The Role of Board of Directors in Firm Performance and Risk Disclosure*

"An Empirical Study on the Egyptian Companies"

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ABSTRACT

This study seeks to examine the impact of board of directors' characteristics on both firm performance and risk disclosure for a sample of companies listed on the Egyptian Stock Exchange (EGX) for the period from 2016 until 2020. The results of the study showed for empirical regression model (1) that there is a negative insignificant association between board size and firm performance. The results also indicated that there is a positive significant association between board independence and firm performance. Furthermore, the results indicated that there is a positive insignificant association between board meetings and firm performance. The results also showed that there is a negative insignificant association between board expertise and firm performance. The results also indicated that there is a positive significant association between board of directors' connections and firm performance.

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Concerning empirical regression model (2), the results showed that there is a negative insignificant association between board size and risk disclosure. The results also indicated that there is a positive significant association between board independence and risk disclosure. Furthermore, it was found that there is a negative insignificant association between board meetings and risk disclosure. The results also showed that there is a negative insignificant association between board expertise and risk disclosure. It was also found that there is a positive significant association between board of directors’ connections and risk disclosure.

1-Research Problem:

The agency theory argues that in order to protect shareholders' interests, the board of directors must undertake an effective oversight function. For the boards of directors to perform their functions effectively, it is assumed that board effectiveness is determined by significant factors such as its size, independence, meetings, and expertise (Brennan, 2006; Coles *et al*., 2008; John & Senbet, 1998). Because of the economic and environmental conditions and events that are considered primary determinants of the economic development and progress in Egypt and due to the role of the board of directors that has been emphasized significantly in the last edition of the Egyptian Corporate Governance Code (2016), efforts are required to increase the effectiveness of the boards of directors in the Egyptian companies.

Accordingly, the current study poses the main research question which is to examine the impacts of board of directors' characteristics on financial performance and risk disclosure in Egypt especially after the issuance of the last Egyptian Corporate Governance Code (2016) for a sample of Egyptian companies listed on the Egyptian Stock Exchange (EGX).

2-Research Significance:

The significance of the research stems from several aspects. First, the critical role that the board of directors plays in the success of the firm requires an in-depth research on different factors that link the board of directors to firm performance as well as risk disclosure. Second, this study contributes to the knowledge by investigating the effects of

board of directors' connections on firm performance and risk disclosure in Egypt. Third, the current study has some practical implications as its results will be useful for creating awareness among companies on the types and level of risk information and how to manage it. Finally, the study will be useful for helping the stakeholders including current and potential investors in making appropriate judgments and decisions about the company's performance.

3-Research Objectives:

The objectives of the current research are:

1. Examining the association between board of directors' characteristics and financialperformance.

2. Examining the association between board of directors' characteristics and risk disclosure.

4. Research Methodology:

In order to achieve the research objectives, both theoretical study and empirical study will be relied upon as follows:

(A) Theoretical Study:

The inductive approach is followed in the theoretical background of the study.

(B) Empirical Study:

Deductive approach is used in this study. The empirical study will be conducted using quantitative data collected from the annual reports of the Egyptian non-financial companies

listed on the Egyptian Stock Exchange (EGX) from 2016 until 2020. The final sampleconsists of 130 companies listed on the Egyptian Stock Exchange (EGX).

5. Research Limitations:

The current study is subject to some limitations. First, it used publicly available data for the time period form 2016 until 2020. Second, companies in the financial sector are excluded, therefore the results of this study cannot be generalized to these companies.

6. Previous Studies:

6.1. Studies Addressed the Association Between Board of Directors and Firm Performance:

Many prior studies aimed to examine the association between board of directors' characteristics (e.g. board size, board independence, board meetings, board expertise, and board of directors' connections) as well as firm performance.

For example, **Abdur Rouf (**2011**) study** examined the association between board of directors' characteristics and firm performance using a sample of 93 non-financial companies listed on Dhaka Stock Exchange (DSE) in 2006. The study found that there is a positive association between board independence and firm performance.

Abdel Atty et al. (2018) study examined the effect of board of directors' characteristics on financial performance using a sample of 50 more active Egyptian companies listed on the Egyptian Stock Exchange (EGX) of non-financial companies from

2012 to 2017. The study found that there is a positive association between board meetingsand firm performance.

Ali and Nasir (2014) study examined the effect of board of directors' characteristics on financial performance using data collected from the annual reports of companies in Pakistan from 2007 to 2011. The study found that board independence has a significant positive effect on firm performance.

Al-Matari et al. (2014) study examined the association between board of directors' characteristics and firm performance (ROA) using a sample of 81 companies listed on the Muscat Security Market (MSM) from 2011 to 2012. The study found that board meetings are positively associated with firm performance.

Johl et al. (2015) study examined the effect of board characteristics on firm performance using data collected from the annual reports of 700 Malaysian public listed companies in 2009. The study found that board size is positively associated with firm performance.

Johl et al. (2015) study examined the effect of board characteristics on firm performance using data collected from the annual reports of 700 Malaysian public listed companies in 2009. The study found that board expertise is positively associated with firm performance.

Shin et al. (2018) study examined the effect of connected outside directors on firm performance using a sample of listed Korean Chaebol companies from 2001 to 2011. The study found that these connected outside directors are positively associated with firm performance.

6.2. Studies Addressed the Association Between Board of Directors and Risk Disclosure:

Many prior studies aimed to examine the association between board of directors' characteristics (e.g. board size, board independence, board meetings, and board expertise) as well as risk disclosure.

For instance, **Abraham & Cox (2007) study** investigated the association between board of directors in terms of board independence and risk disclosure for companies that constitute the Financial Times Stock Exchange (FTSE) 100 Index in the UK in 2002. The study found that board independence is positively associated with corporate risk disclosure. **Al-Maghzom et al. (2016) study** examined the impact of board of directors' characteristics on risk disclosure for all listed Saudi Arabian banks from 2009 to 2013. The

study found that board independence is positively associated with risk disclosure.

Alshirah et al. (2020) study examined the impact of board of directors' characteristics on corporate risk disclosure using a sample of non-financial Jordanian companies listed on the Amman Stock Exchange (ASE). The study found that board expertise is positively associated with risk disclosure.

Carmona et al. (2016) study examined the association between board size and risk disclosure using a sample of 271 Spanish listed companies in 2006, 2009, and 2012. The study found that board size is positively associated with risk disclosure.

Carmona et al. (2016) study examined the association between board meetings and risk disclosure using a sample of 271 Spanish listed companies in 2006, 2009, and 2012. The study found that board meetings are positively associated with risk disclosure.

Elshandidy and Neri (2015) study examined the impact of the proportion of non-executive directors on risk disclosure practices. The study found that voluntary risk disclosure is positively associated with the proportion of non-executive directors in the UK. On the other hand, little studies aimed to examine the association between board of directors' connections and risk disclosure. They found that board of directors' connections

are negatively associated with risk disclosure.

For instance, **Al-Hadi et al. (2016) study** examined the impact of the existence of ruling family board members as a form of connections on the extent and quality of risk disclosure of public listed financial companies of the Gulf Cooperation Council (GCC) countries in Bahrain, the Kingdom of Saudi Arabia (KSA), Kuwait, Oman, Qatar, and the United Arab Emirates (UAE) from 2007 to 2011. The study found that the presence of ruling family board members minimizes the extent and quality of risk disclosure. This result is supported by **Al-Hadi et al. (2018) study** which showed that there is a negative association between board of directors' connections and market risk disclosure.

6.3. Research Gaps:

The initial literature has addressed the impact of board of directors' characteristics in terms of size, independence, meetings, and expertise on both firm performance and risk disclosure in Egypt. Based on previous studies, there is a little evidence about the impact of board of directors' characteristics on both firm performance and risk disclosure especially after the economic and environmental conditions and events that have occurred in Egypt over the last years. In addition, based on previous studies, there is no evidence about the impact of board of directors' connections on both firm performance and risk disclosure in Egypt. Consequently, the current research seeks to fill these gaps in the literature by examining the impacts of board of directors' characteristics (i.e. size, independence, meetings, expertise, and connections) on both financial performance and risk disclosure especially after the issuance of the last Egyptian Corporate Governance Code (2016) for a sample of Egyptian companies listed on the Egyptian Stock Exchange (EGX).

7. **Research Hypotheses Development:**

In light of the nature of the research problem and in order to achieve the research objectives, a set of the following hypotheses will be formulated based on the relevant theories and the empirical studies:

- Ceteris paribus, there is a positive significant association between board size andfinancial performance.
- Ceteris paribus, there is a positive significant association between board independenceand financial performance.
- Ceteris paribus, there is a positive significant association between board meetings and financial performance.
- Ceteris paribus, there is a positive significant association between board expertise and financial performance.
- Ceteris paribus, there is a positive significant association between board of directors' connections and financial performance.Ceteris paribus, there is a positive significant association between board size and riskdisclosure.
- Ceteris paribus, there is a positive significant association between board independenceand risk disclosure.
- Ceteris paribus, there is a positive significant association between board meetings and risk disclosure.
- Ceteris paribus, there is a positive significant association between board expertise andrisk disclosure.
- Ceteris paribus, there is a negative significant association between board of directors' connections and risk disclosure.

8. **Research Structure:**

The structure of the research is organized as follows:

First: The Characteristics of Board of Directors

Second: Empirical Study

<u>First</u>: <u>The Characteristics of Board of Directors</u>:

This subsection discusses five different board of directors' characteristics namely: board size, board independence, board meetings, board expertise, and board of directors' connections that will be examined subsequently for their impact on both firm performance and risk disclosure.

1. <u>Board Size</u>:

One of the characteristics that affect the board of directors' ability to function effectively is the size of the board (Brennan, 2006; Coles *et al*., 2008; John & Senbet, 1998). Board size is the total number of directors serving on the company's board (Vafeas, 1999). More specifically, it refers to the total number of directors in the board of each firm that includes the Chief Executive Officer (CEO), the Chairman of the Board, executive directors, non-executive directors, and independent directors for each accounting year (Shakir, 2008). The size of the board is determined by several factors. First, the range and diversity of the company's operations. Second, the type of activity and the information environment in which the company operates (Boone *et al*., 2007). Third, firm size and growth opportunities are essential determinants of board size (Lehn *et al*., 2009). Therefore, board size is a vital issue in deciding whether it is preferred to be large or small.

2. <u>Board Independence</u>:

Another characteristic that affects the board of directors' ability to function effectively is the independence of the board (Brennan, 2006; Coles *et al*., 2008; John & Senbet, 1998). Board independence is directly associated with the ability of the board of directors to discharge its oversight function effectively. It indicates that the appointment of independent directors on the board enhances the board's overall ability to keep its objective decisions free of managerial domination. This implies two meanings. One is that the board should comprise a majority of independent directors willing to actively provide an objective and independent judgment, otherwise board independence cannot be achieved

The other meaning is that the independent director should be independent frommanagement (Wang, 2018).

3. <u>Board Meetings</u>:

Board meetings are considered a positive characteristic that influences the activity of the board (Zango *et al*., 2016). They refer to the attendance of board of directors to discuss issues concerning the company (Kakanda *et al*., 2016). In prior studies, board meetings are used as an important measure of board diligence and effectiveness (e.g. Cormier *et al*., 2010; Vafeas, 1999; Yekini *et al*., 2015).

4. <u>Board Expertise</u>:

Board Expertise is also one of the characteristics that affect the board of directors' ability to function effectively. So far, the literature on the professional experience and knowledge of the board of directors is limited. Prior studies that highlight the professional knowledge of the board of directors provide critical insight into some of the primary reasons behind the appointments of the directors who have experiences in different fields and make inferences about the inner activities of the board based on the skills and competencies of its members (Balogh, 2016). For instance, Güner et al. (2008) investigated the role of financial expertise of directors on boards and found that external funding increased and investment cash flow sensitivity decreased when the directors that have commercial expertise engage in boards.

5. <u>Board of Directors' Connections</u>:

Generally, the issue of external relations and communications of companies has become one of the most interesting topics in management, economics, and finance. During the current century, these relations and communications have been observed in many developed and developing countries over the world. It has been acknowledged that private companies seek to establish connections and relations through their boards of directors. In this respect, companies are considered connected if at least one of the board of directors, CEO, or chairman is a current or former member of the parliament in their national assembly (Yilmaz, 2018).

Second: Empirical Study:

In order to achieve the main purpose of the study which is to examine the role of board of directors' characteristics in firm performance as well as risk disclosure, the current study will employ the regressions as the primary technique used to measure the explanatory power of the independent variables against the dependent variables. Hair et al. (2014) stated that the proper technique of analysis when the research problem involves a single dependent variable assumed to be associated with two or more independent variables is the multiple regression analysis. Therefore, multiple regression analysis is selected as the main method of analysis in this study. The objective of multiple regression analysis is to expect how the changes in the dependent variable are explained by changes in the independent variables. This objective is most often achieved through the statistical rule of least squares (Hair *et al*., 2014).

1. Data Collection and Sample Selection:

The empirical study is conducted using primary data collected from the annual reports of the Egyptian non-financial companies listed on the Egyptian Stock Exchange (EGX) from 2016 until 2020. The annual reports of the listed companies can be obtained from the website of Egypt Mubasher Information as well as from the websites of the sample companies. Listed companies are selected in this study because they comply with the rules and standards set by the regulatory authorities in their business activities. In addition, they are expected to prepare and publish their information according to the accounting practices established (Amer *et al*., 2014). Stata/MP software version 14 will be used in order to perform the statistical analyzes of quantitative data and to test the validity of the research hypotheses which mainly examine the impact of board of directors' characteristics on firm performance and risk disclosure in companies' annual reports.

The population of the study is represented in the Egyptian stock companies listed on the Egyptian Stock Exchange (EGX) which are 218 companies in 2022 (EGX, 2022). The final sample includes 130 companies listed on the Egyptian Stock Exchange. The selected sample represents companies which are the most likely to attract and employ efficient and skilled individuals on the board of directors. In addition, these companies have privileged access to capital and other resources which are necessary not only for survival but also for improving their performance. The companies of the sample cover 3 sectors including industrials, consumer goods, and consumer services. Financial sector is excluded in this study because its characteristics are different from those of companies in other sectors in terms of financial statements, profitability measures, and liquidity assessment (Zeitun &

Tian, 2007). In addition, it is subject to special accounting practices, regulations, and taxes (Soliman & Abd Elsalam, 2012). Table 1 shows the sample distribution of the current study.

Table 1: Sample Distribution of the Study Classified According to the Sectors

Sectors	**Number of Companies**	**Percentage**
Industrials	57	44%
Consumer Goods	45	35%
Consumer Services	28	21%
Total	130	100%

2. <u>Empirical Regression Models</u>:

<u>First Empirical Regression Model</u>: <u>Examining the Impact of Board of Directors on Firm Performance</u>:

$$FP_{it} = \alpha + \beta_1\, BSIZE_{\,it} + \beta_2\, BIND_{\,it} + \beta_3\, BMEETs_{\,it} + \beta_4\, BEXP_{\,it} + \beta_5\, CBDs_{\,it} + \beta_6\, FSIZE_{\,it} + \beta_7\, FLEV_{\,it} + \varepsilon_{\,it} \qquad (1)$$

<u>Second Empirical Regression Model</u>: <u>Examining the Impact of Board of Directors on Risk Disclosure</u>:

$$RD_{\,it} = \alpha + \beta_1\, BSIZE_{\,it} + \beta_2\, BIND_{\,it} + \beta_3\, BMEETs_{\,it} + \beta_4\, BEXP_{\,it} + \beta_5\, CBDs_{\,it} + \beta_6\, FSIZE_{\,it} + \beta_7\, FLEV_{\,it} + \varepsilon_{\,it} \qquad (2)$$

<u>Where</u>:

α is the intercept or constant,

$\beta_1 - \beta_7$ are the correlation coefficients,

FP is Firm Performance,

RD is Risk

Disclosure,BSIZE is

Board Size,

BIND is Board Independence,

BMEETS are Board

Meetings,BEXP is Board

Expertise,

CBDS are Connected Board of Directors,

FSIZE is Firm Size,

FLEV is Firm Leverage,

ε is the error term.

The variables featured in the above empirical regression models can be defined in table 2 as follows:

Table 2: Variables Definition

Acronym	**Definition**
<u>Independent Variables</u>:	
$BSIZE_{it}$	Board size for company i in year t
$BIND_{it}$	Board independence for company i in year t
$BMEETS_{it}$	Board meetings for company i in year t
$BEXP_{it}$	Board expertise for company i in year t
$CBDS_{it}$	Connected board of directors for company i in year t
<u>Dependent Variables</u>:	
FP_{it}	Firm performance for company i in year t
RD_{it}	Risk disclosure for company i in year t
<u>Control Variables</u>:	
$FSIZE_{it}$	Firm size for company i in year t
$FLEV_{it}$	Firm leverage for company i in year t

3. <u>Variables Measurement</u>:

3.1. <u>Independent Variables</u>:

- Board size is measured as the total number of the board of directors.
- Board independence is measured as the number of independent directors on the board.
- Board meetings are measured as the number of meetings held during the year.
- Board expertise is measured as the number of board members with experiences in different fields.
- Board of directors' connections are measured as the number of connected board of

directors who are current or former governmental members, parliamentarians, membersin political parties, or journalists.

3.2. Dependent Variables:

(A) Firm Performance:

Consistent with prior studies, the current study adopts the ratio of return on assets (ROA) as the measurement for firm performance (e.g. Abdel Atty *et al.*, 2018; Abdur Rouf, 2011).

(B) Risk Disclosure:

Consistent with prior studies, the current study adopts the manual content analysis approach for measuring the extent and quality of risk disclosure in the annual reports of companies (e.g. AL-Shammari, 2014; Dobler & Luckner, 2018).

3.3. Control Variables:

According to prior studies, the following control variables are involved in the empirical regression models:

- Firm size is measured as the natural logarithm of total assets (Baroma, 2014; Elzahar & Hussainey, 2012).
- Firm leverage is measured as total liabilities divided by total assets (Baroma, 2014; Iqbal& Usman, 2018).

4. Multivariate Regression Results:

4.1. Results and Discussion of the First Empirical Regression Model:

The first empirical regression model examines the impact of board of directors on firm performance. Based on the statistical analysis shown in table 3, the probability of the model is significant (Prob > F = 0) and the overall R2 (coefficient of determination) is 0.3194 which means that 32% in the variations of financial performance is explained by the independent variables.

Concerning the first hypothesis (H1), it was found that there is a negative insignificant association between board size and firm performance (P = 0.420 > 0.05 level of significance). A possible explanation for this negative association is that companies that have larger board size may confront less effective control mechanisms because of communication gaps, resulting in lower firm performance. This result is supported by Abdel Atty et al. (2018) and Saha et al. (2018) who found that there is a negative insignificant association between board size and firm performance.

Regarding the second hypothesis (H2), the panel results indicated that there is a positive significant association between board independence and firm performance (P = 0.031 < 0.05 level of significance). A possible explanation for this association is that board independence provides effective monitoring of managerial decision making by reducing the dominance of the Chief Executive Officer (CEO) within the board, thus increasing firmperformance. This result is consistent with the agency theory. This result is supported by Amer et al. (2014) who found that there is a positive association between board independence and firm financial performance.

In relation to the third hypothesis (H3), it was found that there is a positive insignificant association between board meetings and firm performance (P = 0.227 > 0.05 level of significance). A possible explanation for this positive association is that through frequent meetings, board of directors determine operational issues by discussing and participating with each other, thus enhancing the decision making process, and consequently firm performance. Accordingly, this result supports the crucial role of monitoring activities of the board of directors through frequent meetings based on the agency theory. This result is supported by Al-Daoud et al. (2016) and Buchdadi et al. (2019) who found that there is a positive association between board meetings and firm performance.

With regard to the fourth hypothesis (H4), it was found that there is a negative insignificant association between board expertise and firm performance (P = 0.412 > 0.05 level of significance). This is because of the policy of appointing family members or people known to the family members on the board of directors in many Egyptian companies controlled by family members. Members who hold a high academic degree in a specific field are selected for membership on the board of directors based on their relationship with the family but are not qualified to perform the corporate work because they lack the skills that are required by the business. This result is supported by KANAKRIYAH (2021) who found that there is a negative association between board expertise and firm performance. Concerning the fifth hypothesis (H5), it was found that there is a positive significant association between board of directors' connections and firm performance (P = 0.011 <

0.05 level of significance), which implies that board of directors' connections are a factor

affecting firm performance positively. A possible explanation for this positive association is that external relations and connections are useful for companies since they can provide facilities for external financial and operational activities, thus increasing firmperformance. This result is supported by Shin et al. (2018) who found that there is a positive association between connected outside directors and firm performance.

With respect to the control variables, the panel results indicated that there is a positive significant association between firm size and firm performance (P = 0.021 < 0.05 level of significance). A possible explanation for this association is that the larger the assets, the more capital invested, the more money circulated and the greater the market capitalization will improve the company's financial performance (Meiryani et al., 2020). This result is supported by Meiryani et al. (2020) who found that there is a positive significant association between firm size and firm performance. In addition, it was found that there is a negative significant association between firm leverage and firm performance (P = 0 < 0.05 level of significance), which implies that firm leverage is a factor affecting firm performance negatively. A possible explanation for this association is that the higher the debt, the higher the risk, and the higher the costs of financing, consequently the lower the firm's profitability. This finding is supported by Iqbal and Usman (2018) who found that there is a significant association between financial leverage and firm performance.

In conclusion, the researcher found that the second and fifth hypotheses are accepted as consistent with the expected hypotheses. On the other hand, the first, third, and fourth hypotheses are rejected compared to the expected hypotheses.

Table 3: Panel Regression Results of the First Model

FP	**Coefficient**	**Robust Std. Err.**	**t**	**P> |t|**	**[95% Confidence Interval]**	
BSIZE	-0.0091898	0.011333	-0.81	0.420	-0.031837	0.0134575
BIND	0.0014515	0.0127889	0.11	0.031	-0.0270082	0.0241051
BMEETS	0.0022236	0.0018231	1.22	0.227	-0.0014194	0.0058667
BEXP	-0.0097926	0.0118529	-0.83	0.412	-0.0334788	0.0138935
CBDS	0.0448973	0.0171268	2.62	0.011	0.0106721	0.0791226
FSIZE	0.0231179	0.0171508	1.35	0.021	-0.0111552	0.0573911
FLEV	-0.1320737	0.0275454	-4.79	0.000	-0.1871189	-0.0770286
_cons.	-0.3203534	0.2910563	-1.10	0.275	-0.901983	0.2612762
F(7,63) = 6.60 Prob > F= 0 Overall R^2 = 0.3194						

4.2. **Results and Discussion of the Second Empirical Regression Model**:

The second empirical regression model examines the impact of board of directors on risk disclosure. Based on the statistical analysis shown in table 4, the probability of the model is significant (Prob > chi2 = 0) and the overall R^2 is 0. 3014 which means that 30% in the variations of risk disclosure can be explained by the independent variables.

Concerning the ninth hypothesis (H6), it was found that there is a negative insignificant association between board size and risk disclosure (P = 0.179 > 0.05 level of significance). This implies that the larger the board the lower the risk disclosure.

According to the researcher, this is due to the fact that larger boards may act inefficiently because of the lack of communication and coordination. Therefore, while the monitoring capacity of the board increases with more directors, this benefit may be outweighed by costs related to ineffective communication and slow decision-making, resulting in lower risk disclosure. This result is supported by Saleh et al. (2018) who found that there is a negative insignificant association between board size and risk disclosure.

Regarding the tenth hypothesis (H7), the panel results indicated that there is a positive significant association between board independence and risk disclosure (P = 0.05 = 0.05 level of significance). A possible explanation for this positive association is that board independence plays an important role in the risk disclosure practices of the companies. The more the proportion of independent board of directors, the more the level of internal controls applied by the firm to provide greater disclosure (including risks) and guidance into strategic decision making, performance measurement, and internal as well as external auditing processes. This result is consistent with the agency theory. This result is supported by Saleh et al. (2018) who found that there is a positive insignificant association between board independence and risk disclosure.

In relation to the eleventh hypothesis (H8), it was found that there is a negative insignificant association between board meetings and risk disclosure (P = 0.095 > 0.05 level of significance). According to the researcher, the reason for this negative association may stem from the fact that during the meetings, the directors spend more time inperforming day-to-day functions rather than performing their oversight functions on the management's effectiveness. In addition, as the frequency of board meeting increases, the costs (for instance; directors' meeting allowances and travelling fares) of holding such meetings increase, which may finally affect the ability to disclose risks negatively. This result is supported by Saleh et al. (2018) who found that there is a negative insignificant association between board meetings and risk disclosure.

With regard to the twelfth hypothesis (H9), the panel results indicated that there is a negative insignificant association between board expertise and risk disclosure (P = 0.379 > 0.05 level of significance). According to the researcher, the reason for this negative association may be that board of directors with multiple directorships are busy trying to discharge their responsibilities in other boards on which they serve. This may make their services less effective since they will not have full concentration on attaining the objective of a specific board, which may finally affect the ability to disclose risks negatively. This result is contradicted with Alshirah et al. (2020) who found that there is a positive association between board expertise and risk disclosure. This may be due to the differencesin business environment, sample size, and time period analysis.

Concerning the thirteenth hypothesis (H10), the panel results indicated that there is a positive significant association between board of directors' connections and risk disclosure (P = 0.032 < 0.05 level of significance). A possible explanation for this association is that companies in which connected board of directors who may have a sense of impunity that may lead to fraudulent behaviours in financial markets, are likely to increase the level of risk disclosure in their annual reports. This result is contradicted with Al-Hadi et al. (2016) and Al-Hadi et al. (2018) who found that there is a negative significant association between board of directors' connections and risk disclosure. This may be due to the differences in business environment, sample size, and time period analysis.

With respect to the control variables, the panel results indicated that there is a positive significant association between firm size and risk disclosure (P = 0.001 < 0.05 level of significance). According to the agency theory, large firms rely on external finance, hence need to disclose more risk information to different users, which leads to a reduction in agency problems and information asymmetry between owners and managers. Besides, large firms have enough resources to cover the costs of disclosing more risk information (Elzahar & Hussainey, 2012). This result is supported by Elzahar & Hussainey (2012) and Netti (2018) who found that there is a positive significant association between firm size and risk disclosure. In addition, it was found that there is a positive significant association between firm leverage and risk disclosure (P = 0.024 < 0.05 level of significance). According to the agency theory, agency costs are higher in highly leveraged firms. To reduce these costs, firms need to disclose more risk information to satisfy the needs of users (Elzahar & Hussainey, 2012). In addition, the higher the debt, the higher the risk, consequently firms need to disclose more risk information to satisfy the needs of users. This result is consistent with Netti (2018) who found that there is a positive association betweenfirm leverage and risk disclosure.

In conclusion, the researcher found that the seventh hypothesis is accepted as consistent with the expected hypothesis. On the other hand, the sixth, eighth, ninth, and tenth hypotheses are rejected compared to the expected hypotheses.

Table 4: Panel Regression Results of the Second Model

RD	Coefficient	Robust Std. Err.	z	P> |z|	[95% Confidence Interval]	
BSIZE	-0.2497047	0.1857808	-1.34	0.179	-0.6138284	0.114419
BIND	0.4202988	0.215713	1.95	0.05	-0.002491	0.8430885
BMEETS	-0.0949705	0.056803	-1.67	0.095	-0.2063023	0.0163614
BEXP	-0.2436684	0.2771104	-0.88	0.379	-0.7867947	0.2994579
CBDS	0.1236127	0.3701168	0.33	0.032	-0.6018029	0.8490283
FSIZE	0.0607262	0.1224669	0.50	0.001	-0.1793045	0.3007568
FLEV	0.0549053	0.1257148	0.44	0.024	-0.3013018	0.1914911
_cons.	11.03403	2.617587	4.22	0.000	5.903649	16.1644
Wald chi2 (7) = 5.19Prob > chi2 = 0 Overall R^2 = 0.3014						

<u>Research Results</u>:

<u>Concerning empirical regression model (1), the results showed</u>:

- There is a negative insignificant association between board size and firm performance.
- There is a positive significant association between board independence and firm performance.
- There is a positive insignificant association between board meetings and firm performance.

- There is a negative insignificant association between board expertise and firm performance.
- There is a positive significant association between board of directors' connections and firm performance.

Regarding empirical regression model (2), the results showed:

- There is a negative insignificant association between board size and risk disclosure.
- There is a positive significant association between board independence and risk disclosure.
- There is a negative insignificant association between board meetings and risk disclosure.
- There is a negative insignificant association between board expertise and risk disclosure.
- There is a positive significant association between board of directors' connections and risk disclosure.

Study Recommendations:

Based on the current study, the researcher can provide the following recommendations:

First: The last Egyptian Corporate Governance Code (ECGC) in its third edition (2016) emphasizes the following items: (1) the role of the board of directors as a major mechanism in managing and directing the company, in addition to its main responsibility for implementing governance principles; (2) the optimal composition of the board of directors in terms of diversity and responsibility; (3) the governmental relations and participations of companies; and finally (4) the establishment of a separate Risk Management Committee (RMC) which helps the board in accomplishing its functions and duties. Accordingly, the researcher recommends that these items should be presented and disclosed in the Egyptian Accounting Standard No. (1) "Financial Statements' Presentation" in order to ensure the possibility of comparing the company's future financial statements with its previous financial statements and with the financial statements of other companies.

Second: According to the rules of listing on the Egyptian Stock Exchange (EGX), the researcher recommends the companies for preparing a separate section in the financial statements in order to report risk disclosure information such as the Management Discussion and Analysis (MD&A) section.

Third: The researcher recommends the regulators for monitoring the application of the Egyptian Corporate Governance Code (2016) in order to enhance the risk disclosure information and impose penalties against companies that violate the code.

Suggestions for Future Research:

Based on the current study, the researcher can provide the following suggestions. First, future research may extend the current study through examining the impact of board of directors' characteristics on both firm performance and risk disclosure for a longer time period. Second, future research may explore the impact of board of directors' characteristics on both firm performance and risk disclosure in the financial sector.

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