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## THE IMPACT OF BOARD GENDER DIVERSITY ON SUSTAINABILITY PERFORMANCE IN MALAYSIAN FIRMS: THE ROLE OF TOP EXECUTIVE GENDER

### ABSTRACT

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The purpose of this paper is to argue the relationship between sustainability performance, the top executive gender, and the board gender diversity. This study examines the moderates' effect of top executive gender on the relation between the board gender diversity and sustainability performance. The study investigates the relation between the board gender diversity, the sustainability performance and the top executive of a sample of 78 Malaysian firms over the 2010–2019 period. The results obtained show that, for Malaysian companies, a higher percentage of female members of the board is positively associated with performance sustainability in firms with a higher percentage of women in the top management team. The findings may be of interest to academic researchers, investors, regulators, and professional accounting bodies as it shows legislative reforms in regulating the composition of their boards.

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*Keywords: sustainability performance, Malaysian firms, governance, board diversity, women executives*

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## INTRODUCTION

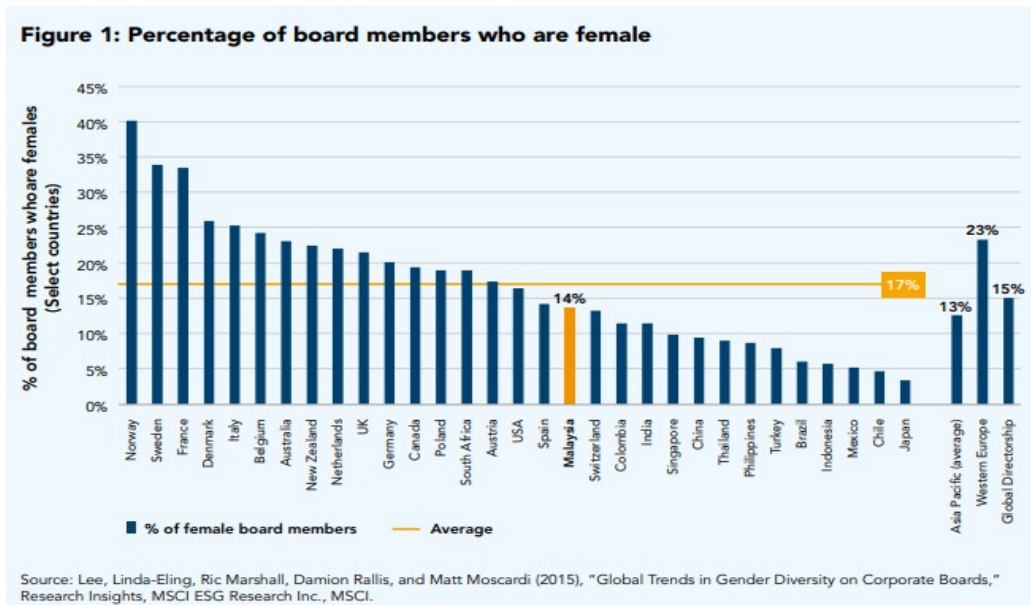
In the new global economy, sustainability has become a central issue for society. In fact, sustainability is about building a society in which a proper balance is created between economic, social and ecological objectives. There are clear rules and a broad understanding of how to take the economic pulse of a company at any given time. In this area, a considerable amount of literature was published on sustainability performance (Dhaliwal et al., 2011; Lo and Sheu, 2007). These studies have reported that, to attract future investments (Willis, 2003; Shediak-Rizkallah and Bone, 1998), maintain their public image (Whitmarsh et al., 2011; Dumay et al., 2010), and retain competitive advantages (Egbu et al., 2005), many organizations are adding sustainability as an important organizational goal.

Therefore, companies today tend to focus and report on their philanthropic initiatives and improved labor practices (i.e. Reducing accidents at work, hiring more women and employing a more ethnically diverse workforce). Although highly desirable, these practices do not reflect the expectations society has of the private sector in terms of building a sustainable society.

In this context, the female leadership style is characterized by leaders who are more caring, sensitive and sympathetic, which implies that they are more proactive in cooperating, while male leaders are more autocratic, dominant, self-confident and, as a consequence, more competitive (Eagly et al., 2007). Women have a more democratic leadership style in the decision-making process than males. In addition, they enjoy greater dedication towards employees (Bird and Brush, 2002), and their leadership is orientated towards interpersonal relationships (Melero, 2011). In line with this, Ahmad et al., (2018) argue that a mass of three or more women can cause a fundamental change in boardroom dynamics; they propose that a well-managed diversity contributes to an effective board, thus serving to safeguard all stakeholders' interests. Oyenike et al. (2016) found that Women highly value honesty in their work, and they can provide ethical values, transparency, and higher credibility. In this area, the gender diversity of the board of directors is a way for companies to support gender equality issues. Generally, men are known as leaders in a company, while women are considered inadequate for leadership positions. Therefore, we can conclude that the presence of women will contribute to the sustainable development of the company and make sustainability decisions. The purpose of this paper is to review recent research into the effect of board gender diversity on sustainability performance and the moderating role of women executives in this relationship. Given these gaps in the literature, this study makes several contributions that may be described as follows. First, the study makes a theoretical contribution to governance and sustainability performance by examining the moderating effect of women executives on the relation between board gender diversity and sustainability performance. The central question in this study asks how women in top

management teams can affect the relationship between board gender diversity and sustainability performance. The originality of this paper consists in proposing the establishment of dynamic links between board gender diversity and sustainability performance around women executives. We construct panel data sets for non-financial listed companies in the Malaysian context, covering the period 2010-2019. The choice of the Malaysian context is motivated by the promotion of the Malaysian Code on Corporate Governance (MCCG) in 2017 added gender diversity as a step to provide board diversity. In fact, firms expected to have 30% of women on their boards in line with the latest MCCG. In this case, Malaysia is the first Asian country to achieve at least 30% of women directors on the boards of the top 100 publicly listed companies by 2020. In the same area, gender diversity, in 2017 about 13 percent of the board positions in Malaysia fled by women and the rest by men. In fact, the trend over the last four years reveals a slow pace of increase in the proportion of women board members. This is just below the global average of 15 percent, and much lower than the level in many developed countries such as Norway, Sweden, and France etc.

Figure1. Percentage of gender diversity



In this context, in Malaysia, following the 1997 Asian financial crisis, the Malaysian Institute of Corporate Governance was established in 1998 and subsequently the Malaysian Code on Corporate Governance. The sustainability Framework is essentially a set of guidelines for Malaysian public listed companies to assist them in sustainability performance. The

structure of the paper is as follows. Section 1 defines the Malaysian context. Section 2 presents the theoretical framework. Section 3 describes a review of the literature and the research hypotheses. Section 4 presents the methodology, which takes into account a description of the sample, a definition of the variables and the analyses used. Section 5 presents the main empirical results. Finally, section 6 presents the robustness test and concluding remarks are given in section 7.

## **THEORETICAL BACKGROUND**

To discuss the relationship between gender diversity and sustainability performance, previous studies drew on some main theories, namely agency theory and resource dependency theory. In fact, literature has shown a growing interest in the incorporation of females into boardroom positions and their significant role in firms (Huse and Solberg, 2006; Torchia et al., 2011). In this area, before discussing prior literature regarding gender diversity and performance sustainability, we will discuss the main theories associated with the investigated relation. These include the agency and resource dependency theory to develop a theoretical framework that will help in understanding the influence of women on performance sustainability.

### **Agility theory**

Traditionally, Jensen and Meckling (1976) explain the existence of a principal-agent relationship between shareholders and management and define the relation as “a contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf which involved delegating some decision making authority to the agent” (p. 308). The separation of ownership and control among a firm’s managers and owners causes conflicts of interest (Bauer et al., 2018). In this regard, corporate governance mechanisms may help to reduce agency problems (Allam and Newman, 2018) and improve information transparency (Govindan et al., 2021; Jo and Harjoto, 2011). Therefore, shareholders may demand more control mechanisms for monitoring managers to reduce agency costs, such as external audits (Anderson et al., 1993), corporate governance and CSR disclosure (Jo and Harjoto, 2011; Garcia et al., 2015).

Adams and Ferreira, 2009; Francoeur et al., 2008; Huse and Solberg, 2006 explain the relationship between female directors and agency theory. In this context, agency theory argues that female directors may act as a mechanism of supervision and control of a board’s activity. Female directors have acquired high levels of education, such as master’s and other postgraduate degrees and, therefore, are considered highly professional and experienced (Solimene et al., 2017) in making important decisions on the boards. Solimene et al (2017) state that women's boards of directors have a significant influence on company performance, caused by the level of education, experience, and quality they have continually

increased. In addition, women also have unique traits; experiences, skills, and knowledge that help provide access to other resources.

In the same vein, several attempts (Redondo et al., 2008; Campbell and Mínguez-Vera, 2008) have been made to show that women on the board directors have a high responsibility in the decision making process, which increases firm performance. In this context, these studies outline the critical role of agency theory in explaining how female directors improve performance sustainability.

### **Resource dependence theory**

The resource dependency viewpoint, suggests that firms depend on external resources from stakeholders and legitimacy is essential to maintain their support (Salancik and Pfeffer, 1978). Gender plays a major role in the corporate decision-making process (Lee and James, 2007). Resource dependency theory (Salancik and Pfeffer, 1978) is based on the view that in order to survive, firms usually depend on external units through which they can exchange and acquire certain resources and, from a corporate governance perspective, firms seek to structure membership of the corporate board on this basis (Terjesen et al. 2009). As discussed above, resource dependency theory (Salancik and Pfeffer, 1978) suggests that firms depend on external units for resources (Terjesen et al. 2009) and that increased resource diversity in the boardroom helps the corporation in understanding and responding to its environment (Bear et al., 2010). In this sense, the diverse board has the potential to enhance board effectiveness, as there will be more pooled resources, and thereby influence performance, in this case, sustainability performance.

## **HYPOTHESIS DEVELOPMENT**

### **Board gender diversity and sustainability performance**

There is a large volume of published studies describing the role of women on the board in improving transparency and ethics compliance of companies. Traditionally, Carter et al. (2003) argue that in group settings, such as boards of directors, diversity results in a greater variety of ideas, perspectives, knowledge, creativity and innovation, and therefore becomes a competitive advantage.

Manita et al. (2018) found that women also have a higher sense of concern for the common welfare and are more stakeholder-oriented. In fact, Al-Shaer and Zaman (2016) show that women can increase stakeholder trust better than men who are more shareholder-oriented. In leadership, women usually have a more honest and responsive attitude Oyenike et al., (2016). In the same area, corporate sustainability is influenced by environmental and social aspects. The presence of women on the board of directors gives more attention to environmental and social problems in the company. As women are more socially oriented than men, Huse et al., (2009) have a tendency to broaden the discussions, sometimes due to

their questioning attitude, on performance sustainability and CSR control issues. They argued that women board members may contribute to board effectiveness and may have particular contributions to corporate social responsibility controls and strategic controls. In this context, Kassinis et al. (2015) investigate the relationship between gender and environmental sustainability. They find that both 'demographic' and 'structural' gender diversity are significant predictors of a firm's environmental sustainability initiative. Similarly, AL-Shaer and Zaman (2016) find that gender diverse boards are associated with higher quality sustainability reports and independent female directors have a greater effect on sustainability reporting quality than female directors. Recently, Francoeur et al., (2017) find that board gender diversity positively related to corporate social responsibility dimensions that related to less powerful stakeholders such as the environment, contractors, and the community. Cruz et al. (2018) show that increases in corporate social performance associated with the presence of women on the boards of family firms. Bravo (2018) found a positive association between gender diversity and sustainability policies. Yasser et al. (2017) suggest that female directors can play a strategic role in enabling firms to ethically manage their social responsibilities and sustainable practices have important policy implications for regulators and stakeholders. Previous research has shown that having female members on the board of directors has positively influenced corporate sustainability performance (Emmanuel et al., 2018; Margaretha and Isnaini, 2014). They found that the policy debate was informed by providing empirical evidence supporting a board diversity case for corporate sustainability performance. A broader perspective has been adopted by Martinez et al (2019) who argue that the female presence in management positions is positively linked to a voluntary disclosure of CSR reports and the inclusion in a sustainability index, which supports gender legislation. Recently, Garcia et al (2021) have confirmed the positive effects of gender diversity on R&D. In this case, this positive influence is lower if female directors have family links with male members on the board.

Provasi and Harasheh (2021) find that female involvement on both boards has almost no significant effect on financial performance; however, a significant association was found with corporate sustainability performance. Orazalin and Baydauletov (2020) suggest that firms with more effective CSR strategies exhibit better environmental and social performance. The results also show that board gender diversity is positively associated with environmental and social performance, thus supporting the notion that board gender diversity promotes sustainable development. Zahid et al. (2020) indicate that women directors have an imperative role in improving corporate sustainability disclosures as evidenced by their significant positive association with workplace and social, environmental, and economic dimensions of corporate sustainability. In addition, it is noted that the association between boardroom gender diversity and corporate sustainability disclosures has been pronounced after the enactment of the code. Overall, there seems to be some evidence

to indicate that board gender diversity is positively associated with sustainability performance.

*Hypothesis 1: Board gender diversity positively affects sustainability performance.*

### **The impact of top executive gender on the relationship between board gender diversity and sustainability performance**

A cluster of clues suggests that a significant feminization of boards could improve the transparency and ethics compliance of companies. In this context, we propose an explanation of the impact of top executive gender on the relationship between board gender diversity and sustainability performance. In fact, Govindji and Linley (2007) found that women typically exhibit ethical character traits, such as interpersonal strengths and score better on fairness issues (Peterson and Seligman, 2003) empathy and integrity (Chun et al., 2005). For this reason, women demonstrate greater moral and more ethical sensitivities than males, and then we expect the top female executives to be associated with intrinsically greater interest alignment with shareholders in terms of debt maturity choice. In fact, Adhikari et al., (2019) found that firms where women have more power in the top management team, measured by female executives' plurality and pay slice, face fewer operations-related lawsuits. However, the authors suggest that firms where women executives have more power avoid lawsuits partly by avoiding some risky but value-increasing firm policies, such as more aggressive R&D, intensive advertising, and policies inimical to other parties. Furlotti et al (2019) showed that a positive association between the presence of women in the role of chairperson and the corporate social responsibility disclosure.

As such, women directors may be more likely to be proactive in addressing environmental concerns than male directors. Further, research demonstrates that women have an attachment to and wish to protect the environment more largely than men (Bord and O'Connor, 1997; Diamantopoulos et al., 2003). Taken together, this evidence suggests that women board members will be more likely than men board members to view the protection of the environment as ethical and necessary, despite the costs of doing so. Flabbi et al (2019) document that companies with female board members have a higher probability of appointing female executives. Overall, there seems to be some evidence to indicate that, the presence of female executives is expected to have an impact on the association between board gender diversity and sustainability performance. Recent work by Li and Zhang et al (2018) investigates whether there are systematic differences in the choice of debt maturing in the presence of female directors. Accordingly, we state the following hypothesis:

*H2: Top executive gender accentuated the relation between the board gender diversity and sustainability performance.*

## METHODOLOGY

### Sample selection

Our sample comprises 100 companies based on market capitalization listed on the Main Board of Bursa Malaysia. Furthermore, the study excludes the financial companies due to the different regulations adopted by these companies compared to other sectors. The exclusion of financial firms is justified by the fact that they are governed by a special legislation in the preparation of their financial statements and by specific sector accounting standards. Therefore, 78 companies have been studied during the period 2010–2019. Thus, the total number of firm-year observations is 780. Our database has been collected from the DataStream database. This study is done according to the quantitative data analysis.

**Table 1. Sample selection**

Sample	Number of firms
Initial sample	100
Financial firms	16
Missing firms	6
Final sample	78
Duration of study	2010/2019
Total observations	780

### Measurement of variables

#### *Dependent variable: sustainability performance*

In this study, we constructed an aggregated SP index using the annual environmental, social and economic scores obtained from Thomson Reuters-ASSET 4. We measured sustainability performance by three dimensions (economic, social, and environmental) from each sustainability report as recommended by the GRI and Bursa Malaysia. According to Singh et al., (2012), this procedure needs to be based on both theoretical and empirical analyses (Al- Tuwaijri et al., 2004; Freedman and Jaggi, 2005; Janggu et al. 2014). Thus, in accordance with the instrumental stakeholder theory, the sustainability measurement was divided into primary stakeholder groups (Clarkson, 1995), i.e. (1) Corporate Governance (CG), (2) Employees and Suppliers (ES), (3) Customers and Society (CS), and (4) the Environment (E). This stakeholder approach is supported by previous research, like that of Othman and Ameer (2014) who separated sustainability performance indices into community, diversity, environment, and ethical standards. We defined social sustainability performance by constructing the respective score using strengths and concerns under the



areas of community, diversity, human rights, and employee relations. To compute the sustainability performance score for each category, we used the number of strengths minus the number of concerns. All the estimations in this study were carried out using the STATA program. For example, the sustainability-rating index ASSET4 provides a detailed list of indicators used in its assessment (Thomson Reuters ASSET4, 2018) and was, therefore, used as input for our index.

*Independent variables*

- **Board gender diversity:** Board gender diversity was measured by calculating the percentage of female directors serving on a company’s board, as in Adams and Ferreira (2009) and Campbell and Mínguez-Vera (2008). For this variable, data were derived from the DataStream database.
- (1) **Women executives:** Different authors have measured women executives in a variety of ways (Adams and Ferreira, 2009; Kesner 1988; Bilimoria and Piderit 1994; Daily et al. 1999; Farrell et al.,2001). In this study, we measure women executives by the percentage of women in the top management team (Adhikari et al., 2019; Denizci Guillet et al., 2019; Stainback et al., 2016). This variable draws on the critical mass theory developed by Granovetter (1978) and empirical evidence on it like Torchia et al. (2011), which suggests that the ability to form alliances and coalitions should give women more power to pursue their preferences

**Table 2. Variables measurement**

Variables	Measure	Authors
Sustainability performance (SP)	SP index using the annual environmental, social and economic scores obtained from Thomson Reuters-ASSET 4	Al-Tuwaijri et al., (2004); Freedman and Jaggi, (2005); Jangu et al. (2014), Clarkson, (1995)
Board gender diversity (BGD)	Is the percentage of women in the board	Adams and Ferreira (2009) ; Campbell and Mínguez-Vera (2008)
Women executive (WE)	calculating the percentage of female directors serving on a company’s boards	Adhikari et al (2019); Denizci Guillet et al (2019) ; Stainback et al., (2016) ; Farrell et al.(2001); Tahir, et al. (2020); AL-ABSY et al., (2020);
Firm size (Size)	Is calculated as a natural logarithm of total assets	Lanis and Richardson (2012); Gupta and Newberry (1997)
Leverage (LEV)	is calculated as the ratio of total debt to total assets	Gupta and Newberry, (1997)
Return on assets (ROA)	is measured as pre-tax income divided by total asset	Mafrolla and D’Amico (2016); Watson (2015)

### Models and estimation method

To test our hypothesis, we estimate this model as described below.

$$SP_{it} = \beta_1 BGD_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + Year\ fixed\ effects_{it} + Firm\ fixed\ effects_{it} + \varepsilon_{it} \quad (1)$$

Equation (1) allows the estimation of the main effects of BGD. According to hypothesis 1 we expect that  $\beta_1$  is positive in model (1). To examine the proposed hypothesis, that the impact of BGD on corporate sustainability performance is more important in firms with a higher percentage of females on the top management team. We estimate the equation, which includes woman executive and we expect that  $\beta_3$  (WE\*BGD) is positive in the model (2). According to hypothesis 2, we estimate the model (2) as described below

$$SP_{it} = \beta_0 + \beta_1 BGD_{it} + \beta_2 WE_{it} + \beta_3 BGD_{it} * WE_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + Year\ fixed\ effects_{it} + Firm\ fixed\ effects_{it} + \varepsilon_{it} \quad (2)$$

We include year fixed effects in our models because these variables help to control for variables that are constant across entities, but vary over time can be done by including time fixed effects. This model eliminates omitted variable bias caused by excluding unobserved variables that evolve over time but are constant across entities. In some applications, it is meaningful to include both entity and time fixed effects. The combined model allows eliminating bias from unobservable, that change over time, but are constant over entities and it controls for factors that differ across entities but are constant over time.

Using the F-test, Breusch-Pagan test and Hausman-test, we test the validity of the fixed effects estimator. The result shows that the Hausman test rejects the random effects estimator and thus fixed effect models are preferred in the paper. Then, residual test for normality, autocorrelation and homoscedasticity to ensure that the robustness of the errors is independent, identically and normally distributed for the fixed effects model.

The study uses ordinary least squares regression (OLS) with Stata 13 to investigate the moderating effect of top executive gender on the relation between board gender diversity and corporate sustainability performance.

### Empirical results

#### *Descriptive statistics*

Table 3 shows the descriptive statistics for the regression variables. The panel presents descriptive statistics for the entire sample, including the mean, minimum, median, maximum and standard deviation.

**Table 3. Summary of statistics of the sample**

Variable	Mean	Min	Median	Max	SD
<b>SP</b>	0.302	0.062	0.295	0.723	0.122
<b>WE</b>	18.216	0	17.4	52.21	12.789
<b>BGD</b>	23.55	0	20.67	57.9	11.324
<b>SIZE</b>	6.945	4.899	6.114	8.158	0.654
<b>LEV</b>	0.253	0	0.233	0.660	0.155
<b>ROA</b>	0.106	-1.225	0.101	1.054	0.119

Notes: SP: The total score of the SP index has been computed based on environmental, social and economic items; BGD: board gender diversity: the percentage of female directors serving on a company's board; WE: the percentage of women in the top management team, SIZE: is calculated as a natural logarithm of total assets; LEV: is calculated as the ratio of total debt to total assets, ROA: is measured as pre-tax income divided by total asset.

This table provides the descriptive statistics for the SP of publicly listed firms in Malaysia. Of the 100 firms, the lowest score is 0.062 while the maximum is 0.723. These results show that there is wide variation in sustainability performance amongst publicly listed Malaysian firms. Regarding the previous study, sustainability performance is a significant evolution. In this area, Abraham et al (2013) observe many organizations that have increased levels of sustainability performance. This indicates that the quality of sustainability reporting is still low, although there is an improvement. The result is consistent with prior findings in the Malaysian context (Amran et al., 2014). Thus, these findings suggest that although on average the sustainability performance remained low, it had increased after the introduction of MCCG (2012).

The variable women executives WE have a mean of 18.216. This result indicates that 18.216 presents the top gender executives in our sample. Hence, the participation of women in a top management team of Malaysian listed firms is considered low. This representation is lower than the Scandinavian countries. However, closer to Malaysia, in Indonesia, Darmadi (2013) showed that the mean of their 2007 sample is 12 per cent.

As can be seen from Table 4, the mean percentage of BGD is 23.55 percent and the standard deviation is 11.324. This is slightly higher than the study of Katmon et al (2019). Furthermore, its maximum value is 57.9 percent. This clearly points out that the peak level of female directors' representation on the board makes up approximately a third of board directors' members. According to the Blau Index (Blau, 1977), the range of minimum to maximum is 0.00 to 0.50 for the gender diversity of a firm. The result of this study indicates that gender diversity is low among firms in Malaysia.

### Correlation Heteroscedasticity analysis

Table 4 reports the correlations among the variables. As a rule of thumb, a correlation of 0.70 or higher in absolute value may indicate a multicollinearity issue (Liu et al., 2014). The results show that the highest correlation coefficient of 0.322 appears between SP and SIZE. However, since these two variables are used alternately in the specifications as dependent

variables, their high correlation is not an issue. Multicollinearity was also checked by calculating the variance inflation factors (VIF). The highest observed VIF value in the study variables is 1.98, which is well below the conventional cutoff of 10.0 (Chatterjee and Hadi, 2012). In addition, the VIF factors (variance inflation factor) are weak ( $\leq 1.98$ ). We can confirm the absence of multicollinearity between variables of our model (Chatterjee and Hadi, 2012).

**Table 4. Pearson correlations for independent variables**

	SP	WE	BGD	SIZE	ROA	LEV	VIF
<b>SP</b>	1.000						1.26
<b>WE</b>	0.125**	1.000					1.98
<b>BGD</b>	0.141**	0.145	1.000				1.32
<b>SIZE</b>	0.322***	0.115**	0.214*	1.000	1.000		1.66
<b>LEV</b>	0.622	0.025**	0.052**	0.042	0.521	1.000	1.87
<b>ROA</b>	0.147**	0.047	0.641***	0.152	0.044**	1.000	1.54

Notes: SP: The total score of the SP index has been computed based on environmental, social and economic items; BGD: board gender diversity: the percentage of female directors serving on a company's board; WE: the percentage of women in the top management team, SIZE: is calculated as a natural logarithm of total assets; LEV: is calculated as the ratio of total debt to total assets, ROA: is measured as pre-tax income divided by total asset

This study used the Hausman (1978) test to determine which estimation model, whether the fixed or random effects one, best explains our empirical results. The results of the Hausman specification test indicate that the fixed effects model is better than the random-effects model. As presented in Table 5, the Fisher test proves to be significant at the 1 per cent threshold for both models, confirming the individual fixed effects. To test the heteroscedasticity in our empirical models, the Breusch-Pagan test is conducted. Breusch-Pagan results show that a probability is lower than 1 per cent for the two models, attesting that the models are heteroscedastic. Given this error structure, our regressions will be estimated by the Generalized Least Squares method that is most suitable for panel data and has more advantages (Wooldridge, 2002). As the most important statistical tests have been performed, we will interpret the results obtained from the estimation of our empirical models.

### Regression results

Table 5 presents the results of estimating equation (1) to test our H1. With respect to model (1), table 5 shows that BGD affects positively and significantly ( $\beta_1 = 0.311$ ,  $Z = 9.17$ ) the sustainability performance. This result indicates that firms with the presence of women on the board are associated with higher engagement SP. This finding supports previous studies

which link BGD and SP ( Kassinis et al., 2016; Francoeur et al., 2017; Yasser et al., 2017). Kang et al., (2007) argue that diversity has become one of the most important variables of study in board of director research. In fact, as women tend to have more ethical behaviours and demand a higher level of sustainability (Issa and Fang, 2019), we found that a higher proportion of female directors increase the likelihood of organizations addressing sustainability performance and adopting external assurance. According to the agency theory, the characteristics of the board can affect the decision of a company to engage in sustainability reporting (Jizi, 2017).

**Table 5. Results of regression analysis**

	SP	
	Model 1	Model 2
<b>Constant</b>	0.151(7.12)***	0.114(4.38)**
<b>BGD</b>	0.311(9.17)***	0.256 (8.15)***
<b>WE</b>		0.147(7.44)***
<b>BGD*WE</b>		0.122(14.02)***
<b>SIZE</b>	0.057 (2.01)**	0.127
<b>LEV</b>	0.114 (5.25)***	0.256(2.02)**
<b>ROA</b>	0.114	0.324(2.03)**
<b>Firm fixed effects</b>	Yes	Yes
<b>Year fixed effects</b>	Yes	Yes
<b>R2</b>	0.5721	0.5823
<b>R2 adjusted</b>	0,5811	0,5942
<b>fixed effect</b>	12.66 (0.000)***	20.51(0.000)***
<b>Sepecification test</b>	28.24(0.000)***	20.52 (0.000)***
<b>Autocorrelation test</b>	18.33 (0.000)***	28.66 (0.000)***
<b>BreushPaga test:</b>	22.20 (0.000)***	18.10 (0.000)***
<b>Heteroscedastic test</b>		

Notes: SP: The total score of the SP index has been computed based on environmental, social and economic items; BGD: board gender diversity: the percentage of female directors serving on a company's board; WE: the percentage of women in the top management team, SIZE: is calculated as a natural logarithm of total assets; LEV: is calculated as the ratio of total debt to total assets, ROA: is measured as pre-tax income divided by total asset.

Galbreath (2011) explains that the presence of women on boards provides new insights, new information and new perspectives, which help in taking better decisions. Women on boards are expected to engage in and build better relations with stakeholders because of their greater focus on the needs of others, positioning firms not only to understand the social demands of their constituent base, but also to avoid costly missteps with strategic decisions regarding sustainability (Hisrich and Brush 1984; Rosener, 1997). Our findings confirm previous studies on board gender diversity according to which a greater female representation on board increases the adoption of new sustainability reporting practices (Seto-Pamies, 2015; Arayssi et al., 2016). Table 5 document the relations among board

gender diversity, woman executive and sustainability performance. The statistically significant coefficient estimate on SP indicates that BGD is positively associated with SP in firms with higher woman executive level. In firms with the presence of female executives, the effect of BGD is more pronounced yet still significantly positive in a test of the sum of the coefficient estimates on SP and BGD\*WE (sum of coefficient estimates =0.122; p-value = 14.02).

According to Al-Shaer and Zaman (2016), our results indicate that a higher percentage of women directors is positive and statistically significant related to the organizations' decision to adopt external assurance of their sustainability performance. There are several possible explanations for this result. Females in top management may be more likely to be proactive in addressing environmental concerns than male directors. Female executive have more power to avoid lawsuits partly by avoiding some risky but value- increasing firm policies, such as more aggressive R&D, intensive advertising, and policies inimical to other parties (Adhikari et al., 2019). Indeed, these ethical practices make women more sensitive to SP and environmental issues (Nielsen and Huse 2010). Another possible explanation for this is that the presence of female directors as not only a social measure or tokenism, but also as a contribution to good governance practice (Garcia et al., 2018).

In fact, we confirm that Malaysian companies improved the female representation in their governance bodies have enjoyed an upgrade in their ethical rating, this implies that the improvement in gender representations is fast discounted in the company's ethical rating perceived by the market. In addition, besides the absolute association between gender diversity of governance bodies and sustainability rating.

To further support our study, we explored the impact of the three dimensions of sustainability performance individually: the environment, the social and the economic dimensions. The environmental dimension reflects the aspects of material, energy, water, biodiversity, emission and waste, products and services, compliance with environmental regulations, transportation of products, and overall environmental protection measures taken by a firm. The social dimension includes human rights, society, diversity and opportunity, and product responsibility aspects. The economic dimension reflects a company's capacity, namely the direct economic value generated, market presence, and indirect economic impacts through its use of best management practices. Table 6 reports the estimated results from the regression model for each one. Models (3) -(4) - (5) present the impacts of gender diversity on the environment, the social and the economic dimensions. In models (6) -(7) - (8), we considered the moderation effect of top executives' gender on the relationship between gender diversity and the three dimensions. We found insignificant effects on the environmental dimension and significant effects on the economic and social dimension. A plausible explanation is that high presence of women in the companies is a social dimension type of SP (Jarboui et al., 2020). This confirms the result of Clarkson

(1995), Mouakhar et al. (2020), Orazalin and Baydauletov (2020), and Jarboui et al. (2020) who argued that female board members are expected to influence the social dimension of SP.

**Table 6. Additional test**

	SP ENV	SP SOC	SP ECO
	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
<i>Constant</i>	0.143(5.33)**	0.233(4.22)***	0.514(3.88)***
<i>BGD</i>	0.321	0.621(11.44)***	0.531(2.04)**
<i>WE</i>	0.142	0.871(5.21)***	0.678(2.01)**
<i>SIZE</i>	0.241(2.02)**	0.521	0.421
<i>LEV</i>	0.452(6.33)***	0.641(5.99)***	0.687
<i>ROA</i>	0.214	0.741(2.04)**	0.324(2.05)**
<i>Firm fixed effects</i>	Yes	Yes	Yes
<i>Year fixed effects</i>	Yes	Yes	Yes
<i>R2</i>	0.5321	0.4213	0.6421
<i>R2 adjusted</i>	0,5411	0,5123	0,5346
	SP ENV	SP SOC	SP ECO
	<i>Model 6</i>	<i>Model 7</i>	<i>Model 8</i>
<i>Constant</i>	0.122(7.83)**	0.242(4.67)***	0.552(3.52)***
<i>BGD</i>	0.578	0.547(11.66)***	0.475(2.02)**
<i>WE</i>	0.187	0.645(5.77)***	0.366(2.05)**
<i>BGD*WE</i>	0.235	0.422(2.03)**	0.621(9.85)***
<i>SIZE</i>	0.431(2.03)**	0.578	0.458
<i>LEV</i>	0.159(5.22)***	0.652(5.88)***	0.264
<i>ROA</i>	0.275	0.799(2.05)**	0.351(2.03)**
<i>Firm fixed effects</i>	Yes	Yes	Yes
<i>Year fixed effects</i>	Yes	Yes	Yes
<i>R2</i>	0.4111	0.5524	0.5947
<i>R2 adjusted</i>	0,5120	0.5621	0,6210

Because of their relational abilities, women on boards are more likely able to satisfy the needs of their broader groups of stakeholders (Adams et al., 2015; Salhi et al., 2019). Firms with more female board directors enjoy more favorable social reputations (Endrikat et al., 2021; Velte, 2019; Gao et al., 2020) and take better decisions (Yarram and Adapa, 2021; Orazalin, 2020).

### Robustness test

To check the robustness of our main results, we verify whether the moderating role of women executives on the relationship between the SP and board gender diversity remains

intact, if we replace the measurement of women directors such as the percentage of women in the board with dummy variables equals 1 if exist a woman on the board and 0 otherwise. We re-estimate regressions (1) and (2) in Malaysian firms. Table 7 shows that the results are similar to those previously reported, as displayed in Table 5.

**Table 7. Robustness test**

	SP	
	<i>Model 1</i>	<i>Model 2</i>
<i>Constant</i>	0.185(10.17) <sup>***</sup>	0.152(8.28) <sup>***</sup>
<i>BGD</i>	0.552(5.36) <sup>***</sup>	0.275 (9.33) <sup>***</sup>
<i>WE</i>		0.188(5.44) <sup>***</sup>
<i>BGD*WE</i>		0.196(16.12) <sup>***</sup>
<i>SIZE</i>	0.158 (2.05) <sup>**</sup>	0.166
<i>LEV</i>	0.182 (5.87) <sup>***</sup>	0.247(8.55) <sup>***</sup>
<i>ROA</i>	0.258	0.742(2.05) <sup>**</sup>
<i>Firm fixed effects</i>	Yes	Yes
<i>Year fixed effects</i>	yes	Yes
<i>R2</i>	0.5158	0.5332
<i>R2 adjusted</i>	0,5254	0,5422

Notes: SP: The total score of the SP index has been computed based on environmental, social and economic items; BGD: board gender diversity: the percentage of female directors serving on a company's board; WE: the percentage of women in the top management team, SIZE: is calculated as a natural logarithm of total assets; LEV: is calculated as the ratio of total debt to total assets, ROA: is measured as pre-tax income divided by total asset.

## CONCLUSION

The present paper addresses, through an empirical approach, the moderating effect of female executive on the relationship between board gender diversity and sustainability performance. A female executive can have a significant impact on the presence of females on the board by way of the design of an appropriate compensation system linked to performance, which orients their decision-making towards maximizing the engagement of sustainability performance. Using a panel data methodology for the 100 MALAYSIAN companies during the period 2010– 2019, we find a positive and significant influence in the relation among gender diversity on the board, effectiveness of monitoring, and pay-for performance. The results show a positive and highly significant effect of the presence of women on the board on the sustainability performance. Our findings also point out the positive moderating effect of woman executive. These results are in accordance with agency theory that recommends the existence of more women on boards. In fact, the gender diversity allows board members to mobilize various cognitive frameworks, and these, due to their variety, allow the interest of several stakeholders to be considered, enhancing, therefore, the sustainability performance (Alazzani et al., 2017; Amorelli and García-Sánchez, 2021).



The additional tests showed that precisely it is the social and economic dimension have a relation with gender diversity. In addition, women are more communicative and cooperative, they take greater account of the needs of stakeholders (Chen et al., 2016) and they are more sensitive about society, environment and ethics (Yang et al., 2019; Velte, 2019). In fact, competent female directors bring in social capital resources and advice to management on strategic actions (Handayani and Panjaitan, 2019; Yaseen et al., 2019). They provide various ideas, skills, and perspectives to corporate board decision-making. They also can benefit companies through decision making and policies, including sustainability practices (Liu et al., 2020; Ardito, 2023). The present study makes several theoretical and practical implications. Firstly, our finding helps entrepreneurs, investors, and the community to explain a direct relationship between the responsibility for the corporate decision-making process and the corporate governance practices such as women directors, as well as for a firm's transparency. Therefore, the position of a woman in the firm could allow a firm to improve social and environmental practices in the firms. This allows a company to take a multi-stakeholder approach to developing corporate relationships with internal and external stakeholders. In fact, internal stakeholders are interested to know financial strategies. taxation adopted such as tax avoidance. Secondly, our findings suggest that the incorporation of women in firm's decision-making process leads firm to plan ethical strategy, taking into account the interests of several groups of stakeholders. For this reason, policymakers and governments of the major countries have to advance the integration of women in corporate decision-making. Also, this study has useful theoretical implications. First, it extends the extant literature on gender diversity and sustainability performance by contributing to a better understanding of how gender diversity and top executives' gender can affect sustainability performance in Malaysian firms. Second, this study extends the dynamic links between gender diversity and sustainability performance.

Finally, important limitations that need to be considered is the few control variables in the empirical models. In addition, this study used a sample of non-financial listed companies. It may not be representative of the population of Malaysian firms. Our results may not be generalizable to smaller companies and at different time. In addition, the lack of systematic CSR measurement for other groups of companies imposes certain limitations on the generalizability of the findings. Thus, future research could extend the population of this study by taking into account all the Malaysian listed firms, including the financial companies and make comparisons across sector results. Furthermore, results are representative only of listed firms. Future studies could examine the impact of political connections on the relationship between sustainability performance and gender diversity.

## REFERENCES

- Abraham, C., M. C. Boudreau, I. Junglas, and R. Watson. 2013. Enriching our theoretical repertoire: The role of evolutionary psychology in technology acceptance. *European Journal of Information Systems* 22 (1): 56-75.
- Adams, R. B. and D. Ferreira. 2009. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics* 94(2): 291-309.
- Adams, R. B., J. De Haan, S. Terjesen, and H. Van Ees. 2015. Board diversity: Moving the field forward. *Corporate Governance-An International Review* 23 (2): 77-82.
- Adhikari, B. K., A. Agrawal, and J. Malm. 2019. Do women managers keep firms out of trouble? Evidence from corporate litigation and policies. *Journal of Accounting and Economics* 67 (1): 202-225.
- Ahmad, N. B. J., A. Rashid, and J.Gow. 2018. Corporate board gender diversity and corporate social responsibility reporting in Malaysia. *Gender, Technology and Development* 22 (2): 87- 108.
- Alazzani, A., A. Hassanein, and Y. Aljanadi. 2017. Impact of gender diversity on social and environmental performance: evidence from Malaysia. *Corporate Governance: The International Journal of Business in Society* 17 (2): 266-283.
- Allam, Z. and P. Newman. 2018. Redefining the smart city: Culture, metabolism and governance. *Smart Cities* 1 (1): 4-25.
- Al-Shaer, H. and M. Zaman. 2016. Board gender diversity and sustainability reporting quality. *Journal of Contemporary Accounting & Economics* 12 (3): 210-222.
- Al-Tuwaijri, S. A., T. E. Christensen, K. E. Hughes II. 2004. The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach. *Accounting, organizations and society* 29 (5-6): 447-471.
- Amorelli, M. F. and I. M. García-Sánchez. 2021. Trends in the dynamic evolution of board gender diversity and corporate social responsibility. *Corporate Social Responsibility and Environmental Management* 28 (2): 537-554.
- Amran, A., S. P. Lee, and S. S. Devi. 2014. The influence of governance structure and strategic corporate social responsibility toward sustainability reporting quality. *Business Strategy and the environment* 23 (4): 217-235.
- Anderson, J. C., D. J. Lowe, and P. M. Reckers. 1993. Evaluation of auditor decisions: Hindsight bias effects and the expectation gap. *Journal of Economic Psychology* 14 (4): 711-737.
- Arayssi, M., M. Dah, and M. Jizi. 2016. Women on boards, sustainability reporting and firm performance. *Sustainability Accounting, Management and Policy Journal* 7 (3): 376-401.
- Ardito, L. 2023. The influence of firm digitalization on sustainable innovation performance and the moderating role of corporate sustainability practices: An empirical investigation. *Business Strategy and the Environment* 32 (8): 5252-5272.

- Bauer, T., T. Kourouxous, and P. Krenn. 2018. Taxation and agency conflicts between firm owners and managers: a review. *Business Research* 11 (1): 33-76.
- Bear, S., N. Rahman, and C. Post. 2010. The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics* 97 (2): 207-221.
- Bilimoria, D. and S. K. Piderit. 1994. Board committee membership: Effects of sex-based bias. *Academy of management journal* 37 (6): 1453-1477.
- Bird, B. and C. Brush. 2002. A gendered perspective on organizational creation. *Entrepreneurship Theory and Practice* 26 (3): 41-65.
- Blau, P. M. 1977. Inequality and heterogeneity: A primitive theory of social structure (Vol. 7). New York: Free Press.
- Bord, R. J. and R. E. O'Connor. 1997. The gender gap in environmental attitudes: The case of perceived vulnerability to risk. *Social Science Quarterly*: 830-840.
- Bravo, F. 2018. Does board diversity matter in the disclosure process? An analysis of the association between diversity and the disclosure of information on risks. *International Journal of Disclosure and Governance* 15: 104-114.
- Campbell, K., and A. Mínguez-Vera. 2008. Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics* 83 (3): 435-451.
- Carter, T. C., M. A. Menzel, S. F. Owen, J. W. Edwards, J. M. Menzel, and W. M. Ford. 2003. Food habits of seven species of bats in the Allegheny Plateau and Ridge and Valley of West Virginia. *Northeastern Naturalist* 10 (1): 83-89.
- Chen, G., C. Crossland, and S. Huang. 2016. Female board representation and corporate acquisition intensity. *Strategic Management Journal* 37 (2): 303-313.
- Chun, R., R. Da Silva, G. Davies, and S. Roper. 2005. *Corporate reputation and competitiveness*. Routledge.
- Clarkson, M. E. 1995. A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review* 20 (1): 92-117.
- Cruz, A. R., S. T. Selby, and W. H. Durham. 2018. Place-based education for environmental behavior: A 'funds of knowledge' and social capital approach. *Environmental Education Research* 24 (5): 627-647.
- Daily, C. M., S. T. Certo, and D. R. Dalton. 1999. Entrepreneurial ventures as an avenue to the top?: Assessing the advancement of female CEOs and directors in the Inc. 100. *Journal of Developmental Entrepreneurship* 4 (1): 19.
- Darmadi, S. 2013. Do women in top management affect firm performance? Evidence from Indonesia. *Corporate Governance: The International Journal of Business in Society* 13 (3): 288-304.
- Denizci Guillet, B., A. Pavesi, C. Hsu, and K. Weber. 2019. What can educators do to better prepare women for leadership positions in the hospitality industry? The

- perspectives of women executives in Hong Kong. *Journal of Hospitality & Tourism Education* 31 (4): 197-209.
- Dhaliwal, D. S., O. Z. Li, A. Tsang, and Y. G. Yang. 2011. Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review* 86 (1): 59-100.
- Diamantopoulos, A., B. B. Schlegelmilch, R. R. Sinkovics, and G. M. Bohlen. 2003. Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. *Journal of Business Research* 56 (6): 465-480.
- Dumay, J., J. Guthrie, and F. Farneti. 2010. GRI sustainability reporting guidelines for public and third sector organizations: A critical review. *Public Management Review* 12 (4): 531-548
- Eagly, A. H., Eagly, L. L. C. A. H., Carli, L. L., and Carli, L. L. 2007. Through the labyrinth: The truth about how women become leaders. *Harvard Business Press*.
- Egbu, C. O., S. Hari, and S. H. Renukappa. 2005. Knowledge management for sustainable competitiveness in small and medium surveying practices. *Structural survey* 23 (1): 7-21
- Emmanuel, A. Y., C. S. Jerry, and D. A. Dzigbodi. 2018. Review of environmental and health impacts of mining in Ghana. *Journal of Health and Pollution* 8 (17): 43-52.
- Endrikat, S., D. Modesti, R. García-Mayoral, N. Hutchins, and D. Chung. 2021. Influence of riblet shapes on the occurrence of Kelvin–Helmholtz rollers. *Journal of Fluid Mechanics*: 913.
- Farrell, K. A., P. L. Hersch, and J. M. Netter. 2001. Executive compensation and executive contributions to corporate PACs. In *Advances in Financial Economics* (pp. 39-56). Emerald Group Publishing Limited.
- Flabbi, L., M. Macis, A. Moro, and F. Schivardi. 2019. Do female executives make a difference? The impact of female leadership on gender gaps and firm performance. *The Economic Journal* 129 (622): 2390-2423.
- Francoeur, C., A. Melis, S. Gaia, and S. Aresu. 2017. Green or greed? An alternative look at CEO compensation and corporate environmental commitment. *Journal of Business Ethics* 140 (3): 439-453.
- Francoeur, C., R. Labelle, and B. Sinclair-Desgagné. 2008. Gender diversity in corporate governance and top management. *Journal of Business Ethics* 81: 83-95.
- Freedman, M. and B. Jaggi. 2005. Global warming, commitment to the Kyoto protocol, and accounting disclosures by the largest global public firms from polluting industries. *The International Journal of Accounting* 40 (3): 215-232.
- Furlotti, K., T. Mazza, V. Tibiletti, and S. Triani. 2019. Women in top positions on boards of directors: Gender policies disclosed in Italian sustainability reporting. *Corporate Social Responsibility and Environmental Management* 26 (1): 57-70.

- Galbreath, J. 2011. Are there gender-related influences on corporate sustainability? A study of women on boards of directors. *Journal of Management & Organization* 17 (1): 17-38.
- Gao, W., S. Ping, and X. Liu. 2020. Gender differences in depression, anxiety, and stress among college students: a longitudinal study from China. *Journal of Affective Disorders* 263: 292-300.
- García-Izquierdo, A. L., C. Fernández-Méndez, and R. Arrondo-García. 2018. Gender diversity on boards of directors and remuneration committees: The influence on listed companies in Spain. *Frontiers in Psychology* 9.
- García-Meca, E., I. M. García-Sánchez, and J. Martínez-Ferrero. 2015. Board diversity and its effects on bank performance: An international analysis. *Journal of Banking & Finance* 53: 202-214.
- García-Sánchez, I. M., L. Rodríguez-Domínguez, and J. V. Frías-Aceituno. 2015. Board of directors and ethics codes in different corporate governance systems. *Journal of Business Ethics* 131: 681-698.
- Govindan, K., M. Shaw, and A. Majumdar. 2021. Social sustainability tensions in multi-tier supply chain: A systematic literature review towards conceptual framework development. *Journal of Cleaner Production* 279: 123075.
- Govindji, R. and P. A. Linley. 2007. Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review* 2 (2): 143-153.
- Granovetter, M. 1978. Threshold models of collective behavior. *American Journal of Sociology* 83 (6): 1420-1443.
- Guillet, B. D., A. Mattila, and L. Gao. 2019. The effects of choice set size and information filtering mechanisms on online hotel booking. *International Journal of Hospitality Management*: 102379.
- Gupta, S. and K. Newberry. 1997. Determinants of the variability in corporate effective tax rates: Evidence from longitudinal data. *Journal of Accounting and Public Policy* 16 (1): 1-34.
- Hadi, A. S. and S. Chatterjee. 2012. *Regression analysis by example*. John Wiley & Sons, Incorporated.
- Handayani, J. D. and Y. Panjaitan. 2019. Board gender diversity and its impact on firm value and financial risk. *MIX: Jurnal Ilmiah Manajemen* 9 (3): 293233.
- Hausman, J. A. 1978. Specification tests in econometrics. *Econometrica: Journal of the Econometric Society*: 1251-1271.
- Hisrich, R. and C. Brush. 1984. The woman entrepreneur: Management skills and business problems. *Journal of Small Business Management* 22 (1): 30-37.
- Huse, M. (Ed.). 2008. *The value creating board: Corporate governance and organizational behaviour*. Routledge.

- Huse, M., and A. Grethe Solberg. 2006. Gender-related boardroom dynamics: How Scandinavian women make and can make contributions on corporate boards. *Women in Management Review* 21 (2): 113-130.
- Huse, M., S. T. Nielsen, and I. M. Hagen. 2009. Women and employee-elected board members, and their contributions to board control tasks. *Journal of Business Ethics* 89: 581-597.
- Issa, A., and H. X. Fang. 2019. The impact of board gender diversity on corporate social responsibility in the Arab Gulf states. *Gender in Management: An International Journal* 34 (7): 577-605.
- Janggu, T., F. Darus, M. M. Zain, and Y. Sawani. 2014. Does good corporate governance lead to better sustainability reporting? An analysis using structural equation modeling. *Procedia- Social and Behavioral Sciences* 145: 138-145.
- Jarboui, A., M. Kachouri Ben Saad, and R. Riguen. 2020. Tax avoidance: do board gender diversity and sustainability performance make a difference? *Journal of Financial Crime* 27 (4): 1389-1408.
- Jensen, M. C. and W. H. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3 (4): 305-360.
- Jizi, M. 2017. The influence of board composition on sustainable development disclosure. *Business Strategy and the Environment* 26 (5): 640-655.
- Jo, H. and M. A. Harjoto. 2011. Corporate governance and firm value: The impact of corporate social responsibility. *Journal of Business Ethics* 103 (3): 351-383.
- Kang, H., M. Cheng, and S. J. Gray. 2007. Corporate governance and board composition: Diversity and independence of Australian boards. *Corporate Governance: An International Review* 15 (2): 194-207.
- Kassinis, G. I. and A. C. Soteriou. 2015. Environmental and quality practices: Using a video method to explore their relationship with customer satisfaction in the hotel industry. *Operations Management Research* 8 (3-4): 142-156.
- Kassinis, G., A. Panayiotou, A. Dimou, and G. Katsifaraki. 2016. Gender and environmental sustainability: A longitudinal analysis. *Corporate Social Responsibility and Environmental Management* 23 (6): 399-412.
- Katmon, N., Z. Z. Mohamad, N. M. Norwani, and O. Al Farooque. 2019. Comprehensive board diversity and quality of corporate social responsibility disclosure: evidence from an emerging market. *Journal of Business Ethics* 157 (2): 447-481.
- Kesner, I. F. 1988. Directors' characteristics and committee membership: An investigation of type, occupation, tenure, and gender. *Academy of Management journal* 31 (1): 66-84.
- Lanis, R. and G. Richardson. 2012. Corporate social responsibility and tax aggressiveness: An empirical analysis. *Journal of Accounting and Public Policy* 31 (1): 86-108.

- Lee, P. M. and E. H. James. 2007. She'-e-os: gender effects and investor reactions to the announcements of top executive appointments. *Strategic Management Journal* 28 (3): 227-241.
- Liu, Y., R. Nenutil, M. V. Appleyard, K. Murray, M. Boylan, A. M. Thompson, and P. J. Coates. 2014. Lack of correlation of stem cell markers in breast cancer stem cells. *British Journal of Cancer* 110 (8): 2063.
- Lo, S. F. and H. J. Sheu. 2007. Is corporate sustainability a value-increasing strategy for business? *Corporate Governance: An International Review* 15 (2): 345-358.
- Manita, R., M. G. Bruna, R. Dang, and L. H. Houanti. 2018. Board gender diversity and ESG disclosure: evidence from the USA. *Journal of Applied Accounting Research* 19 (2): 206-224.
- Margaretha, F. and R. Isnaini. 2014. Board diversity and gender composition on corporate social responsibility and firm reputation in Indonesia. *Jurnal Manajemen dan Kewirausahaan* 16 (1): 1-8.
- Melero, E. 2011. Are workplaces with many women in management run differently?. *Journal of Business Research* 64 (4): 385-393.
- Mouakhar, K., M. Kachouri, R. Riguen, and A. Jarboui. 2020. The effect of sustainability performance and CSR on corporate tax avoidance with board gender diversity as mediating variable. *Recherches en Sciences de Gestion* (3): 303-339.
- Nielsen, S. and M. Huse. 2010. The contribution of women on boards of directors: Going beyond the surface. *Corporate Governance: An International Review* 18 (2): 136-148.
- Orazalin, N. 2019. Corporate governance and corporate social responsibility (CSR) disclosure in an emerging economy: evidence from commercial banks of Kazakhstan. *Corporate Governance: The International Journal of Business in Society* 19 (3): 490-507.
- Orazalin, N. 2020. Board gender diversity, corporate governance, and earnings management: Evidence from an emerging market. *Gender in Management: An International Journal* 35 (1): 37-60.
- Orazalin, N. and M. Baydauletov. 2020. Corporate social responsibility strategy and corporate environmental and social performance: The moderating role of board gender diversity. *Corporate Social Responsibility and Environmental Management* 27 (4): 1664-1676.
- Othman, R. and R. Ameer. 2014. Institutionalization of risk management framework in Islamic NGOs for suppressing terrorism financing: Exploratory research. *Journal of Money Laundering Control* 17 (1): 96-109.
- Oyenike, O., E. Olayinka, and F. Emeni. 2016. Female directors and tax aggressiveness of listed banks in Nigeria. In *3rd International Conference on African Development Issues (CU-ICADI 2016)* (pp. 293-299).

- Peterson, C. and M. E. Seligman. 2003. Character strengths before and after September 11. *Psychological Science* 14 (4): 381-384.
- Provasi, R. and M. Harasheh. 2021. Gender diversity and corporate performance: Emphasis on sustainability performance. *Corporate Social Responsibility and Environmental Management* 28 (1): 127-137.
- Redondo-Cerezo, E., C. J. Gómez-Ruiz, N. Sánchez-Manjavacas, M. Viñuelas, C. Jimeno, G. Pérez-Vigara,, J. Morillas, J. Perez-Garcia, J. Garcia-Cano, and A. Pérez-Sola. 2008. Long-term follow-up of patients with small bowel angiodysplasia on capsule endoscopy. Determinants of a higher clinical impact and rebleeding rate. *REVISTA ESPAÑOLA DE ENFERMEDADES DIGESTIVAS* 100 (4): 202.
- Rosener, J. B. 1997. *America's competitive secret: Women managers*. Oxford University Press, USA.
- Salancik, G. R. and J. Pfeffer. 1978. A social information processing approach to job attitudes and task design. *Administrative Science Quarterly*: 224-253.
- Salhi, B., R. Riquen, M. Kachouri, and A. Jarboui. 2020. The mediating role of corporate social responsibility on the relationship between governance and tax avoidance: UK common law versus French civil law. *Social Responsibility Journal* 16 (8): 1149-1168.
- Setó-Pamies, D. 2015. The relationship between women directors and corporate social responsibility. *Corporate Social Responsibility and Environmental Management* 22 (6): 334-345.
- Shediac-Rizkallah, M. C. and L. R. Bone. 1998. Planning for the sustainability of community- based health programs: conceptual frameworks and future directions for research, practice and policy. *Health Education Research* 13 (1): 87-108.
- Singh, R. K., H. R. Murty, S. K. Gupta, and A. K. Dikshit. 2012. An overview of sustainability assessment methodologies. *Ecological Indicators* 15 (1): 281-299.
- Solimene, S., D. Coluccia, and S. Fontana. 2017. Gender diversity on corporate boards: an empirical investigation of Italian listed companies. *Palgrave Communications* 3 (1): 1-7.
- Stainback, K., S. Kleiner, and S. Skaggs. 2016. Women in power: Undoing or redoing the gendered organization? *Gender & Society* 30 (1): 109-135.
- Terjesen, S., R. Sealy, and V. Singh. 2009. Women directors on corporate boards: A review and research agenda. *Corporate Governance: An International Review* 17 (3): 320-337.
- Torchia, M., A. Calabrò, and M. Huse. 2011. Women directors on corporate boards: From tokenism to critical mass. *Journal of Business Ethics* 102 (2): 299-317.
- Valls Martinez, M. D. C., S. Cruz Rambaud, and I. M. Parra Oller. 2019. Gender policies on board of directors and sustainable development. *Corporate Social Responsibility and Environmental Management* 26 (6): 1539-1553.



- Velte, P. and J. Issa. 2019. The impact of key audit matter (KAM) disclosure in audit reports on stakeholders' reactions: a literature review. *Problems and Perspectives in Management* 17 (3): 323-341.
- Whitmarsh, L., O'Neill, S., and Lorenzoni, I. (2011). Climate change or social change? Debate within, amongst, and beyond disciplines. *Environment and Planning A*, 43(2), 258-261.
- Willis, A. 2003. The role of the global reporting initiative's sustainability reporting guidelines in the social screening of investments. *Journal of Business Ethics* 43 (3): 233-237.
- Wooldridge, J. M. 2002. Inverse probability weighted M-estimators for sample selection, attrition, and stratification. *Portuguese Economic Journal* 1 (2): 117-139.
- Yang, P., J. Riepe, K. Moser, K. Pull, and S. Terjesen. 2019. Women directors, firm performance, and firm risk: A causal perspective. *The Leadership Quarterly* 30 (5): 101297.
- Yarram, S. R. and S. Adapa. 2021. Board gender diversity and corporate social responsibility: Is there a case for critical mass? *Journal of Cleaner Production* 278: 123319.
- Yaseen, H., M. Iskandrani, A. Ajina, and A. Hamad. 2019. Investigating the relationship between board diversity & corporate social responsibility (CSR) performance: Evidence from France. *Academy of Accounting and Financial Studies Journal* 23 (4): 1-11.
- Yasser, Q. R., A. Al Mamun, and I. Ahmed. 2017. Corporate social responsibility and gender diversity: Insights from Asia Pacific. *Corporate Social Responsibility and Environmental Management* 24 (3): 210-221.
- Zahid, M., H. U. Rahman, W. Ali, M. Khan, M. Alharthi, M. I. Qureshi, and A. Jan. 2020. Boardroom gender diversity: Implications for corporate sustainability disclosures in Malaysia. *Journal of Cleaner Production* 244: 118683.
- Zhang, M., J. Zhang, F. Zhang, L. Zhang, and D. Feng. 2018. Prevalence of psychological distress and the effects of resilience and perceived social support among Chinese college students: Does gender make a difference?. *Psychiatry Research* 267: 409-413.