theory, human capital theory, and gender socialization theory, this study examines the differential impact of female human capital profiles on sustainability performance. Our findings showed that not all female directors are equally effective in developing sustainability performance. Specifically, we found that female directors who have high level of education and a background of social engagement have a positive impact on sustainability performance, while those with prior business experience do not have any significant effect. Further, we found that female directors with advanced education and social engagement background are positively associated with sustainability performance.

We found that female directors on boards are relevant in formulating sustainability strategies and policies. More specifically, we found that firms with a greater gender-diverse board are more likely to get a melting pot of fresh perspectives and new ideas, thus improving the quality of board's decisions. This is consistent with our theoretical argument that female directors can provide critical resources to the board (e.g., expertise, skills, and ties to other external contingencies). Such important resources could enhance the board decision-making process and promote the quality of board decisions (Hillman et al., 2002; Nielsen & Huse, 2010). In addition, female directors have nonbusiness perspectives and different values from their male counterparts, and they tend to be more concerned to sustainability practices than men. The result is in line with the RDT which posits that women directors play a vital role in providing unique resources to organizations with regard to sustainability performance (Hillman et al., 2009). As females hold many key positions both in formal and informal environmental organizations (Tindall et al., 2003) and are central to many environmental movements (Lu & Herremans, 2019), it was expected that they would transfer their related competencies to the boardroom. Thus, RDT may provide better explanation for the role of *BGD* in fostering corporate sustainability performance, that is, composed of environmental, financial, and social objectives.

Furthermore, according to the gender socialization theory, female top leaders in organizations are evaluated as more communal than male top leaders (Carli & Eagly, 2016). These communal traits may be largely beneficial in improving stakeholder's management and responding effectively to societal expectations about developing sustainability. Therefore, female members are more likely to exercise influence on decisions pertaining to social and environmental practices. Our findings support previous research on the positive relationship among *BGD* and sustainability performance (e.g., Ben-Amar et al., 2017; Böttcher & Müller, 2016; García-Sánchez et al., 2020; Glass et al., 2016; Haque, 2017; Lu & Herremans, 2019; Nadeem et al., 2020).

Moreover, Johnson et al. (2013) and Hillman et al. (2000) suggested that directors may differ in the level of social and environmental orientation due to their experiences and backgrounds (e.g., education, community influential, and business experience) and consequently exert differential impacts on sustainability performance. Inspired by this, we classified the human capital of female directors into three categories including highly educated members, community influentials, and business experts to determine whether all female directors are equally beneficial in terms of sustainability performance by considering their prior experiences and backgrounds that significantly determine their social and environmental orientations.

Our results support the existence of highly educated female directors on corporate boards. We found a positive relationship between the percentage of female directors with higher educational level and sustainability performance. This suggests that advanced education can be leveraged to enhance female directors' contributions in improving decisions and strategies related to sustainability performance. This is consistent with the human capital theory that proposes an associated increase in human capital profiles of male and female

directors and board's decision-making process. Female directors who pose an advanced education level bring diverse perspectives to the discussion in board meetings that may improve the board's understanding of societal environmental challenges from different viewpoints. This encourages divergent and critical thinking, which in turn enable them to come up with potential solutions (Cox & Blake, 1991). According to human capital theory, educated board members have higher environmental awareness. That is, directors with a postgraduate qualification represent a valuable strategic resource for organizations and have better abilities in creating strategic access to diverse external resources. Carpenter and Westphal (2001) added that postgraduate qualification like a PhD provides an indication about the competencies and distinctive capabilities of directors that are vital for the execution of governance function.

Our findings also showed that female community influentials on board are positively and significantly associated with sustainability performance. This indicates that when boards include female directors with prior social nonprofit activities background, the firm is more likely to have higher sustainability performance index score. Female community influentials are more likely to be concerned with social demands, environmental standards, or charitable contributions and are more in favor of sustainability development a result of their early experiences through social interactions. In addition, female directors with social backgrounds bring important resources and social network ties to their corporate boards due to their different experiences and nonbusiness backgrounds. According to the RDT, social background of female directors may enable them to provide nonbusiness perspectives on firm's issues that help the board to make accurate decisions besides creating and maintaining long-term relationships with multiple groups of stakeholders (Hillman et al., 2002). Nielsen and Huse (2010) also stated that women directors are normally more tolerant than men directors. This may possibly refer to the fact that women tend to accept others' opinions and positions, involve in solving others' problems, provide support for others, and also have a tendency to resolve different relational and interpersonal issues. The authors added that "women may be particularly sensitive to – and may exercise influence on – decisions pertaining to certain organizational practices, such as corporate social responsibility and environmental politics" (Nielsen & Huse, 2010, p. 138). Accordingly, they play a key role in promoting corporate sustainability performance for the purpose of ensuring a congruence among an organization's decisions and the societal values.

Finally, our results found that female directors with prior business experience in other firms have an insignificant impact on sustainability performance. This finding does not confirm our argument that prior business experience of female members can influence board's decisions related to sustainability positively. However, this finding is similar to Ramon-Llorens et al. (2020) who suggested an insignificant influence of prior business experience of directors on social and environmental reporting. Our results are robust to alternative regression methods (e.g., OLS, robust, and clustered [by firm] standard errors and random effects with lagged independent variables) and the use of GMM estimator to correct endogeneity problem.

6 | CONCLUSION

This study aimed to investigate the influence of female directors' human capital profiles on corporate sustainability performance. To the best of our knowledge, this is the first study to analyze and test the differences in the impact of female directors' human capital on sustainability performance. We found that not all female directors are equally influential to sustainability performance by considering their human capital profiles which significantly determine their decisions. Further, we found that female directors with an advanced education and social engagement background are positively associated with sustainability performance. Our findings contribute to corporate governance literature by providing a more in-depth analysis of female directors in board rooms by highlighting the importance of heterogeneity in their impact on sustainability performance.

In light of the results, this research provides some important practical implications. Our findings encourage companies in the Middle East region to push through and implement more gender diversity policies to increase board effectiveness and gain legitimacy by responding to societal expectations about improving sustainability performance. Furthermore, companies should pay attention to experiences, educational levels, and backgrounds of female directors based on the assumption that human capital profiles of female directors may influence the board effectiveness. Effective corporate boards are made up of directors from both genders with advanced knowledge and experiences who reflect strategic business opportunities and challenges and the diversity of stakeholders.

Our results also have important practical implications for policymakers, since the recent international recommendations call for a more gender diverse boards, in order to improve board effectiveness and sustainability performance. Policymakers should play an active role in promoting gender diversity on regional boards by introducing initiatives that provide more support for qualified women's representation on boards to ameliorate corporate sustainability performance.

Although this scholarly article attempts to fill the existing gap in the literature, there are several shortcomings that call for future research. **First**, the sample of this study was relatively small due to the unavailability of data. Future researchers, albeit difficult, might use a larger sample of Middle Eastern firms over a broader time period to better examine how the knowledge, experiences, and skills of female directors can influence a firm's sustainability strategies.

Second, there may be other types of female board members that should be considered in future research. In our study, we tested the impact of three specific categories of female members (highly educated, community influential, and business expert) on sustainability performance. Future research can further explore the effect of other experiences and backgrounds of female directors on sustainability, such as university affiliation or professorship, sustainability-related experience, and overseas experience.

Third, under-representation of female directors in the Middle East region restricts our ability to conduct additional tests by exploring the impact of critical mass of qualified female directors on sustainability

performance. Therefore, we recommend future researchers to test our findings in other contexts, such as developed markets.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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ENDNOTES

¹ We tried to use two-stage least squares (2SLS) technique, but we did not find reliable external instruments. It was hard to find a valid external instrumental variable that is highly correlated with board gender diversity but uncorrelated with sustainability performance (Jo & Harjoto, 2012; Wintoki et al., 2012). In the absence of an appropriate external instruments in the literature, the GMM estimator technique proposed by Blundell and Bond (1998) is the most appropriate for this study.

² The Hawkamah Institute for Corporate Governance was set up in 2006 to help bridge the corporate governance gap in the region. The Institute was founded by international organizations including the Organisation for Economic Co-operation and Development (OECD), the International Finance Corporation (IFC), and the World Bank, and regional organizations such as the Union of Arab Banks and the Dubai International Financial Centre (DIFC) Authority.

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APPENDIX A.

TABLE A1 Study variables symbols and measurements

Variable	Abbreviation	Definition and measurement	Source of data
Dependent variable			
ESG	ESG_INDEX	Environmental, social and governance (ESG) performance score.	Thomson Reuters' ASSET4
Independent variable			
Board gender diversity	BGD	The ratio of female directors compared to the total number of board members.	Annual reports
Highly educated members	EDU_FEM	The ratio of female directors with high educational level (e.g., PhD and Master) compared to the total number of board members.	Annual reports
Community influentials	COM_INF	The ratio of female directors having social engagement background compared to the total number of board members.	Annual reports
Business experts	BUSS_FEM	The ratio of female directors having finance and business experience compared to the total number of board members.	Annual reports
Control variables			
Board size	B_SIZE	Total number of board members.	Annual reports
Board independence	IND	The proportion of independent directors to the total number of board members.	Annual reports
CSR committee	CSR_COM	Dummy variable that is equal to 1 if the firm has a CSR committee, 0 otherwise.	Annual reports
CEO/chairperson duality	CEOD	Dummy variable that is equal to 1 when the CEO holds the chair position, 0 otherwise.	Annual reports
Return on equity	ROE	Income before extraordinary items divided by total equity.	Thomson Reuters' ASSET4
Firm size	F_SIZE	Natural logarithm of the book value of total assets.	Thomson Reuters' ASSET4
Leverage	LEV	Ratio of total debt divided by total assets.	Thomson Reuters' ASSET4
Year	Year dummy	A dummy variable for each year of the sample period from 2014 to 2018.	
Industry	Industry dummy	A dummy variable divided into seven dummy variables and equals 1 if the firm belongs to a specific industry; 0 otherwise	
Country-level variables			
Global Gender Gap Index	GEND_GAP	Global Gender Gap Index of national gender gaps benchmarks on economic, education, health, and political criteria. This score ranges from 0 (no equality) to 1 (equality).	World Economic Forum
Strength of investor protection index	INV_PROT	Strength of Investor protection Indicator represents a combination of three dimensions: transparency of related-party transactions, liability of company directors for self-dealing and ease of shareholder suits for director misconduct. This score ranges from 0 (no protection) to 1 (maximum protection).	World Bank

Variable	Mean	SD	Min	Max
ESG	44.978	19.528	10.29	89.23
BGD	0.052	0.087	0	0.5
EDU_FEM	0.022	0.047	0	0.222
COM_INF	0.014	0.035	0	0.167
BUSS_FEM	0.05	0.107	0	0.556
B_SIZE	9.501	2.536	1	19
IND	0.35	0.25	0	1
CSR_COM	0.101	0.302	0	1
CEOD	0.097	0.296	0	1
ROE	12.223	14.689	-81	61
F_SIZE	23,222,065.63	34,262,133.3	140,290	202,580,542
LEV	0.236	0.173	0	0.792
GEND_GAP	0.628	0.02	0.599	0.655
INV_PROT	0.526	0.095	0.38	0.69

TABLE A2 Descriptive statistics

TABLE A3 Correlations matrix

	VIF	1/VIF	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ESG			1.000	.416***	.353	.364***	.286***	.252***	-.051	.263***	-.002	.169***	.491***	.193***	.249***	-.005
BGD	1.09	.920	.311***	1.000	.690	.577***	.720***	.144***	-.075	.184***	.128***	.067	.196***	.128***	.193***	-.051
EDU_FEM	1.57	.636	.335***	.588***	1.000	.412	.535***	.175***	.095*	.172***	.086**	.159***	.175***	.127***	.142***	-.157***
COM_INF	1.23	.811	.358***	.395***	.359	1.000	.308***	.151***	-.003	.253***	.102**	-.020	.164***	-.011	.013	-.056
BUSS_FEM	1.33	.754	.075	.707***	.425	.198***	1.000	.148***	-.113	.005	.086**	.060	.137***	.158***	.182***	-.004
B_SIZE	1.09	.916	.284***	-.034	.136***	.066	-.041	1.000	-.024**	.108**	-.133**	.173***	.190***	.117**	-.059	-.004
IND	1.38	.722	-.057	-.115**	.111*	-.010	-.123***	.040	1.000	.021	-.061	-.093**	-.102**	-.126	-.293***	-.166***
CSR_COM	1.23	.810	.278***	.144*	.203***	.229***	-.032	.088*	-.005	1.000	.012	.080**	.309	.060	-.066	.145**
CEOD	1.09	.921	-.004	.116*	.076	.128**	.114	-.070	-.065	.012	1.000	-.088**	-.055**	-.122**	.062	-.150**
ROE	1.09	.922	.155***	.032	.049	-.013**	.039	.155***	-.107**	.055	-.051	1.000	.052	-.053	.085*	-.083**
F_SIZE	1.20	.834	.492***	.150**	.169	.162***	.101**	.160***	-.159***	.311***	-.038	.059	1.000	.032	.061	.093**
LEV	1.13	.887	.120*	.060	.083*	-.081*	.044	.061	-.139***	.017	-.115**	-.133**	.003	1.000	.191***	.122**
GEND_GAP	1.51	.662	.221***	.119*	.121***	.056	.087*	.014	-.292***	-.064	.101**	.042	.030	.134**	1.000	-.322***
INV_PROT	1.59	.671	-.080*	-.096*	-.186***	-.075	-.041	-.003	-.184***	.138***	-.151***	-.016	.085**	.071	-.422	1.000

Variables are significant at ***0.01, **0.05, and *0.10.

TABLE A4 Results of OLS regressions

	Model 1 Coef. (t test)	Model 2 Coef. (t test)	Model 3 Coef. (t test)	Model 4 Coef. (t test)	Model 5 Coef. (t test)	Model 6 Coef. (t test)
BGD		49.597*** (3.26)				
EDU_FEM			74.33*** (4.79)			33.653*** (2.04)
COM_INF				148.847*** (7.13)		129.233** (5.86)
BUSS_FEM					23.802 (3.27)	9.235 (1.29)
B_SIZE	10.897** (2.36)	11.759*** (2.94)	9.966*** (4.34)	10.042*** (4.49)	11.341*** (4.83)	9.905*** (4.45)
IND	6.686 (1.14)	8.184 (1.41)	4.57 (1.49)	6.895** (2.20)	7.523** (2.37)	6.235* (1.93)
CSR_COM	9.226* (1.93)	7.394* (1.58)	7.152** (2.50)	5.566** (2.19)	9.77*** (3.51)	5.32** (2.06)
CEOD	1.368 (0.23)	−.035 (−0.01)	.446 (0.15)	−.464 (−0.18)	.424 (0.15)	−1.006 (−0.38)
ROE	.147** (2.10)	.139** (2.14)	.136*** (3.20)	.164*** (3.75)	.139*** (3.15)	.154*** (3.61)
F_SIZE	5.24*** (6.72)	4.921*** (6.42)	4.94*** (12.40)	4.913*** (12.52)	5.048*** (12.31)	4.745*** (11.93)
LEV	12.631 (1.52)	10.884 (1.41)	10.335** (2.49)	15.157*** (3.69)	11.794*** (2.82)	13.46*** (3.28)
GEND_GAP	200.545** (2.24)	194.188** (2.17)	186.231*** (4.22)	192.224*** (4.50)	198.052*** (4.54)	185.873*** (4.25)
INV_PROT	−7.44 (−0.40)	−2.137 (−0.12)	−1.697 (−0.18)	−3.09 (−0.36)	−6.481 (−0.72)	−.691 (−0.08)
Time	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Constant	−192.741*** (−3.17)	−190.637*** (−3.16)	−179.85*** (−5.96)	−185.14*** (−6.32)	−190.737*** (−6.35)	−179.527*** (−5.98)
R ²	%37.1	%41.5	%39.8	%43.5	%38.7	%44.5
Number of observations	460	460	460	460	460	460
F (P value)	16.352 (0.000)	20.518 (0.000)	61.575 (0.000)	63.991 (0.000)	53.694 (0.000)	57.489 (0.000)

Variables are significant at ***0.01, **0.05, and *0.10.

TABLE A5 Results of random effects regressions

	Model 1 Coef. (t test)	Model 2 Coef. (t test)	Model 3 Coef. (t test)	Model 4 Coef. (t test)	Model 5 Coef. (t test)	Model 6 Coef. (t test)
L. BGD		16.77** (2.41)				
L. EDU_FEM			30.474** (2.27)			26.538** (1.72)
L. COM_INF				53.342*** (2.61)		45.863** (2.18)
L. BUSS_FEM					6.615 (1.07)	1.605 (0.23)
B_SIZE	6.915** (2.43)	6.267** (2.21)	6.621** (2.34)	7.631*** (2.71)	6.593** (2.31)	7.328*** (2.59)
IND	11.488*** (3.28)	10.656*** (3.05)	10.365*** (2.95)	11.184*** (3.22)	11.213*** (3.19)	10.336*** (2.95)
CSR_COM	10.982** (2.00)	10.458** (1.99)	10.079* (1.87)	9.423* (1.82)	11.173** (2.06)	8.825* (1.70)
CEOD	-3.791 (-1.03)	-3.428 (-0.95)	-3.273 (-0.90)	-2.241 (-0.62)	-3.763 (-1.03)	-2.079 (-0.58)
ROE	-.009 (-0.24)	-.006 (-0.15)	-.005 (-0.13)	-.007 (-0.18)	-.009 (-0.23)	-.004 (-0.11)
F_SIZE	4.726*** (5.22)	4.601*** (5.23)	4.603*** (5.16)	4.664*** (5.39)	4.67*** (5.18)	4.573*** (5.27)
LEV	1.171 (0.22)	.538 (0.10)	-.501 (-0.09)	2.246 (0.42)	.803 (0.15)	.709 (0.13)
GEND_GAP	260.03*** (2.92)	249.833*** (2.29)	252.887*** (2.90)	252.623*** (3.01)	256.439*** (2.90)	248.569*** (2.96)
INV_PROT	-1.629 (-0.09)	-.8 (-0.04)	1.037 (0.06)	.43 (0.02)	-1.729 (-0.09)	2.493 (0.14)
Time	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-212.871*** (-3.39)	-203.947*** (-3.38)	-207.083*** (-3.37)	-210.843*** (-3.56)	-209.137*** (-3.36)	-206.99*** (-3.50)
R ²	%33.3	%36.2	%35.5	%37.9	%34.2	%38.8
Number of observations	460	460	460	460	460	460
Chi-square	74.533	64.093	71.65	77.85	66.35	81.33
F (P value)	0.000	0.000	0.000	0.000	0.000	0.000

Variables are significant at ***0.01, **0.05, and *0.10.