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Article

The Interaction Effect of Nomination Committee's Effectiveness on Board of Directors' Characteristics and Firm Performance

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Abstract: This study aimed to examine the interaction effect of the nomination committee's effectiveness on the board of directors' characteristics and firm performance (measured by return on assets and earnings per share). The nomination committee was scored for committee separation, size, independence, meeting frequency, and the number of female directors. The study selected all listed firms on the Bahrain Bourse for two years, 2020 and 2021, using ordinary least-squares regression to examine the relationship. The results showed that the interaction of the nomination committee with some characteristics of the board of directors had a significant impact on firm performance. With the interaction of the nomination committee, board meeting frequency became significantly positively associated with firm performance as measured by return on assets and earnings per share, as opposed to the insignificant results found in the direct relationship. Similarly, with the interaction of the nomination committee, the number of female directors became more significantly positively associated with firm performance using the measurement of return on assets, while it became significantly positively associated with firm performance using earnings per share, compared to an insignificant positive impact found in the direct relationship. The results show that there is a need to re-evaluate the role of the board of directors and strengthen its effectiveness. This study is the first to alert policymakers, businesses and their stakeholders, and researchers to the significance of having an effective nomination committee, which could play an important role in enhancing the board of directors' effectiveness and hence firm performance. It makes a significant contribution to the literature by providing empirical evidence on the interaction impact of NC (as a score) on BOD characteristics and firm performance.

Keywords: corporate governance; board of directors; nomination committee; independence; gender equality; performance



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1. Introduction

The goal of a business is to increase stakeholder wealth (Gharaibeh and Qader 2017) through maximizing firm performance. The concept of "firm performance" holds a great deal of weight in the business world. According to Abobakr (2017), a company's success is measured by its efficiency, its effectiveness, and the value it provides to its customers and investors. In addition, performance is used as a gauge of the company's success in achieving its goals. As a result, organizations need to consistently evaluate their performance and the elements that affect it. Performance, according to another definition, is all about how well a company uses its resources to achieve its goals (Handa 2018).

Worldwide financial scandals and fraud have significantly impacted economies around the world and led to the failure of large firms (Al-Absy 2020, 2022a, 2022b). The financial crisis exposed serious flaws in firm performance, as well as several problems including the manipulation of earnings and fraudulent business activities. Furthermore, the financial crisis revealed serious flaws in corporate governance processes, demonstrating the inability of financial reporting standards to provide sufficiently robust checks on company procedures.

Issues related to firm performance remain under scrutiny. According to [Almaqтари et al. \(2020\)](#), prior studies have raised serious concerns about financial performance. Investors, stakeholders, and policymakers all rank firm performance highly among their list of top concerns. Current and potential investors alike utilize assessments of firm performance to decide whether or not to maintain or acquire holdings; as stated by [Abobakr \(2017\)](#), there is a need to know if the business is successful before committing any capital to it. According to agency theory, there is a conflict of interest between managers and shareholders, where managers are looking out for their own interests instead of maximizing those of shareholders.

Therefore, there was an immediate requirement for new and robust corporate governance procedures, which led to the formation of several committees, each responsible for a distinct function. Examples include the audit committee, the remuneration committee, and the nomination committee (NC). The regulations also have a significant role in the effectiveness of corporate governance. There are several approaches to corporate governance, with the principle-based model the one most often adopted internationally.

The majority of the available information points to poor corporate governance as a major cause of financial and business scandals ([Garrett 2020](#)). Hence, firm performance may be enhanced using a variety of metrics, including corporate governance traits. The board of directors (BOD) is an important mechanism for corporate governance, the effectiveness of which depends on its committees. As a result, academics in the field of accounting have started paying more attention to the question of how to determine whether features of corporate governance boost company success. Accordingly, several nations have legislated corporate governance standards as a preventive measure against economic collapse and fraud.

The NC is a crucial part of the BOD that affects the company's operations. The functions of the NC can be summarized as board recruitment and succession planning, board evaluation, linking company strategy to recruitment, induction, training, and the development of new management ([Chaudhry et al. 2020](#)). Whereas the shareholders must approve the company's nomination rules for the BOD and senior management, the NC members are responsible for finding qualified individuals to occupy executive board posts and for approving the company's corporate governance rules, processes, and standards ([CBB 2010](#)).

Because of this, the effectiveness of the BOD and the company will depend on the work of the members of the NC. The appointment of directors should be reviewed and managed by the NC ([Harymawan et al. 2020](#)). Further, the size of the board will be affected by the NC's policy. Moreover, the tenure of directors could affect their role and thereby the firm performance. Hence, the NC plays an important role in reviewing and checking the policies surrounding the appointment of directors as well as evaluating the independence of directors. Tension between management and stockholders may be mitigated with the help of a well-functioning NC. In certain regions, such as Bahrain, firms are required to establish an NC consisting of at least three people who meet at least twice yearly.

Previous studies have extensively examined the relationship between the BOD's characteristics and firm performance. However, the results are mixed and differ between countries. This inconsistency may reflect the effects of some other factors related to the selection of the BOD, including the effectiveness of the NC. In contemporary organizations, the BOD is just one control mechanism used to balance the interests of management and shareholders. Some additional control mechanisms are suggested by an agency theory approach ([Ruigrok et al. 2006](#)).

The efficiency of the board's monitoring powers is dependent on high standards used in the appointment of directors. According to [Walther and Morner \(2014\)](#), very little is known about how and on what basis the NC improves the selection process and reduces selection inefficiencies. The dominance of the board chairman or chief executive officer (CEO) over nomination has become an essential issue, especially when insider directors heavily influence the selection of directors, as is the case in some Bahraini firms.

To the best knowledge of the researchers, no previous work has empirically investigated the interaction effect of the NC's effectiveness on BOD characteristics and firm performance. Hence, the current study aimed to examine the interaction impact of the NC and BOD characteristics, namely board size, independence, meeting frequency, and female representatives on the board, on firm performance, measured by return on assets (ROA) and earnings per share (EPS).

This paper contributes to the body of knowledge by providing an empirical study on the effect of the NC on the BOD's role in enhancing firm performance. The research applies two theories, agency and resource dependence, which claim that an effective NC could improve the monitoring role of the BOD in enhancing the company's activities and operations and thereby boost firm performance. The study is considered very important for a country such as Bahrain in which, similar to other developing countries, many board directors are non-independent, or are family members. Focusing on the context of Bahrain is important as Bahrain's economy is "backboned" by family companies, which contribute more than 99% of the growth in the country's gross domestic product (GDP). In addition, family enterprises play a significant role in Bahrain's commercial ecosystem, which helps to foster a welcoming business environment (Palalić et al. 2022).

The study will help policymakers and regulators to evaluate the role of the NC, which currently seems to be ineffective and in need of improvement. It has been argued by several researchers, e.g., Mohammad et al. (2016), that the criteria for choosing directors needs to be updated by authorities. Further, Al-Absy et al. (2018) stressed the importance of increasing the independence and efficacy of board committees, particularly the NC. The findings will also be helpful to the sector in general and the Bahraini context. Firms will be able to adapt as a result and profit accordingly. Future researchers will benefit from the study using the data and findings to their advantage.

2. Literature Review and Hypothesis Development

According to Ludwig and Sassen (2022), "corporate governance" refers to a company's established practices, policies, and laws. It refers to the process through which a firm strikes a balance between the interests of its shareholders, senior management, customers, vendors, lenders, regulators, and citizens (Zaman et al. 2022). Several groups are included in the purview of good corporate governance. It may refer to either the processes by which a company is guided and controlled, or the measures used to guarantee that a business adheres to a standard established by outsiders (Du Plessis et al. 2018).

Corporate governance is now a topic with broad implications. As more businesses undergo significant alterations as a result of the confluence of technical advancement, sociopolitical shifts, and economic trends toward increasing globalization, corporate governance is a subject of growing relevance in developing countries (Al-Homaidi et al. 2019). The code of corporate governance in the Kingdom of Bahrain states that the company must be headed by an effective, qualified, and expert board. In terms of the composition of the BOD, public joint stock companies must have no fewer than five directors, and closed joint stock companies should have at least three directors. The maximum number of directors is 15. The other requirements include that the chairman must be an independent director. Further, it indicates that the directors and senior officers must receive fair and reasonable compensation from the company. This is accomplished by creating a remuneration committee that contains three independent or non-executive directors (CBB 2010).

2.1. Board of Directors and Firm Performance

The BOD plays a major role in the success of the company. The Bahraini code points out that the board must specify job titles, powers, tasks, and responsibilities as well as an effective management structure for the organization. This could be achieved by appointing and supervising the company executives, who oversee managing and running daily operations and reporting to the board. It could also be achieved by developing internal regulations specifying each senior officer's position title, powers, tasks, and internal reporting

obligations in collaboration with the NC and in agreement with the CEO. However, the officers of the management structure must include the CEO, the chief financial officer, a secretary, and an internal auditor. Moreover, the BOD's additional authorities and duties include reviewing and approving the succession plan once a year at a minimum. In addition, the BOD may impose any restrictions it sees fit on the powers of the CEO or any other officer. Previous studies have extensively examined the relationship between the BOD's mechanisms and firm performance. However, the results are mixed and inconclusive.

2.2. Nomination Committee and Firm Performance

National codes of corporate governance require every company to have an NC. Each of these codes has somewhat different requirements for NCs. Several codes, including those in Australia, Bahrain, Ireland, Mauritius, the United Kingdom, and Singapore, specify at least three NC members; in Russia, Australia, Bahrain, Ireland, Mauritius, and Singapore, the majority of directors should be independent. Codes of corporate governance in some countries, such as Thailand, demand that an NC should consist wholly of independent directors, while others require that the majority of NC directors should be non-executive, e.g., Singapore, the Netherlands, Mauritius, and Malaysia (Al-Absy et al. 2018).

A study by Ruigrok et al. (2006) discovered that companies with an NC are more likely to have more independent and international directors on their boards, but not more female board members. Furthermore, the existence of an NC is unrelated to board educational diversity but is linked to a higher level of nationality diversity. According to Kallamu (2016), executive presence on the NC negatively affects accounting returns, whereas the financial knowledge of directors on the committee positively affects accounting returns. Several previous studies, e.g., Agyemang-Mintah (2015) and Lam and Lee (2012), have confirmed that the existence of an NC can significantly positively influence firm performance. Ruigrok et al. (2006) discovered that the membership of the NC affects the nomination of independent and international directors but not female directors. Guo and Masulis (2015) demonstrated how the independence of the NC promotes more stringent CEO oversight. According to DeFond et al. (2005), the market has responded favorably to committee appointments that match director skills.

2.3. Interaction Effect of Nomination Committee on Board Size

Numerous studies have examined the impact of board size on firm performance. The likelihood of independent directors having corporate or financial experience may be higher on a larger board. If true, a bigger board might be more effective in boosting firm performance. Several studies have found a significant positive relationship between board size and firm performance, confirming that higher board size increases firm performance (Ahmed and Hamdan 2015; Bansal and Sharma 2016; Danoshana and Ravivathani 2019; Johl et al. 2015; Kalsie and Shrivastav 2016; Mishra and Kapil 2018; Riyadh et al. 2019; Saleh and Islam 2020; Scholtz and Kieviet 2018; Shahzad et al. 2015; Sobhan 2021; Yasser et al. 2017).

However, it has been argued that mid-sized boards encourage better responsibility and that smaller boards are simpler to manage (Lane et al. 2006). Mashayekhi and Bazaz (2008), in alignment with several earlier studies, found a clear adverse relationship between board size and firm performance. Moreover, some other research has found no relationship between board size and firm performance (Abdulsamad et al. 2018; Al-Matari 2019; Al-Shammari and Al-Saidi 2014; Almarayeh 2021; Atty et al. 2018; Chua and Ab Razak 2018; Freihat et al. 2019; Ganesan et al. 2018; Getachew 2014; Horváth and Spirollari 2012; Marashdeh 2014; Roffia et al. 2022; Saleh 2016).

The conflict of the results of previous studies suggests that there may be a factor that augments or diminishes the role of board members in increasing or decreasing firm performance. Hence, it is suggested that the NC plays a major role in the effectiveness of the board members. According to Agyemang-Mintah (2015) and Lam and Lee (2012), the existence of an NC has a positive and statistically significant association with firm performance. Hence, an effective NC will strengthen the effectiveness of the board and

determine the size of board that will effectively contribute toward the company and hence increase firm performance. A mechanism of board size and NC effectiveness is proposed by agency and resource dependence theories, which could reduce the agency problem and hence minimize information asymmetry. Therefore, the following hypothesis is put forward:

H₁: *The interaction effect of NC's effectiveness on board size and firm performance is significant and positive.*

2.4. Interaction Effect of Nomination Committee on Board Independence

The relationship between board independence and firm performance has been thoroughly examined in the literature. Previous findings suggest that independent directors actively participate in the company and successfully oversee the managers, enhancing their performance. Hence, previous research has demonstrated a significant positive association between board independence and firm performance (Abdulsamad et al. 2018; Ahmed and Hamdan 2015; Almarayeh 2021; Chua and Ab Razak 2018; Makhoul et al. 2017; Mashayekhi and Bazaz 2008).

However, some other research has discovered a negative association between the board's independence and firm performance (Bansal and Sharma 2016; Fauzi and Locke 2012; Horváth and Spirollari 2012; Marashdeh 2014). According to these studies, having more independent directors on the board may decrease the board's effectiveness in accomplishing organizational goals, negatively impacting firm performance.

Moreover, some other studies have found no relationship between board independence and firm performance (Al-Matari 2019; Atty et al. 2018; Freihat et al. 2019; Ganesan et al. 2018; Getachew 2014; Johl et al. 2015; Riyadh et al. 2019; Roffia et al. 2022; Saleh 2016; Shahzad et al. 2015; Sobhan 2021). The conflict of results of previous studies suggests that there may be a factor that affects the role of board independence in increasing or decreasing firm performance. An important factor that could be considered is the NC. It is thought that the NC increases the board's effectiveness by controlling its makeup, such as by increasing director qualifications and board independence (Ruigrok et al. 2006). According to Ruigrok et al. (2006), NC existence is positively related to the number of independent directors serving on the board. Based on this and with the support of agency and resource dependence theories, the study suggests that NC plays a major role in the effectiveness of board independence. Therefore, the following hypothesis was proposed:

H₂: *The interaction effect of NC's effectiveness on board independence and firm performance is significant and positive.*

2.5. Interaction Effect of Nomination Committee on Board Meeting Frequency

Previous studies have comprehensively investigated the influence of board meeting frequency on firm performance. It is argued that more frequent board meetings enable the board to interact and oversee organizational activities, thereby improving the success of the company; thus, more frequent board meetings result in better financial outcomes. Some previous studies have found a significantly positive relationship (Freihat et al. 2019; Sobhan 2021).

However, other research has shown that higher board meeting frequency does not always improve firm performance; some other studies have found a significant negative relationship between board meeting frequency and firm performance (Abdulsamad et al. 2018; Danoshana and Ravivathani 2019; Johl et al. 2015). Further, others have found no relationship between the frequency of board meetings and firm performance (Al-Matari 2019; Aryani et al. 2017; Atty et al. 2018; Horváth and Spirollari 2012; Makhoul et al. 2017; Sobhan 2021).

The contradictory findings of these earlier papers suggest that there is a factor that can raise or decrease the board's contribution to improving or worsening firm performance. As a result, the study contends that the NC is crucial to the success of board meetings in

increasing firm performance. An effective NC will ensure that directors communicate well with the company and participate in all company activities and meetings, and that directors will evaluate the directors' performance and attendance. Hence, directors appointed in a company that has an effective NC will significantly contribute to the company and will thereby improve firm performance. Based on the above discussion and in line with agency and resource dependence theories, the following hypothesis was created:

H₃: *The interaction effect of NC's effectiveness on board meeting frequency and firm performance is significant and positive.*

2.6. Interaction Effect of Nomination Committee on Number of Female Directors

One board strategy that addresses the conflict of interest between managers and shareholders is board gender diversity. Previous work has comprehensively investigated the influence of female directors on firm performance. According to several studies, female directors are highly associated with improved firm performance (Adams and Ferreira 2009; Bin Khidmat et al. 2020; Campbell and Mínguez-Vera 2008; El-Khatib and Joy 2021; Getachew 2014; Khan and Abdul Subhan 2019; Liu et al. 2014; Scholtz and Kieviet 2018; Sobhan 2021).

Others, on the other hand, have discovered that women on corporate boards are significantly related to lower firm performance (Al-Shammari and Al-Saidi 2014; Darmadi 2011; Fauzi and Locke 2012; Riyadh et al. 2019; Wellalage and Locke 2013). Further, some scholars have found no relationship between female directors and firm performance (Almarayeh 2021; Atty et al. 2018; Ganesan et al. 2018; Horváth and Spirollari 2012; Khadash and Washali 2019; Saleh and Islam 2020; Wang and Clift 2009; Yusoff et al. 2013).

Preceding studies' inconsistent findings indicate that there is a factor that could increase or diminish the board's influence on firm performance. As a result, it is postulated that the NC is critical to the effectiveness of female directors in improving firm performance. An effective NC will ensure the equality of the board by appointing female directors. Hence, an effective NC and gender diversity on the board will significantly contribute to the firm's operation and activities and thereby increase firm performance. Based on agency and resource dependence theories, a mechanism of female directors and effective NC will reduce the agency problem and align the interests of managers with those of shareholders. As a result, the following hypothesis was created:

H₄: *The interaction effect of NC's effectiveness on number of female directors and firm performance is significant and positive.*

3. Research Design

3.1. Population and Sample Selection Procedures

The study looked at all companies listed on the Bahrain Bourse for 2020 and 2021. These years were selected to reflect recent corporate governance practices and their effect on firm performance. The research used all 42 listed companies' figures as a sample, which meant a two-year period of monitoring and 84 firm observations. This was a quantitative study that relied on secondary data. The data were manually extracted from the firms' annual reports, which were published by the Bahrain Bourse. In terms of corporate governance factors, data were collected from the firms' annual reports on corporate governance, published on their websites.

3.2. Variable Measurement

The aim of the research was to examine the interaction impact of NC and BOD characteristics on firm performance. The study used ROA and EPS as measurements of firm performance. The BOD characteristics examined were board size, independence, meeting frequency, and the number of female directors. NC was scored for its separation, size, independence, meeting frequency, and number of female directors. Variables related to the audit committee characteristics were controlled, such as size, independence, and

meeting frequency. Moreover, some other control variables were put in place related to firm-specific characteristics such as total assets, leverage, industry, firm age, audit firm, and cash flow from operation. Table 1 presents more detail about the variables.

Table 1. Summary of Variable Measurements and Definitions.

Variable	Acronym	Measurement
Return on Assets	ROA	Net income divided by total assets.
Earnings Per Share	EPS	Ratio of net profit after deducting all taxes divided by outstanding equity shares.
NC score	NCscore	The sum of five components (NC size, independence, meeting frequency, female directors, and separation of the committee) ranging from 0–5, with 0 indicating the lowest effectiveness and 5 the highest effectiveness of the NC.
Board Size	BSIZE	Number of directors on the board.
Board Independence	BIND	Number of independent members on the board.
Board Meeting Frequency	BMEET	Number of BOD meetings in the year.
Board Female Directors	BGEN	Number of female directors on the board.
Audit Committee Size	ACSIZE	Number of members of the audit committee.
Audit Committee Independence	ACIND	Number of independent directors serving on the audit committee.
Audit Committee Meeting Frequency	ACMEET	Number of meetings of the audit committee in the year.
Total Assets	TA	Firm's total assets, including both current and long-term assets.
Leverage	LEV	Ratio of total debt to total assets.
Industry	INDU	Scored 1 if the firm belongs to a particular industry, otherwise 0.
Firm Age	FA	Number of years since establishment.
Audit Firm	Big4	Scored 1 if the firm's auditor is a Big Four audit firm, otherwise 0.
Cash Flow from Operation	NCFO	Scored 1 if the firm has positive cash flow from operation, otherwise 0.

3.3. Regression Models

The study used ordinary least-squares (OLS) regression to examine the interaction impact of the NC and BOD characteristics on firm performance. The regression was controlled by different control variables related to audit committee and firm-specific characteristics. First, the following direct regression was run to find the direct relationship between BOD characteristics and firm performance:

$$ROA_{it} = \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \beta_3 BMEET_{it} + \beta_4 BGEN_{it} + \beta_5 ACSIZE_{it} + \beta_6 ACMEET_{it} + \beta_7 ACIND_{it} + \beta_8 TA_{it} + \beta_9 LEV_{it} + \beta_{10} INDU_{it} + \beta_{11} FA_{it} + \beta_{12} Big4_{it} + \beta_{13} NCFO_{it} + \epsilon_i \text{ (Model 1)}$$

$$EPS_{it} = \beta_1 BSIZE_{it} + \beta_2 BIND_{it} + \beta_3 BMEET_{it} + \beta_4 BGEN_{it} + \beta_5 ACSIZE_{it} + \beta_6 ACMEET_{it} + \beta_7 ACIND_{it} + \beta_8 TA_{it} + \beta_9 LEV_{it} + \beta_{10} INDU_{it} + \beta_{11} FA_{it} + \beta_{12} Big4_{it} + \beta_{13} NCFO_{it} + \epsilon_i \text{ (Model 2)}$$

Then, the following interaction regressions were run to assess the interaction impact of the NC and BOD characteristics on firm performance:

$$ROA_{it} = \beta_1 BSIZE*NCscore_{it} + \beta_2 BIND*NCscore_{it} + \beta_3 BMEET*NCscore_{it} + \beta_4 BGEN*NCscore_{it} + \beta_5 ACSIZE_{it} + \beta_6 ACMEET_{it} + \beta_7 ACIND_{it} + \beta_8 TA_{it} + \beta_9 LEV_{it} + \beta_{10} INDU_{it} + \beta_{11} FA_{it} + \beta_{12} Big4_{it} + \beta_{13} NCFO_{it} + \epsilon_i \text{ (Model 3)}$$

$$EPS_{it} = \beta_1 BSIZE*NCscore_{it} + \beta_2 BIND*NCscore_{it} + \beta_3 BMEET*NCscore_{it} + \beta_4 BGEN*NCscore_{it} + \beta_5 ACSIZE_{it} + \beta_6 ACMEET_{it} + \beta_7 ACIND_{it} + \beta_8 TA_{it} + \beta_9 LEV_{it} + \beta_{10} INDU_{it} + \beta_{11} FA_{it} + \beta_{12} Big4_{it} + \beta_{13} NCFO_{it} + \epsilon_i \text{ (Model 4)}$$

4. Results and Discussion

4.1. Descriptive Statistics

Table 2 shows the mean values of firm performance, the dependent variable of the study. The mean value of ROA was 1.96% with a minimum of −22.97% and a maximum of 25.79%. The mean value of EPS was 0.020% with a minimum of −0.179% and a maximum of 0.319%.

Regarding BOD characteristics, Table 2 shows that the mean number of directors on the board was nine. The minimum was six, and the maximum was 13. On average, four members were independent, with a minimum value of zero and a maximum value of eight. The average number of BOD meetings in a year was around six. The mean number of female directors was 0.55, reflecting the low representation of females on the boards.

Table 2. Descriptive Statistics for Dependent Variable Measurements.

Variable	Mean	Minimum	Maximum
ROA	1.960	−22.97	25.79
EPS	0.020	−0.179	0.319
BSIZE	9.464	6	13
BIND	4.083	0	8
BMEET	5.821	3	15
BGEN	0.548	0	4
NCSIZE	3.667	2	6
NCIND	2.060	0	4
NCMEET	3.345	1	8
NCGEN	0.167	0	1
ACSIZE	3.738	3	7
ACMEET	4.917	1	13
ACIN	2.202	0	5
TA	2,133,867	3298	21,800,000
LEV	18.122	0	59.41
FA	36.738	3	138

In terms of NC characteristics, Table 2 shows that the mean value of NC size was 3.667 members. This means that the average listed firm in Bahrain had around four members on the NC. The minimum value was two directors on the NC; no NC included fewer than two members. The largest NC size was six members.

In terms of NC independence, the mean was 2.06 members, indicating that an average listed firm in Bahrain had around two independent members on its NC. The maximum value of NC independence was four members while the minimum was zero, indicating that some firms had no independent members on the NC.

As for NC meeting frequency, Table 2 shows a mean value of 3.345, which indicates that the average number of annual NC meetings for firms listed on the Bahrain Bourse was three. The minimum value was one, while the maximum was eight.

Moving to the number of females on the NC, Table 2 shows the mean at 0.167, indicating that the average number of females on the NC for companies listed on the Bahrain Bourse was low. The maximum number of females on the NC was one, and the minimum was zero. This means that some firms had no females on the NC.

Table 3 shows that only five firm observations (5.95%) had a separate NC; most of the firm observations (94.05%) did not separate the NC. Regarding the Big Four audit firms, the majority of firm observations (82.14%, $n = 69$) had financial statements audited by a Big Four audit firm. Overall, 15 firms (17.86%) did not have their financial statements audited by a Big Four firm. Most of the companies (88.10%, $n = 74$) did not belong to industry sectors, while 10 firms (11.90%) were considered to specialize in the manufacturing industry. As for the net cash flow from operating, 22 firm observations (26.19%) had a negative value, whereas 62 firm observations (73.81%) had a positive value.

Table 3. Descriptive Statistics for Dummy Control Variables.

Variable	Yes		No	
	No	%	No	%
SNC	5	5.95	79	94.05
Big4	69	82.14	15	17.86
INDU	10	11.90	74	88.10
NCFO	62	73.81	22	26.19

4.2. Diagnostic Tests

The study used the winsorization approach to limit the influence of outliers (Al-Absy et al. 2019, 2020a, 2020b). The observations of variables in this investigation

with the most severe outliers, such as EPS and firm age, were weighted by converting the value of observations from their original value to the normal value. Further, the skewness and kurtosis descriptive numerical approaches were used to assess the normality of each variable (Hair et al. 2013). Table 4 shows that the dataset of individual variables exhibited no significant violations of the normality assumption, with the skewness and kurtosis not surpassing the ± 3 and ± 10 thresholds, respectively (Kline 2015).

Table 4. Skewness and Kurtosis.

Variable	Skewness	Kurtosis
ROA	−0.516	8.991
EPS	−0.527	8.403
BSIZE	0.146	2.548
BIND	0.334	2.561
BMEET	1.798	8.075
BGEN	1.540	5.495
ACSIZE	1.319	4.519
ACMEET	1.673	7.215
ACIND	−0.103	3.156
TA	0.353	2.137
LEV	0.937	2.777
FA	−0.183	1.924
Big4	−1.679	3.817
INDU	2.353	6.535
NCFO	−1.083	2.173

Regarding multicollinearity, Table 5 displays the correlation matrix and variance inflation factor values. The correlation matrix shows several statistically significant correlations between variables. The significant correlations between the variables, however, did not exceed the threshold of ± 0.80 . Therefore, there was no indication of serious multicollinearity issues. Variance inflation factor (VIF) was the second strategy used to evaluate multicollinearity. None of the VIF values in Table 5 are greater than four. As a result, the multicollinearity issue was solved.

Table 5. Correlation Matrix and Variance Inflation Factor of Study Variables.

Variable	ROA	EPS	BSIZE	BIND	BMEET	BGEN	ACSIZE	VIF
ROA	1.000							
EPS	0.7321 ***	1.000						
BSIZE	−0.105	0.012	1.000					1.78
BIND	−0.058	−0.036	0.166	1.000				1.85
BMEET	0.012	0.055	0.169	0.155	1.000			1.88
BGEN	0.123	0.065	0.3677 ***	0.3106 ***	−0.013	1.000		1.59
ACSIZE	0.098	0.2071 *	0.4593 ***	0.107	0.094	0.115	1.000	1.74
ACMEET	0.008	0.046	0.2071 *	0.046	0.3434 ***	0.064	0.001	1.37
ACIND	0.154	0.174	0.2605 **	0.5423 ***	0.143	0.147	0.4133 ***	2.09
TA	0.100	0.130	0.4679 ***	0.102	0.3318 ***	0.2768 **	0.4251 ***	2.13
LEV	0.095	−0.062	−0.007	−0.020	0.123	0.2739 **	−0.016	1.59
FA	0.002	−0.026	0.1960 *	0.007	0.2154 **	0.059	0.2058 *	1.49
Big4	0.175	0.159	−0.053	0.036	0.2732 **	−0.107	0.071	1.40
INDU	0.2452 **	0.2173 **	−0.137	−0.1851 *	−0.2092 *	−0.067	0.025	1.62
NCFO	0.3548 ***	0.2098 *	0.018	−0.058	0.125	0.035	−0.023	1.25
Variables	ACMEET	ACIND	TA	LEV	FA	Big4	INDU	NCFO
ACMEET	1.000							
ACIND	0.104	1.000						
TA	0.3131 ***	0.3898 ***	1.000					
LEV	0.2523 **	−0.019	0.2528 **	1.000				
FA	0.149	0.089	−0.047	−0.2006 *	1.000			
Big4	0.065	−0.063	0.020	−0.151	0.065	1.000		
INDU	0.098	0.037	0.068	0.174	0.152	0.171	1.000	
NCFO	−0.028	0.040	0.038	−0.134	0.087	0.2878 ***	0.2190 **	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In term of heteroscedasticity, the Breusch–Pagan/Cook–Weisberg test was used to assess the existence of heteroscedasticity on the study’s models (Baum et al. 2003). Table 6 shows that the p -value of all models was higher than the level of 0.05. Therefore, the data from these models were not affected by heteroscedasticity.

Table 6. Heteroscedasticity Tests.

Test	Model	Model	Chi ²	Prob > Chi ²	H0 (Null)
Breusch– Pagan/Cook– Weisberg	ROA	1	2.02	0.1555	Accepted
	ROA	2	0.64	0.4250	Accepted
	EPS	3	0.49	0.4847	Accepted
	EPS	4	0.45	0.5001	Accepted

Note: H0: no heteroscedasticity problem.

4.3. Regression Results

Table 7 shows the results of OLS regression for the models. All models were fit and significant, except for model 2. Regarding the R-squared values, the percentage was accepted for all models where it was between 20% and 31%. This means that the study included most of the variables that affect firm performance.

In terms of direct impact of BOD characteristics on firm performance, Table 7 shows that board size had a significant negative relationship with firm performance, assessed by ROA. This result is in conflict with the agency and resource dependence theories. It suggests that a high number of board members may not effectively increase firm performance. The result is in line with some previous studies, such as that of Al-Homaidi et al. (2019), which found that board size was negatively associated with ROA. In terms of EPS, the result showed that there was no significant relationship between board size and firm performance. This result is inconsistent with agency and resource dependence theories. It suggests that higher numbers of directors may not reflect high proficiency in dealing with firm operations and increasing firm value.

Further, the results showed that board independence and meeting frequency had no significant relationship with firm performance, measured either by ROA or EPS. This suggests that independent directors may not play their role effectively or may not have been provided with sufficient information by the managers regarding the firm’s activities. This may be why they did not significantly affect firm performance. The results are inconsistent with agency and resource dependence theories, which suggest that board independence and meeting frequency should increase the firm value. In terms of number of female directors, the results showed that female directors had a significant positive impact on firm performance, assessed by ROA. This result is consistent with agency and resource dependence theories, which suggest that female directors may enhance the effectiveness of the board in increasing the firm value. Measured by EPS, however, the results showed that female directors had no impact on firm performance.

Regarding the interaction impact of NC and BOD characteristics on firm performance, Table 7 shows that the results were more significant. The board size with the interaction of the NC had a significant negative impact on firm performance as measured by ROA at level 5% instead of level 10% in the direct relationship. Further, board size with the interaction of NC had a significant negative impact on firm performance using EPS, instead of the insignificant relationship in the direct relationship. This result is in line with agency and resource dependence theories. It supports the study hypothesis, suggesting that the interaction of board size and the NC has a significant positive association with firm performance. It indicates that the NC plays a major role in the effectiveness of the board. An effective NC can effectively nominate the proper person to the board and ensure that the board size fits the firm’s strategy and aligns with its objective, hence increasing firm performance.

Table 7. Regression Results Using OLS.

Variable	Direct Impact		Interaction Impact	
	Model 1	Model 2	Model 3	Model 4
	ROA	EPS	ROA	EPS
BFSIZE	−0.871 * (0.484)	−0.00299 (0.00338)		
BIND	−0.645 (0.452)	−0.00386 (0.00316)		
BMEET	−0.0440 (0.451)	0.00326 (0.00315)		
BGEN	1.701 * (1.013)	0.0113 (0.00708)		
BFSIZE*NCscore			−0.300 ** (0.125)	−0.00182 ** (0.000861)
BIND*NCscore			−0.160 (0.164)	−0.00151 (0.00113)
BMEET*NCscore			0.261 * (0.147)	0.00256 ** (0.00101)
BGEN*NCscore			1.399 *** (0.485)	0.00877 ** (0.00334)
ACSIZE	0.818 (0.948)	0.0112 * (0.00662)	0.857 (0.904)	0.0128 ** (0.00622)
ACMEET	0.0582 (0.420)	0.00187 (0.00294)	0.0898 (0.399)	0.00277 (0.00275)
ACIND	1.606 (0.964)	0.00778 (0.00673)	1.708 * (0.908)	0.00863 (0.00625)
TA	−0.0290 (0.437)	−0.00155 (0.00305)	−0.247 (0.396)	−0.00217 (0.00273)
LEV	0.0262 (0.0472)	−0.000488 (0.000329)	−0.0140 (0.0461)	−0.000707 ** (0.000317)
FA	−0.0159 (0.0515)	−0.000588 (0.000359)	−0.0441 (0.0496)	−0.000746 ** (0.000342)
Big4	1.918 (2.003)	0.00487 (0.0140)	1.294 (1.950)	0.000448 (0.0134)
INDU	1.601 (2.548)	0.0306 * (0.0178)	5.057 ** (2.281)	0.0445 *** (0.0157)
NCFO	4.278 ** (1.647)	0.0103 (0.0115)	3.326 ** (1.624)	0.00800 (0.0112)
Constant	0.796 (5.167)	0.000542 (0.0361)	−2.378 (4.727)	−0.00358 (0.0325)
F Value	1.94	1.34	2.42	1.99
Sig	0.0396	0.2121	0.0092	0.0342
R-squared	0.265	0.199	0.310	0.270
Firms	42	42	42	42
Observations	84	84	84	84

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In terms of board independence, its interaction with the NC seems not to affect its impact, as the result was unchanged; with the interaction of the NC, board independence still had an insignificant impact on firm performance, measured either by ROA or EPS. Regarding board meeting frequency with the interaction of the NC, the result had a significantly positive association with firm performance for both measurements, ROA and EPS, as opposed to the insignificant results found in the previous models 1 and 2 (the direct impact). This result supports the study hypothesis, which proposed that the interaction of board meeting frequency and the NC has a significant positive association with firm performance. Further, it is in line with agency and resource dependence theories.

Concerning the number of female directors on the board, with the interaction of the NC, the result became more significantly positively associated with firm performance measured by ROA. With the interaction of the NC, the level of significance changed from 10% (for model 1, the direct impact) to 1% for the interaction impact. Further, the number of female directors with the interaction of the NC became significantly positively associated with firm performance measured using EPS; with the interaction of the NC, the result changed from an insignificant positive impact (model 2, the direct impact) to a significant

positive impact (interaction impact). This finding is consistent with the study's hypothesis, which states that there is substantial positive association between firm performance and the interaction of the number of female directors and the NC. It is also consistent with the theories of agency and resource dependence.

5. Robustness Tests

5.1. Including Year Dummy Variable

The study repeated the main models by setting a dummy variable for the year (Sakawa and Watanabel 2018). It has been argued that the year (business cycle) may have a specific effect on the result of the regression (Baatwah et al. 2015; Datta et al. 2013). Therefore, this study included a year dummy variable in the re-estimated models to control for the effect of differences across years (business cycle). Table 8 shows that the results were the same as those reported in Table 7.

Table 8. Regression Results Using OLS By Including Year Dummy Variable.

Variable	Direct Impact		Interaction Impact	
	Model 1	Model 2	Model 3	Model 4
	ROA	EPS	ROA	EPS
BSIZE	−0.855 *	−0.00271		
	(0.487)	(0.00334)		
BIND	−0.645	−0.00386		
	(0.454)	(0.00312)		
BMEET	0.0212	0.00441		
	(0.464)	(0.00318)		
BGEN	1.706 *	0.0114		
	(1.018)	(0.00699)		
BSIZE*NCscore			−0.306 **	−0.00190 **
			(0.125)	(0.000848)
BIND*NCscore			−0.165	−0.00159
			(0.164)	(0.00111)
BMEET*NCscore			0.280 *	0.00281 ***
			(0.149)	(0.00101)
BGEN*NCscore			1.397 ***	0.00874 ***
			(0.486)	(0.00328)
ACSIZE	0.782	0.0106	0.824	0.0124 **
	(0.954)	(0.00655)	(0.905)	(0.00612)
ACMEET	0.00300	0.000896	0.0323	0.00200
	(0.430)	(0.00296)	(0.404)	(0.00273)
ACIND	1.549	0.00678	1.638 *	0.00770
	(0.972)	(0.00668)	(0.912)	(0.00617)
TA	−0.0275	−0.00152	−0.226	−0.00189
	(0.439)	(0.00301)	(0.397)	(0.00268)
LEV	0.0248	−0.000514	−0.0150	−0.000721 **
	(0.0474)	(0.000326)	(0.0461)	(0.000312)
FA	−0.0177	−0.000619 *	−0.0452	−0.000760 **
	(0.0518)	(0.000356)	(0.0497)	(0.000336)
Big4	1.789	0.00260	1.169	−0.00124
	(2.021)	(0.0139)	(1.957)	(0.0132)
INDU	1.801	0.0342 *	5.170 **	0.0461 ***
	(2.577)	(0.0177)	(2.287)	(0.0155)
NCFO	4.234 **	0.00951	3.321 **	0.00794
	(1.655)	(0.0114)	(1.625)	(0.0110)
Constant	1.420	0.0116	−1.400	0.00957
	(5.277)	(0.0363)	(4.847)	(0.0328)
Year dummy	Included	Included	Included	Included
F Value	1.82	1.47	2.31	2.16
Sig	0.0531	0.1449	0.0116	0.0185
R-squared	0.269	0.230	0.319	0.305
Firms	42	42	42	42
Observations	84	84	84	84

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5.2. Winsorizing Variables

The study re-estimated the main models by winsorizing the value of the other continuous variables using a minimum level of 1% for the top and bottom, respectively. All continuous variables were winsorized to determine whether the results were consistent with those of the major regressions shown in Table 7, which only included winsorized variables that had outlier issues and whose skewness and kurtosis were greater than the thresholds of ± 3 and ± 10 , respectively. The results in Table 9 are the same as those in Table 7, proving that there is no difference in the outcomes when utilizing standardized or non-standardized values.

Table 9. Regression Results Using OLS By Winsorizing Variables.

Variable	Direct Impact		Interaction Impact	
	Model 1	Model 2	Model 3	Model 4
	ROA	EPS	ROA	EPS
BSIZE	−0.871 *	−0.00299		
	(0.484)	(0.00338)		
BIND	−0.645	−0.00386		
	(0.452)	(0.00316)		
BMEET	−0.0440	0.00326		
	(0.451)	(0.00315)		
BGEN	1.701 *	0.0113		
	(1.013)	(0.00708)		
BSIZE*NCscore			−0.300 **	−0.00182 **
			(0.125)	(0.000861)
BIND*NCscore			−0.160	−0.00151
			(0.164)	(0.00113)
BMEET*NCscore			0.261 *	0.00256 **
			(0.147)	(0.00101)
BGEN*NCscore			1.399 ***	0.00877 **
			(0.485)	(0.00334)
ACSIZE	0.818	0.0112 *	0.857	0.0128 **
	(0.948)	(0.00662)	(0.904)	(0.00622)
ACMEET	0.0582	0.00187	0.0898	0.00277
	(0.420)	(0.00294)	(0.399)	(0.00275)
ACIND	1.606	0.00778	1.708 *	0.00863
	(0.964)	(0.00673)	(0.908)	(0.00625)
TA	−0.0290	−0.00155	−0.247	−0.00217
	(0.437)	(0.00305)	(0.396)	(0.00273)
LEV	0.0262	−0.000488	−0.0140	−0.000707 **
	(0.0472)	(0.000329)	(0.0461)	(0.000317)
FA	−0.0159	−0.000588	−0.0441	−0.000746 **
	(0.0515)	(0.000359)	(0.0496)	(0.000342)
Big4	1.918	0.00487	1.294	0.000448
	(2.003)	(0.0140)	(1.950)	(0.0134)
INDU	1.601	0.0306 *	5.057 **	0.0445 ***
	(2.548)	(0.0178)	(2.281)	(0.0157)
NCFO	4.278 **	0.0103	3.326 **	0.00800
	(1.647)	(0.0115)	(1.624)	(0.0112)
Constant	0.796	0.000542	−2.378	−0.00358
	(5.167)	(0.0361)	(4.727)	(0.0325)
F Value	1.94	1.34	2.42	1.99
Sig	0.0396	0.2121	0.0092	0.0342
R-squared	0.265	0.199	0.310	0.270
Firms	42	42	42	42
Observations	84	84	84	84

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

6. Conclusions

Previous work has extensively examined the relationship between BOD characteristics and firm performance. However, the results have been inconsistent. Hence, the current research was built based on knowledge from the literature which confirmed that the NC plays a major role in the effectiveness of the BOD. Therefore, the study aimed to examine the interaction impact of NC and BOD characteristics on firm performance for firms listed on the Bahrain Bourse for two years, 2020 and 2021.

The results showed that the interaction of NC with BOD characteristics had a significant impact on firm performance. With the interaction of NC, the impact of board meeting frequency became significantly positively associated with firm performance measured by ROA and EPS, instead of the insignificant results found in the direct relationship. Similarly, with the interaction of NC, the number of female directors became more significantly positively associated with firm performance using the measurement of ROA, while it became significantly positively associated with firm performance using EPS, compared to the insignificant positive impact found in the direct relationship.

The findings indicate that the BOD's function must be reviewed to increase its efficacy. They imply that the NC may have a significant impact on the efficacy of the board and, consequently, on the firm performance. As a result, more time and resources need to be dedicated to creating effective corporate governance and corporate governance committees.

The outcomes show how various BOD characteristics are ineffectual in raising firm performance. In order to reinforce the directors' function and ensure that members perform their jobs more responsibly, policymakers may need to develop new policies. Further, policymakers should give more attention to the NC, as it plays an important role in the effectiveness of the BOD. To prevent the dominance of insider directors in the director nomination process, the NC should consist entirely of independent directors. In addition, it may be preferable if the board chairman is not a part of the NC in any capacity.

It is crucial to discuss the NC's function, since it forms the basis for judging the effectiveness of the board and its committees. Hence, increasing the NC's independence can lessen the disproportionate influence of top managers, such as CEOs and family members, during the appointment of directors, boosting corporate governance procedures for increasing firm performance.

The present study has significant limitations, much like many other investigations. For the limited period of 2020 and 2021, the present study selected 42 enterprises that were listed on the Bahrain Bourse. Using panel data over extended time periods could change the conclusions. The overall results of the current investigation, however, appear to be consistent with certain earlier studies. Future studies may extend the current study by examining more periods of time. A study that covers all countries of the Gulf Cooperation Council together (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) will be more beneficial.

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