

The Impact of Board Characteristics on the Level of Voluntary Disclosure: Evidence from Palestinian Listed Companies



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Abstract The present research examines the nature and extent of voluntary disclosure (VD) among firms listed on the Palestine Exchange (PEX). Additionally, board characteristics' impact on the VD level is investigated. The study collected information from a representative sample of 45 annual reports of companies, which accounted for 93.7% of the total Palestinian-listed companies from 2013 to 2017. A disclosure index comprising 55 items of voluntary information was created and implemented to assess VD. Fixed effect multiple regression was employed to accomplish the study's objectives. According to the study's findings, the mean percentage of disclosed items in the disclosure index by a company is 56.31%. Moreover, a significant relationship exists between the size of the board and the extent of VD. On the contrary, a significant adverse relationship exists between the diversity of board gender and the extent of VD. Moreover, it was found that the level of VD was not affected by board independence. The research proposes that policymakers and regulators should promote the establishment of an official Palestinian VDI, which can be utilized to evaluate and compare voluntary practices and disclosures among Palestinian firms.

Keywords Voluntary disclosure · Board characteristics · PEX

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1 Introduction

In today's business environment, agency and asymmetric information problems remain significant concerns for companies. Various solutions have been proposed to mitigate these problems, with transparency through disclosure and board monitoring [1]. Companies increasingly use VD to communicate with investors [2] and comply with legal and regulatory requirements [3]. In Palestine, legal and regulatory reports and disclosures for public firms listed on the Palestine Exchange (PEX) are expressed through Securities Law No. 12 of 2004, Capital Market Authority Law No. 13 of 2004, and the disclosure System approved by the Palestine Securities Exchange and the Capital Market Authority in 2006. The Code of Corporate Governance in Palestine (2009) requires Palestinian-listed companies to include specific information, such as Board composition and committees, social responsibility policies, and safety regulations in their annual reports.

VD is becoming increasingly important in today's capital market. Companies disclose additional information for various reasons, including enhancing their image and reputation [4–6], raising capital at a lower cost [7, 8], improving relationships with customers, communities, and governments [9], and reducing information asymmetry and agency costs [10–13]. On the other hand, inadequate disclosure by companies may result in challenges in securing capital for operational financing or may lead to a higher cost of capital, as per previous research [14, 15].

The significance of VD in promoting transparency and confidence in the business environment is widely acknowledged. However, there is a lack of examinations on its impact on board attributes in emerging economies like Palestine [16, 17]. This study aims to examine the connection between board attributes and the level of VD in Palestinian-listed companies from 2013 to 2017 in order to address a significant gap in current knowledge. Additionally, the study highlights the significance of understanding the factors influencing corporate VD practices. This has significant implications for accounting policymakers, information producers, and users, who are crucial in shaping the financial reporting landscape. Additionally, the present study provides an important contribution to the academic debate on board attributes and VD in the context of developing nations such as Palestine, highlighting its broader implications and capacity to guide forthcoming policies and procedures in similar settings.

2 Literature Review and Development of Hypothesis

Corporate VD has gained increasing attention as a crucial research area. Companies use voluntary disclosures in annual reports to communicate to market their management ideas and promote their potential to stakeholders [18]. Information communication is the highest priority in effectively engaging with stakeholders. In the field of accounting, it serves as a crucial element in fostering the continued expansion and

viability of corporations [18, 19]. Numerous scholarly investigations have examined the connection between corporate governance mechanisms and VD, encompassing variables related to board and firm characteristics [4, 20–25].

The board of directors has a crucial role in aligning management concerns with those of stakeholders, minimizing agency costs and information asymmetry [26]. Previous studies have examined board characteristics and their relationship with voluntary disclosure, including board size [4, 27, 28], board independence [21, 29], and board gender diversity [30, 31].

Previous studies have explored the extent and nature of VD in Palestinian-listed companies in Palestine. For example, [32] studied the effect of VD on stock prices in Palestinian listed companies in 2014, finding that the average VD was 54%, with the banking sector having the highest VD rate of 70%. Furthermore, [29] explored the critical factors influencing VD in Palestinian-listed companies in 2011 and 2007, finding an average VD of 41.7% in 2011 and 30.8% in 2007. Additionally, [33, 34] examined the nature and extent of CSR reporting in the annual reports of Palestinian listed firms, finding a relatively low CSR disclosure level in Palestinian corporations.

Various theories explain firms' voluntary disclosure, including agency, signalling, capital need, and legitimacy theories [1]. The agency theory suggests that companies disclose voluntary information to decrease agency problems, minimize agency costs, and effectively use resources in the shareholders' best interest [12]. The signalling theory indicates that voluntary information distinguishes a company's performance from other firms, enhances its reputation, and attracts new investments [35]. The capital needs theory posits that companies that disclose more voluntary information can obtain funds at a lower cost [36]. Finally, legitimacy theory explains the incentive of management to disclose information voluntarily because disclosure informs the community about the firm's work and contribution to society [37, 38].

2.1 Board Size

The board of directors plays a crucial role in corporate governance, primarily overseeing and regulating management's actions [39]. The size of the board is a crucial factor that can influence its effectiveness in carrying out these functions. Larger boards can provide a greater variety of expertise and contribute to strategic decision-making [40]. In addition, larger boards have been found to minimize the likelihood of information asymmetry [41] and promote greater information disclosure [3]. Previous research has consistently shown a positive relationship between board size and VD levels [10, 20, 27, 29, 40]. Specifically, studies have found that larger boards are linked with higher VD [20, 27, 29, 42]. This relationship can be attributed to larger boards having more diverse expertise and better monitoring and controlling management actions, leading to greater voluntary disclosure. Therefore, based on the argument mentioned above, the first hypothesis will be as follows:

H1: Board size significantly increases voluntary disclosure.

2.2 Board Independence

The board of directors' structure is an essential element of corporate governance. According to previous studies, non-executive directors, who are independent board members and not employed by the firm, have demonstrated greater efficacy in enhancing shareholder value and management oversight compared to insider directors [43]. According to [44], non-executive directors can contribute significantly towards mitigating agency problems and minimizing information asymmetry by offering enhanced VD. Prior studies have indicated that an increased percentage of independent directors serving on the board can enhance the quality of disclosure and reduce the motivations for concealing information [45]. Moreover, it has been noticed that firms with a greater proportion of non-executive directors tend to exhibit a higher degree of transparency towards their investors, as evidenced by a positive correlation between the percentage of non-executive directors and the extent of VD (VD) [3, 21, 26, 29, 46]. Thus, the second hypothesis posited in this research is:

H2: Board independence significantly increases voluntary disclosure.

2.3 Board Gender Diversity

The concept of gender diversity has gained noteworthy consideration in today's society due to the rising presence of women in senior executive positions and on corporate boards, as evidenced by [47, 48]. Research has indicated that the gender diversity of a board of directors could potentially influence the disclosure practices of companies in their annual reports [49]. As per the fundamentals of agency theory, a board that shows greater diversity is expected to demonstrate enhanced efficacy in overseeing managerial activities due to its heightened level of independence [50]. Furthermore, it has been argued by scholars [51] that woman directors possess a significant impact on the monitoring and supervision of managerial activities. Hence, an increased presence of females on the board could potentially improve the board's commitment towards implementing corporate VD practices, as noted in [52]. However, prior research has produced inconsistent findings. Several studies have reported varying results regarding the connection between gender diversity and voluntary disclosure. For instance, certain studies (e.g., [30, 31]) have reported a positive association, while others (e.g., [53, 54]) have indicated a negative association. Drawing from the preceding discussion, the third hypothesis posited in this investigation is as follows:

H3: Board gender diversity significantly increases voluntary disclosure.

3 Methodology

3.1 Population and Sample

This study's population comprises all companies listed on the PEX between 2013 and 2017. The sample includes companies that meet two specific criteria: firstly, they must have been listed on the PEX during the stated period, and secondly, all necessary data on the company for that period must be available. As a result of these criteria, the sample comprises 45 companies, with a total of 225 firm-year observations. To gather the required data, this study relies on the annual reports of the sampled companies, which are publicly accessible on the PEX website.

3.2 Measurement of Variables

3.2.1 The Dependent Variable: Voluntary Disclosure Index

The dependent variable of this study is the level of VD. Prior research has utilized various indices to VD. This research formulated a disclosure index by examining previous studies, including references [21, 25, 55–57], and by considering the legal and regulatory obligations imposed on publicly traded firms on the PEX. The index for disclosure comprises 55 items of voluntary data. The classification of information is divided into five distinct categories, namely corporate and strategic information (CSI), financial and capital market data information (FCMI), directors and senior management information (DSMI), forward-looking information (FLI), and corporate social responsibility information (CSRI).

In order to mitigate the potential for subjective assessment, the score assigned to each firm's disclosure is both additive and unweighted, following Cooke's methodology [58]. The content analysis methodology involves reviewing individual annual reports to ascertain the existence or non-existence of disclosure items. Subsequently, the dummy methodology is implemented to calculate the VD metric for every year statement, providing a value of 1 to the disclosed item and 0 otherwise. Calculating the disclosure score for each annual report involves dividing the number of reported items by the total number of items present in the VDI. The mean value of the VD for an annual report within a specific year can be calculated by utilizing the following formula:

$$\text{VDS} = \frac{\sum \text{Points of (CSI, FCMI, DSMI, FLI and CSRI)}}{55}$$

Table 1 The definitions, and proxies, for the dependent, independent and control variables

Variable	Label	Operational definition	References
Voluntary disclosure index	VDI	$VDS = \sum \text{Points of (CSI, FCMI, DSMI, FLI and CSRI)/55}$	[25]
Board size	BOSIZE	Number of the board of directors	[42, 59, 60]
Board independence	BOIND	Percentage of independent directors on the board	[61]
Board gender diversity	BOGED	Percentage of female directors on the board	[54]
Firm size	FSIZE	The logarithm of the total assets of the firm	[56, 62]
Financial leverage	FLEV	The total debt to total assets	[21]
Firm profitability	PROF	Return on assets (ROA): Net income/ Total Assets	[3]
Firm age	FAGE	The logarithm of the number of years since the establishment	[56, 63]

3.2.2 Independent Variables

This study employs three independent variables: board size, independence, and gender diversity. Furthermore, four control variables are utilized, including firm size, financial leverage, firm performance, and firm age. Table 1 provides the operational definition of this study's dependent and independent variables.

3.3 The Regression Model

In order to examine the impact of board characteristics on the level of VD in the annual reports of Palestinian-listed companies between 2013 and 2017, the following multiple regression model was developed:

$$VDI_t = \beta_0 + \beta_1 BOSIZE_t + \beta_2 BOIND_t + \beta_3 BOGED_t + \beta_4 FSIZE_t + \beta_5 FLEV_t + \beta_6 PROF_t + \beta_7 FAGE_t + \varepsilon$$

Table 2 Descriptive statistics analysis

Variable	Obs	Mean	Std. Dev.	Min.	Max.
VDI	225	0.563	0.152	0.236	0.873
BOSIZE	225	8.764	2.149	5	15
BOIND	225	0.915	0.158	0	1
BOGED	225	0.058	0.107	0	0.571
FSIZE	225	17.622	1.767	14.01	22.308
FAGE	225	3.044	0.553	1.099	4.277
FLEV	225	0.413	0.257	0.009	0.947
FPROF	225	0.026	0.083	-0.622	0.318

4 Result and Discussion

4.1 Descriptive Statistics

Table 2 displays the results of the descriptive statistics analysis conducted on all study variables, which include the dependent, independent, and control variables.

Table 2 reveals that the average score for VD by companies is 56.31% out of the 55 items included in the VDI. This finding is consistent with prior studies conducted within the Palestinian context. For instance, according to [29], Palestinian-listed firms disclosed around 41.7% and 30.8% of the VDI items in 2011 and 2007, respectively. Additionally, [32] found that Palestinian companies listed on PEX disclosed approximately 54% of the VDI items.

Table 2 illustrates that the mean number of board members for listed companies is approximately nine. The lower limit for the number of board members is five, whereas the upper limit is 15. Notwithstanding the fact that the corporate governance code for publicly listed companies in Palestine permits a maximum of 11 members on the board, certain companies have been found to be in violation of this regulation. Notably, a significant majority of directors, precisely 91.5%, are classified as independent directors. This implies they do not hold any executive positions within their companies. Furthermore, the proportion of female directors within the sampled companies' total board members are, on average, 5.77%, indicating a comparatively low representation.

4.2 Normality, Multicollinearity, and Heteroscedasticity

Before performing a regression analysis [64], assessing the data for normality, multicollinearity, and heteroscedasticity is crucial. Normality indicates that the data should have an approximately normal distribution to satisfy statistical assumptions [65].

Multicollinearity occurs when highly correlated predictor variables lead to inconsistent and unreliable results [65]. Lastly, heteroscedasticity refers to the presence of unequal variances in the errors, which can affect the accuracy of the results [65]. Therefore, it is necessary to investigate these issues to ensure the reliability and validity of the regression analysis [65]. For other details and applications for heteroscedasticity, refer to [66, 67]

The normality of the residuals was evaluated using the Shapiro–Wilk W test, and the results indicate that the p-value of 0.464 was not statistically significant at the 0.05 level (refer to Table 3). Thus, the residuals can be assumed to follow a normal distribution, which is a critical assumption for many statistical analyses. These findings provide support for using parametric statistical methods for data analysis.

Pearson’s correlation was used to determine the presence of multicollinearity among the study variables (refer to Table 4). The highest correlation, 0.494, was found between FSIZE and FAGE. The correlations among the variables were either low or moderate, indicating the absence of multicollinearity.

Lastly, the Breusch-Pagan/Cook-Weisberg test was utilized to assess the assumption of constant variance in the model and detect heteroscedasticity. The chi-square statistic yielded a value of 1.89; the corresponding p-value was 0.169 (refer to Table 5). These results suggest no significant evidence to reject the null hypothesis of constant variance, indicating no presence of heteroskedasticity.

Table 3 Shapiro–Wilk W test for normal data

Variable	Obs	W	V	Z	Prob > z
Residuals	225	0.994	1.055	0.123	0.451

Table 4 Matrix of correlation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) VDI	1.000							
(2) BOSIZE	0.080	1.000						
(3) BOIND	0.206	0.069	1.000					
(4) BOGED	0.006	−0.217	−0.061	1.000				
(5) FSIZE	0.570	0.459	0.205	−0.190	1.000			
(6) FAGE	0.001	−0.010	0.059	0.095	−0.024	1.000		
(7) FLEV	0.297	0.218	−0.009	0.015	0.494	−0.204	1.000	
(8) FPROF	0.170	−0.067	0.066	0.183	0.123	0.247	−0.191	1.000

Table 5 Breusch-Pagan/
Cook-Weisberg test for
heteroskedasticity

Variables: fitted values of VoluntaryD
 $\chi^2(1) = 1.89$
 Prob > $\chi^2 = 0.1690$

4.3 Regression Analysis

The study conducted a Hausman test to determine the suitability of the fixed or random effects panel regression model before proceeding with the regression analysis [1]. The statistical analysis conducted using the Hausman test revealed a p-value below the threshold of 0.05, suggesting that the fixed effect model was a more appropriate choice for the study. The regression results are displayed in Table 6, with Model 1 utilizing Pooled OLS, Model 2 implementing the random effect model, and Model 3 employing the fixed effect.

The regression analysis results presented in Table 6 reveal essential insights into the relationship between board characteristics and VD practices among Palestinian firms listed on the PEX from 2013 to 2017. Therefore, the fixed effect model was the most suitable for the analysis based on the results of Hausman’s test.

The first hypothesis suggested a positive association between the size of the board and the extent of VD. The findings confirm the stated hypothesis, as a statistically significant positive association was found between board size and VD level ($\beta = 0.094, p < 0.01$). This finding suggests that corporations with a greater number of board members tend to reveal a higher amount of voluntary information. The present

Table 6 Regression analysis

Variables	(1)	(2)	(3)
	Pooled OLS	Random effect	Fixed effect
BOSIZE	0.0218 (0.0461)	0.0218 (0.0461)	0.0940** (0.0472)
BOIND	0.124 (0.0986)	0.124 (0.0986)	0.129 (0.153)
BOGED	-0.0738 (0.108)	-0.0738 (0.108)	-0.269** (0.123)
FSIZE	0.0613*** (0.0112)	0.0613*** (0.0112)	0.106*** (0.0231)
FAGE	0.110*** (0.0273)	0.110*** (0.0273)	0.268*** (0.0423)
FLEV	-0.0191 (0.0562)	-0.0191 (0.0562)	-0.112* (0.0648)
FPROF	0.0677 (0.0911)	0.0677 (0.0911)	-0.0407 (0.0885)
Constant	-0.975*** (0.204)	-0.975*** (0.204)	-2.264*** (0.402)
Observations	225	225	225
R-squared			0.384

Standard errors in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1

finding aligns with prior research [20, 29, 33, 68] that showed a positive relationship between the size of the board and the degree of VD. One possible explanation for the positive relationship between board size and VD is that a larger board provides more diverse perspectives and experiences, which can contribute to developing and implementing effective disclosure practices. This diversity can increase the level of scrutiny applied to decision-making processes, which can promote accountability and transparency.

Moreover, a larger board has the potential to offer more opportunities for monitoring and supervision, thereby promoting the company's adherence to ethical and social responsibilities. Organizations with larger boards may exhibit a greater propensity to prioritize stakeholder interests because they may have a more extensive array of perspectives and interests at the board level. Finally, a larger board may lead to a more comprehensive and meaningful approach to VD.

The second hypothesis was examined to determine whether there is a significant positive association between board independence and the extent of VD. The regression analysis findings suggest no significant correlation between board independence and the degree of VD, as evidenced by the beta coefficient of 0.129 and a p-value greater than 0.05. Thus, the aforementioned hypothesis is rejected. This result aligns with prior scholarly investigations [23, 55, 69], which indicate that non-executive directors within Palestinian companies lack true independence due to their potential family-related, business, or social connections with executive directors. These relationships have been shown to impede their ability to serve as effective monitors.

The third hypothesis aimed to determine whether there is a positive relationship between board gender diversity and VD. However, the study's results revealed a significant negative relationship between the two variables ($\beta = -0.269$, $p < 0.01$), leading to the rejection of this hypothesis. This unexpected finding raises questions about why board gender diversity could negatively impact VD practices and more research is required to explore this relationship further. One potential explanation is that female directors may lack sufficient influence or power to shape the board's strategic direction, hindering their ability to advocate for VD initiatives. The outcome aligns with prior research that has established an adverse relationship between board gender diversity and corporate disclosure, as evidenced by studies [53, 70, 71]. As indicated by [53], the female representation level on Pakistan's boards is notably low. As per [71], it has been suggested that female directors may have insufficient educational and experiential qualifications to effectively advocate for corporate social responsibility (CSR) reporting initiatives. Moreover, in the context of Bangladesh, where most firms are owned and operated by families, there is an inverse relationship between the proportion of female representation on boards of family-owned firms and CSRD.

Furthermore, the negative relationship between the percentage of female representation on boards and the level of VD in emerging nations, such as Palestine, can be attributed to multiple factors. First, it is worth noting that social and cultural norms in these nations may constrain women's involvement in corporate decision-making and board positions. Tokenism can occur, whereby female directors are appointed

solely to meet gender diversity quotas without granting them substantive decision-making authority [1]. The critical mass theory posits that the presence of fewer than three female members on a board is inadequate to bring about important changes [72]. Moreover, female directors may encounter obstacles in obtaining access to the networks and resources accessible to their male counterparts, thereby diminishing their efficacy in advancing transparency and disclosure. In addition, the restricted representation of women on boards within these nations could pose difficulty in deriving significant deductions regarding their impact on VD [71]. Additionally, the lack of diversity among women directors may limit their ability to promote VD, as they may hold similar views and experiences to their male counterparts. Therefore, to fully realize the benefits of diverse perspectives and experiences in promoting VD practices, policymakers and organizations must address these barriers and promote greater gender diversity on boards.

Regarding the control variables, the findings indicate a significant association between the level of VD and firm size ($\beta = 0.106$, $p < 0.001$). This aligns with the stakeholder theory's assertion that larger firms are subject to increased demands from a larger number of stakeholders to provide more information. Additionally, the findings indicate a positive relationship between the age of a firm and the extent of VD ($\beta = 0.268$, $p < 0.001$), suggesting that older established firms exhibit a greater willingness to disclose information voluntarily compared to their newly counterparts. This finding aligns with previous research conducted in the field [61, 73]. Finally, the study concludes that there is a negative association between VD practices and financial leverage ($\beta = -0.112$, $p < 0.05$), which is in line with prior research [20, 23, 61]. The result may be due to the increased risk linked to greater financial leverage, thereby causing companies to exercise greater discretion in their voluntary information disclosure practices.

5 Conclusion

In conclusion, this study contributes to the literature by investigating the extent of VD and the impact of board characteristics on the level of VD in the annual reports of Palestinian companies listed on PEX from 2013 to 2017. The study's results suggest that the degree of VD observed among the sampled companies is moderate. Moreover, the category of financial and capital market information is disclosed most frequently, while the category of forward-looking information is disclosed least frequently. Moreover, the study reveals that the size of the board is a significant and positive variable that affects the implementation of VD practices. Conversely, the gender diversity of the board has a significant and negative effect on VD. This highlights the importance of considering the board's characteristics when evaluating the extent of VD in Palestinian companies.

According to the research findings, implementing an official VDI for Palestine would offer valuable assistance to policymakers and regulators. The proposed VDI is

intended to be utilized to compare and assess the voluntary measures and disclosures implemented by corporations conducting business operations within the region of Palestine. Moreover, Palestinian firms must comply with the Code of Corporate Governance in Palestine, demonstrating the significance of board structure and size. Therefore, it may be advantageous for companies to consider improving the number of board members to improve their VD approaches. This goal could be achieved by hiring supplementary independent directors possessing diverse skill sets and expertise capable of offering valuable input and scrutinizing managerial judgments. Furthermore, augmenting the board's dimensions could provide supplementary resources and improved supervision to aid the organization in fulfilling its responsibilities regarding disclosure. Moreover, it is recommended that future research efforts explore the influence of other possible explanatory variables, such as the director's length of service, age, and board committees, on the extent of VD.

According to the research findings, a diverse gender composition on a board of directors has a negative effect on VD. This statement suggests that organizations must implement strategies that facilitate the ability of female directors to make valuable contributions towards improving transparency and disclosure. To achieve this goal, corporations could consider implementing policies and practices to enhance women's participation and influence in corporate decision-making. These policies and practices may include mentoring programs or diversity initiatives. Additionally, companies may want to focus on improving the networks and resources available to women directors, which may help to enhance their effectiveness in promoting VD practices. By taking these steps, companies may overcome the barriers that limit the effectiveness of women directors in promoting transparency and disclosure and realize the potential benefits of greater gender diversity on their boards.

However, the study has several limitations. Firstly, using a disclosure index to measure VD levels may limit the comparability of the results with other studies that used different indices. Secondly, the VDI used in the study measures the quantity rather than the quality of voluntary information disclosed, and there is no independent audit to verify the accuracy and reliability of the information. Lastly, the study's period is limited to only five years, and future studies could extend the period to gather more comprehensive data.

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