

BOARD OF DIRECTORS' ATTRIBUTES AND FIRM FINANCIAL PERFORMANCE IN THE ENERGY INDUSTRY: EVIDENCE FROM THE DEVELOPING COUNTRY

Hussein H. Sharaf-Addin^{*}, Ahmed Abdullah Saad Al-Dhubaibi^{**}

^{*} Corresponding author, Accounting Department, College of Business, University of Bisha, Bisha, Saudi Arabia;

Accounting Department, Faculty of Administrative Sciences, Tamar University, Dhamar, Yemen

Contact details: College of Business, University of Bisha, 255, Al Nakhil, Bisha 67714, Saudi Arabia

^{**} College of Business Administration, Prince Sattam Bin Abdulaziz University, Al-Kharj, Saudi Arabia



Abstract

How to cite this paper: Sharaf-Addin, H. H., & Al-Dhubaibi, A. A. S. (2022). Board of directors' attributes and firm financial performance in the energy industry: Evidence from the developing country. *Journal of Governance & Regulation*, 11(4), 103–111.
<https://doi.org/10.22495/jgrv11i4art10>

Copyright © 2022 The Authors

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).
<https://creativecommons.org/licenses/by/4.0/>

ISSN Print: 2220-9352
ISSN Online: 2306-6784

Received: 21.03.2022
Accepted: 20.09.2022

JEL Classification: G32, G38, O16
DOI: 10.22495/jgrv11i4art10

Previous studies have examined the effect of the chief executive officer's (CEO) share-ownership and compensation on firm performance (Elsayed & Elbardan, 2018; Hill, Lopez, & Reitenga, 2016; Vemala, Nguyen, Nguyen, & Kommasani, 2014), however, the interaction effect of board of directors (BOD) share-ownership and compensation on firm performance are still unclear. Further, the incentive of higher financial performance to attract members of the BOD to hold shares in the company is still not adequately investigated by the literature. This study, therefore, aims to fill these gaps. Based on an investigation of 56 company-year observations of the Saudi energy industry for the period 2005-2019, we found that BOD share-ownership has a significant direct and positive effect on BOD compensation as well as on the return on equity (ROE). Moreover, the results indicate that BOD compensation affects the ROE significantly, and partially mediates the relationship between BOD share-ownership and ROE. Finally, the study revealed that the ROE positively and significantly affects BOD share-ownership, indicating that the higher the ROE, the more incentive for BOD members to hold shares in the company. The study provides new insights into the extant literature related to the joint effect of BOD share-ownership and compensation on firm performance, as well as the reverse relationship between BOD share-ownership and firm performance.

Keywords: BOD Share-Ownership, BOD Compensation, Firm Performance, Energy Industry

Authors' individual contribution: Conceptualization — H.H.S.-A.; Methodology — A.A.S.A.-D.; Software — H.H.S.-A.; Validation — A.A.S.A.-D.; Formal Analysis — H.H.S.-A.; Investigation — A.A.S.A.-D.; Resources — H.H.S.-A. and A.A.S.A.-D.; Data Curation — H.H.S.-A.; Writing — Original Draft — H.H.S.-A.; Writing — Review & Editing — A.A.S.A.-D.; Visualization — H.H.S.-A.; Supervision — A.A.S.A.-D.; Project Administration — H.H.S.-A.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

The board of directors (BOD) is considered to be the heart of corporate governance to control and monitor the decisions made by management (Dorata & Petra, 2008), especially when the BOD is active and

powerful relative to top management (Reed, Donohue, & Barnes, 2004). The most disputable point here is whether the BOD members' remuneration is commensurate with their performance in the firm. Questions about compensation, shareholding, and firm performance of chief executive officers (CEOs)

have been reported in the literature, but arguments on the relationship between BOD compensation, share-ownership, and firm performance are still ambiguous. As documented by Lemma, Milo, and Gwatidzo (2020), studies that examine BOD compensation are limited, while a relatively extensive body of literature dwells on CEO remuneration. Most previous studies in this area have focused on CEO's share-ownership and compensation (Boyd, 1994; Core, Holthausen, & Larcker, 1999; Dorata & Petra, 2008; Elsayed & Elbardan, 2018; Hill, Lopez, & Reitenga, 2016; Lee & Chen, 2011; Matolcsy & Wright, 2011; Vemala, Nguyen, Nguyen, & Kommasani, 2014). Meanwhile, studies examining BOD ownership and remuneration are less common and rather inconclusive (Lemma et al., 2020; Magnan, St-Onge, & Gélinais, 2010; Menozzi, Erbetta, Fraquelli, & Vannoni, 2014).

Our study investigates the above relationship in the energy industry in Saudi Arabia. To date, most research on Saudi Arabia has focused on corporate governance mechanisms and firm performance (Al-Matari, Al-Swidi, & Bt Fadzil, 2012; Aljaaidi & Hassan, 2020; Buallay, Hamdan, & Zureigat, 2017; Fallatah & Dickins, 2012; Habbash, 2016; Hamdan, Buallay, & Alareeni, 2017; Pillai & Al-Malkawi, 2018). A few studies have focused on corporate governance and corporate disclosure (Al-Ghamdi & Rhodes, 2015; Al-Janadi, Abdul Rahman, & Alazzani, 2016; Al-Maghzom, Hussainey, & Aly, 2016), but none have investigated the relationship between BOD ownership, BOD remuneration, and firm performance. This study fills this void by providing empirical evidence to answer the following question:

RQ1: What is the joint effect of BOD ownership and compensation on firm performance?

The study provides a theoretical framework and empirical analysis of the effect of BOD share-ownership on BOD compensation, the effect of BOD share-ownership on firm performance, and the interaction between BOD share-ownership and compensation's effect on firm performance. Based on the data obtained from the 56 company-year observations of the Saudi energy industry for the period 2005-2019, this study sheds light on the vital role of BOD in enhancing firm financial performance through the interaction effect of share-ownership and compensation plans.

The remainder of this study is structured as follows: Section 2 briefly summarizes the relevant literature and develops the research framework, the research model, and the research hypotheses. Section 3 describes the data collection and the research methodology used in the study. In Sections 4 and 5, the study's results are reported and discussed, while Section 6 concludes the study.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Corporate governance practices and their effect on firms' performance continue to be noteworthy and researchable topics among corporate governance scholars worldwide. Some specific studies have addressed the significance of selected corporate governance mechanisms on firm performance measured by either accounting measures or economic measures. For instance, it has been found that executives' compensation could lead to better

financial performance (Raithatha & Komera, 2016), and the relationship between employee equity-based compensation and firm performance should be aligned (Frye, 2004). Ideally, an effective CEO compensation arrangement could certainly have a positive effect on firm performance (Akter, Ali, Abedin, & Hossain, 2020). Some empirical studies found a negative association between CEO share-ownership and compensation (Core et al., 1999; Lambert & Larcker, 1993). The findings of the study conducted by Bin, Chen, and Xuan Ngo (2020) revealed a positive association between Chinese CEO pay and firm performance in measures such as return on assets and stock price return. They also found that CEO pay is positively affected by BOD independence, but not by state ownership. In contrast, Kyere and Ausloos (2021) found that insider shareholding has an insignificant effect on return on assets (ROA). In their study, Cornett, Marcus, and Tehranian (2008) found that CEO compensation led to an increase in earnings management practices. On the other hand, in Core et al.'s (1999) study, higher compensation for CEOs was found to be a result of less effective corporate governance.

However, most of the previous studies have extensively addressed the effect of CEO ownership and compensation on firm performance, while those that have addressed the relationship between BOD share-ownership, BOD compensation, and firm performance are limited. The BOD is supposed to play a value-added role by monitoring and supervising firms' management, providing strategic guidelines, and identifying problems and challenges (Brennan, 2006; Jonsson, 2005). While BOD ownership has been reported as one of the corporate governance mechanisms that could influence a firm performance (Queiri, Madbouly, Reyad, & Dwaikat, 2021), excessive BOD compensation has been a new issue for researchers and policymakers in recent years (Lemma et al., 2020; Steenkamp, Dippenaar, Fourie, & Franken, 2019; Steenkamp & Wesson, 2018). Some studies have reported noteworthy findings on the effect of BOD compensation on firms' performance. For instance, Lemma et al., (2020) found that the BOD compensation is directly associated with the financial performance of South African companies. However, firms' economic growth not only affects BOD productivity (Smith & Watts, 1992) but also could make firms more attractive for takeovers and then affect compensation (Cyert, Kang, & Kumar, 2002).

To address the potential conflicts between BOD interests and corporate performance, two underpinning theories are proposed that may describe the relationship between BOD interests and their subsequent effect on corporate performance: these are 1) agency theory and 2) stewardship theory. Agency theory addresses the relationship between a principal(s), an agent(s), and the contract that binds them (Jenson & Mechling, 1976). It is argued that agency problems emerge from the conflicts between the principal as self-interested and opportunistic rather than altruistic, and the agents (Rashid, 2018). Based on this view, and the argument earlier raised by Core et al. (1999) that CEOs at firms with agency problems collect more compensation, while firms with agency problems perform worse, we assume a linkage

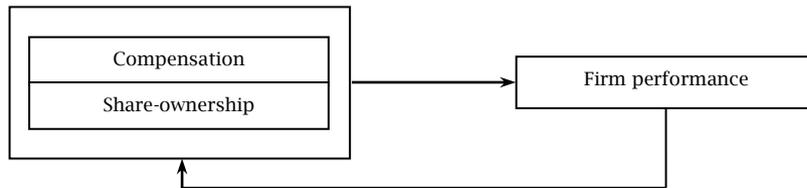
between BOD share-ownership and BOD compensation with corporate performance. On the other hand, stewardship theory takes a broader view of human behavior, proposing that individuals are motivated not only by self-interest, but also by service to others, altruism, and generosity.

Unlike the agency theory which argues that the role of the CEO and chairperson should be

separated, the stewardship theory suggests that both roles should be combined (Kyere & Ausloos, 2021).

Our extensive review of relevant studies on both agency and stewardship theories has led to the development of the theoretical framework illustrated in Figure 1. The framework suggests that the effect of BOD share-ownership on firm performance varies based on BOD compensation, which in turn could be inversely affected by firm performance.

Figure 1. The linkage between share-ownership, compensation, and firm performance

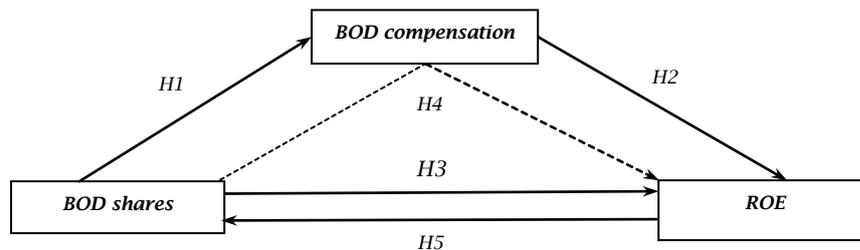


In the Saudi context, specifically in the energy industry, global competitiveness has been attracting energy firms to maintain their global business leadership. This could include changes in corporate governance features such as BOD structure and incentives. Related studies have addressed the aggressive role of corporate governance mechanisms on firm performance among Saudi firms. For instance, Bajaher (2019) revealed a significant positive effect of managerial ownership on the financial performance of listed cement companies in the Saudi market. On the contrary, other studies found no relationship between the corporate governance of the firms studied and their financial

performance in the listed companies on the Saudi stock exchange (Al-Ghamdi & Rhodes, 2015; Aljaaidi & Hassan, 2020; Buallay et al., 2017; Fallatah & Dickens, 2012). These findings suggest a need to conduct this study to investigate the new insights of corporate governance variables including BOD share-ownership and compensation and their joint relationship with form performance.

Using insights drawn from the theoretical framework proposed above, the research model was developed which links the BOD share-ownership and compensation with corporate performance.

Figure 2. Empirical research model



Previous researchers have demonstrated a significant association between BOD ownership and the level of board pay. Barontini and Bozzi (2011) found that the level of board cash compensation is significantly influenced by the nature of ownership: Italian state-owned firms pay more while Italian family firms pay less. Moreover, the association of BOD size with firm size, and subsequently with firm performance has been highlighted in the literature. Darmadi (2012) demonstrated that firm size and number of BOD members are positively associated with compensation level. Furthermore, Dorata and Petra (2008) revealed that firm size is a stronger determinant of BOD size and then on firm performance. Typically, firm performance-based compensation when the CEO does not hold a dual position depends on the size of the BOD. From the perspective of agency theory, a small BOD is more effective for firms that need the BOD for monitoring and controlling roles (Guney, Hernandez-

Perdomo, & Rocco, 2020; Pillai & Al-Malkawi, 2018). Cornett et al. (2008) argue that BOD size could be inversely related to firm performance, and Guney et al. (2020) also found a negative effect of BOD size on firm performance. In contrast, Kyere and Ausloos (2021) found a positive and significant effect of BOD size on the two financial performance ratios (ROA and Tobin's Q). Kanakriyah (2021) also affirms the significant effect of BOD size on form performance among Jordanian listed companies. Meanwhile, Barontini and Bozzi (2011) found that high board compensation was significantly associated with smaller board size. In essence, social network theory may have the potential to explain cross-sectional variation in the level of BOD compensation through BOD size (Barontini & Bozzi, 2011). According to social network theory, BOD size and the level of BOD compensation should be higher in companies that co-operate with other organizations in some outside resource. Thus, the impact of firm and BOD size, in the study

assumption, may be particularly significant in the effect of BOD share-ownership on firm performance. Therefore, these variables were included. The first hypothesis was proposed:

H1: Companies with BOD share-ownership pay less BOD compensation.

In addition, outside BOD members could have the power to control and manage corporate performance. Outside board members are likely to be more independent and arguably in a better position to control managers (Cornett et al., 2008), and in this way perform a more efficient monitoring function (Celentano, Lepore, Pisano, D'Amore, & Alvino, 2020). In particular, Cornett et al. (2008) reported that independent board members are likely to more effectively manage and control firm activities to achieve better financial performance. Meanwhile, Kyere and Ausloos (2021) demonstrated that BOD independence has a positive statistical significant effect on both financial performance indicators (ROA and Robin's Q). Hence, the independence of the BOD should not be ignored when investigating the effect of BOD share-ownership on return on equity (ROE). The following hypothesis was proposed:

H2: Companies with BOD share-ownership achieve better ROE.

Earlier, Coughlan and Schmidt (1985) found that CEO compensation was significantly related to abnormal stock price performance. They pointed out that the BOD set discretionary remuneration plans to induce the CEO to increase ROE. In more concentration, Linn and Park (2005) argued that the relationship between BOD compensation and firm performance is positive. Unexpectedly, Barontini and Bozzi (2011) detected a non-significant effect of the excess BOD compensation associated with ownership concentration on Italian firm performance. The following hypothesis is proposed:

H3: Companies with higher BOD compensation achieve better ROE.

In pursuing the effect of both BOD share-ownership and compensation, Barontini and Bozzi (2011) discovered that BOD compensation is lower among Italian firms where the ownership is highly concentrated, but its relationship with firm

performance had never been addressed. Hence, the present study assumes that both BOD share-ownership and compensation are jointly associated with firm performance through the following proposed hypothesis:

H4: Companies with higher BOD share-ownership and BOD compensation achieve better ROE.

As reviewed earlier, many studies have focused on the corporate governance mechanisms that may affect firm performance. Whether the outcome is positive or negative, previous studies have provided evidence of the effect of BOD share-ownership and compensation on firm performance. However, none of these studies have demonstrated the obverse effect, of firm performance on share-ownership by BOD members. Our study uniquely examines this relationship through the following proposed hypothesis:

H5: Better ROE encourages BOD members to hold shares in the company.

3. DATA AND METHODOLOGY

3.1. Data sources

This study used the Tadawul database in which all the Saudi listed companies are committed to disclosing their annual reports. Data of studied variables jointly with detailed information on board ownership and compensation have been manually collected from end-of-year reports published by all the companies listed under the energy category in Tadawul for the period 2005 to 2019. Therefore, total observations of 56 corresponding to 5 sample companies have been obtained.

3.2. Description of variables

Table 1 presents the description of the variables used in the study. The dependent variable was defined as corporate financial performance measured by the ROE following, among others, Mun, Paek, Woo, and Park (2019). It was calculated by dividing the net profit after tax over the book value of equity.

Table 1. Description of variables used in the study

<i>Variables</i>	<i>Description</i>
<i>BOD_IND</i> (board independence)	The ratio of independent members of the board of directors to the total members
<i>BOD_SZ</i> (board size)	Natural logarithm of the number of members of the board of directors
<i>FIRM_SZ</i> (firm size)	Natural logarithm of the book value of assets
<i>BOD_SH</i> (board share-ownership)	The ratio of shares held by members of the board of directors to total shares
<i>BOD_COMP</i> (board compensation)	Natural logarithm of total compensation
<i>ROE</i> (return on equity)	The ratio of net profit after tax to book value of equity

For BOD compensation, we used a "refined version", following Barontini and Bozzi (2011), of total compensations that are credited to BOD members, and alternatively, we included the accrued compensations of the current year, accrued compensations of the previous year, and compensations received from any consulting services provided. After the total compensations have been accounted for, the natural logarithm of the total compensations figure has been calculated.

The board share-ownership, following Mun et al. (2019), refers to the total shares owned by board members and their relatives in the respective

companies compared to the total outstanding shares. Other control variables used in the study include the natural log of BOD size (log (BOD members)), the natural log of firm size (log (book value of total assets)), and BOD independence (ratio of BOD independent members to total members).

3.3. Estimation methods

The following pooled ordinary least squares (OLS) regression models were used to consistently examine the hypotheses developed:

Model 1

$$BOD_COMP_i = \beta_0 + \beta_1 BOD_SH_i + \beta_2 BOD_SZ_i + \varepsilon_{it} \quad (1)$$

Model 2

$$ROE_i = \beta_0 + \beta_1 BOD_COMP_i + \beta_2 BOD_SZ_i + \varepsilon_{it} \quad (2)$$

Model 3

$$ROE_i = \beta_0 + \beta_1 BOD_SH_i + \beta_2 BOD_SZ_i + \beta_3 BOD_IND_i + \varepsilon_{it} \quad (3)$$

Model 4

$$ROE_i = \beta_0 + \beta_1 BOD_SH * BOD_COMP_i + \beta_2 FIRM_SZ_i + \beta_3 BOD_IND_i + \varepsilon_{it} \quad (4)$$

Model 5

$$BOD_SH_i = \beta_0 + \beta_1 ROE_i + \beta_2 FIRM_SZ_i + \varepsilon_{it} \quad (5)$$

Following Baron and Kenny (1986), the study used four criteria to examine the empirical model developed from the study's theoretical framework. Since the dependent variable was the ROE: 1) the direct effect of BOD share-ownership on BOD compensation was examined first. Following this; 2) the direct effect of BOD compensation on ROE was examined; then 3) the direct effect of BOD share-ownership on ROE was examined; and finally 4) the joint effect of BOD share-ownership with BOD compensation on ROE was examined. In Model 1, the BOD share-ownership variable was examined as an independent variable that could affect BOD compensation. However, Gabaix, Landier, and Sauvagnat (2014) and Cyert et al. (2002), among others, argue that a firm's BOD size could have an impact on the level of BOD compensation. Hence, this variable was included as a control variable. This model can provide initial findings that might be beneficial when testing the mediating role of BOD compensation on the relationship between BOD share-ownership and firm performance.

In Model 2, the BOD compensation variable was examined as an independent variable that could affect the ROE. However, Guney et al. (2020) in their study reported that BOD size negatively affected companies' performance in selected East African countries. Hence, the effect of such a variable was controlled in this model.

In Model 3, the proposed direct effect of BOD share-ownership as an independent variable on ROE, a dependent variable was examined. Since the BOD size affects firm performance as reported by Guney et al. (2020), some previous studies revealed a significant effect of firm size on firm performance (Al-khasawneh, Endut, & Nik Mohd Rashid, 2020; Nawaz Khan, Hussain, Ur-Rehman, Maqbool,

Engku Ali, & Numan, 2019). Hence, the effect of both the BOD size and firm size was controlled in this model. In Model 4, the joint effect of BOD share-ownership (as an independent variable) and BOD compensation (as a mediating variable) on ROE as a dependent variable was examined. However, since the BOD size and firm size have a significant effect on firm performance as reported in the literature (Al-khasawneh, 2020; Guney et al., 2020; Nawaz Khan et al., 2019), their effect in this model was controlled. Finally, in Model 5, the significance of the study to find out the reverse effect of ROE as an independent variable on BOD share-ownership as a dependent variable was examined

4. RESULTS

4.1. Descriptive statistics

Table 2 presents the descriptive statistics of all the variables used through the analysis. The board size average is 8 members, with a minimum of 6 members and a maximum of 10 members. The mean data for the board independence is 0.526 with a range of zero to a maximum of 1. This indicates that, on average, the proportion of independent board members is nearly 53%. The firm size average is approximately 6.595, with a standard deviation of 0.854. The results in the table also show that the average of BOD shares is 5.774 with a standard deviation of 0.645, and the average of BOD compensation is 3.204 with a standard deviation of 0.774. The average ROE is 0.05 with a standard deviation of 0.07 indicating that the average firm performance in terms of ROE is 5%.

Table 2. Descriptive analysis

	<i>BOD_IND</i>	<i>BOD_SZ</i>	<i>FIRM_SZ</i>	<i>BOD_SH</i>	<i>BOD_COMP</i>	<i>ROE</i>
Mean	0.526	8.321	6.595	5.774	3.204	0.053
Minimum	0	6	5.36	4.78	0.04	-0.03
Maximum	1	10	7.87	6.9	4.3	0.48
Std. deviation	0.22721	1.01098	0.85374	0.64549	0.77435	0.07036

4.2. Correlation

Table 3 presents the correlation analysis results, using Pearson correlation coefficient, among all

the variables. As for the relationship between the dependent and independent variables, the ROE has a significant positive relationship with board independence and BOD share-ownership, has

a significant negative relationship with firm size, as well as a negative but not significant relationship with BOD size and compensation. This means that higher BOD independence and share-ownership can achieve higher ROE and, conversely, when the firm is bigger, the ROE could be lower.

According to Table 3, the ROE is significantly correlated with BOD share-ownership at a 1% significance level, and with BOD independence at

a 5% significance level with Pearson coefficients of 0.438 and 0.318 repetitively. This indicates that the larger the proportion of BOD independence and share-ownership is, the higher ROE is. A negative relationship was found between ROE and firm size at a 1% significant level with a Pearson coefficient of 0.386 indicating that the larger the size of the firm size, the lower the ROE.

Table 3. Correlation between variables

Variables	BOD_IND	BOD_SZ	FIRM_SZ	BOD_COMP	BOD_SH	ROE
BOD_IND	1.000					
FIRM_SZ	-0.526**	1.000				
BOD_SZ	-0.067	0.453**	1.000			
BOD_COM	0.222	-0.430**	-0.154	1.000		
BOD_SH	0.293*	-0.698**	-0.288*	0.602**	1.000	
ROE	0.318*	-0.386**	-0.093	0.346**	0.438**	1.000

Note: ** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).

4.3. Models estimations

We estimate all models using the POLS estimator to access the joint effect of BOD share-ownership and

BOD compensation on firm performance. Table 4 presents the results for the four models developed above.

Table 4. Models results

Variables	Results of Model 1 for BOD_COMP		Results of Model 2 for ROE		Results of Model 3 for ROE		Results of Model 4 for ROE		Results of Model 5 for BOD_SH	
	Coefficient	T-sta.	Coefficient	T-sta.	Coefficient	T-sta.	Coefficient	T-sta.	Coefficient	T-sta.
BOD_SH	0.221 (0.183)	1.350			0.384 (0.003)***	3.084	0.168 (0.043)**			
BOD_COMP			0.264 (0.01)**	3.471						
BOD_SZ	0.018 (0.865)	0.171	-0.035 (0.294)	-0.212	-0.018 (0.882)	-0.149				
BOD_IND					0.231 (0.068)*	1.865	0.160 (0.287)	1.075		
FIRM_SZ							-0.310 (0.042)**	-2.083	-0.306 (0.019)**	-2.411
BOD_SH * BOD_COMP							0.273 (0.025)**	0.579		
ROE									0.319 (0.015)**	2.513
R-squared	0.243		0.493		0.033		0.173		0.272	
Adj. R-squared	0.199		0.162		-0.003		0.125		0.244	
Durbin_Waston stat.	2.119		2.094		1.969		2.101		2.020	
F-statistic	5.565***		6.310***		0.912**		3.614**		9.878***	
Number of observ.	56		56		56		56		56	

Note: * $P < 0.1$; ** $P < 0.05$; *** $P < 0.005$.

The first step before examining the joint effect of BOD share-ownership and BOD compensation on firm performance is to estimate the effect of BOD share-ownership on BOD compensation (Model 1). Taking into consideration the effect of BOD size, the results show a non-significantly positive effect of BOD share-ownership on BOD compensation. Hence, $H1$ is rejected. The second step is to test the direct effect of BOD compensation (the mediating variable) on ROE. Considering the control effect of BOD size, the results indicate a significant positive effect of BOD compensation on ROE. Hence, $H2$ is accepted. In the third step, the direct effect of BOD share-ownership on ROE was tested and the results reveal a significantly positive effect; thus $H3$ is accepted. In the fourth step, the mediating effect of BOD compensation on the relationship between BOD share-ownership and ROE was tested. The results reveal a significantly positive effect, indicating that BOD compensation mediates the relationship between BOD share-ownership and ROE. However, the standardized coefficient of BOD share-ownership

is changed from 0.384 to 0.273 and remains significant, indicating the effect of BOD share-ownership on ROE is partially mediated by BOD compensation.

5. DISCUSSION

The results of the study provide some interesting incites. The most striking result appears to reveal no inverse (backwards) relation between BOD share-ownership and BOD compensation. Unlike the study assumes that the BOD members with higher shareholding levels are careless about their compensation since they will get higher dividends, the study reveals that the BOD members with share-ownership also had higher compensation. Admittedly, this may be because BOD members who own shares in the company are less concerned about the level of their monetary compensation. On the other hand, the study results do suggest that higher BOD compensation achieves better corporate performance, as well as combined BOD share-

ownership with compensation, achieves better corporate performance. However, unlike Hermalin and Weisbach's (2013) conclusion, we believe that based on these results, BOD compensation should be considered when the evidence provided confirms the effect of BOD compensation on corporate performance but does not seem to be inversely affected by BOD share-ownership. Moreover, we observed a significant positive and direct effect of BOD share-ownership on corporate performance. This evidence is in line with some previous studies (Barontini & Bozzi, 2011) but contradicts others (Lemma et al., 2020; Ghazali, 2010). Although a less positive and partially mediating effect is found, the results suggest that it is important to consider the joint impact of BOD share-ownership and compensation on corporate performance. This evidence suggests that high levels of BOD shareholding through their compensation could alleviate agency conflicts and contribute to superior BOD performance. Finally, we found evidence that higher corporate performance leads to higher BOD share-ownership. This suggests that the BOD shareholding levels are reliant on corporate performance.

In previous relative studies, except the study conducted by Lemma et al. (2020), less attention has been paid to the study of BOD compensation; instead, much concern has been given to CEO compensation and its effect on firm performance. In one of the relatively few extant studies, and inconsistent with our results, Lemma et al. (2020) found a significant positive relationship between BOD remuneration and firm performance, implying that the companies that pay higher compensation to their directors tend to report higher financial performance. This evidence is consistent with related evidence found in other studies indicating that incentives provided to directors result in fewer agency conflicts and boost companies' performance (Akter et al., 2020; Barontini & Bozzi, 2011; Lemma et al., 2020; Magnan et al., 2010; Steenkamp et al., 2019). Unlike CEOs' compensation and shareholding, which has been broadly studied, there is limited literature on the relationship between BOD share-ownership, BOD compensation, and firm performance, as well as the inverse (backwards) effect of firm performance on BOD share-ownership.

6. CONCLUSION

Drawing insights from agency and stewardship theories, this study aimed to empirically verify the theoretical framework developed and then fill the gaps apparent in the literature. The study examined the effect of BOD share-ownership on BOD compensation, the effect of BOD share-ownership on

firm performance, and the interaction between BOD share-ownership and compensation's effect on firm performance. Through the investigation of 56 company-year observations of the Saudi energy industry for the period 2005–2019, we demonstrated that the direct effect of BOD share-ownership on BOD compensation is unexpectedly positive but insignificant, while the direct effect of BOD share-ownership on firm performance is positive and significant as we expected. Unlike the study assumption, it means that companies, where BOD members own more shares, pay more BOD compensation and achieve better performance. We also found that the BOD compensation is significantly and positively related to firm performance, and partially mediates the relationship between BOD share-ownership and firm performance. Interestingly, we demonstrated that the higher performance of companies is significantly and positively related to BOD share-ownership. It appears that the joint effect of BOD share-ownership and compensation is driving firm performance, which in turn attracts BOD members to hold shares in the company.

Our study contributes to the literature, to researchers, and to companies, themselves. Firstly, the findings have added new insights to the current literature related to the relationship between BOD share-ownership, BOD compensation, and firm performance. Secondly, the findings enrich researchers' understanding of the direct, indirect, and inverse (backwards) relation between BOD share-ownership and firm performance. Finally, the findings enhance shareholders' understanding of the interplay between BOD share-ownership and compensation, and that it should be optimally designed in a way that would enhance a firm's performance. Despite these empirical insights, this study is not without limitations. The first limitation is the small sample size which is the study population since the selected industry includes few numbers of companies. The second limitation is that the study was conducted in a developing country and the generalization of the results to other countries should be handled with caution. Finally, the study used only one dimension of financial performance, and thus, the analysis method conducted was the POLS regression model. However, additional investigation of other financial performance dimensions, such as return on investment and return on equity, and control variables, such as firm age and leverage, should be carried out, and in turn, the structural equation modeling (SEM) could be used in future research. In addition, future research is recommended to replicate the model of the current study in other Gulf countries to find further empirical insights.

REFERENCES

1. Akter, S., Ali, M. H., Abedin, M. T., & Hossain, B. (2020). Directors' remuneration and performance: Evidence from the textile sector of Bangladesh. *Journal of Asian Finance, Economics and Business*, 7(6), 265–275. <https://doi.org/10.13106/jafeb.2020.vol7.no6.265>
2. Al-Ghamdi, M., & Rhodes, M. (2015). family ownership, corporate governance and performance: Evidence from Saudi Arabia. *International Journal of Economics and Finance*, 7(2), 78–89. <https://doi.org/10.5539/ijef.v7n2p78>
3. Al-Janadi, Y., Abdul Rahman, R., & Alazzani, A. (2016). Does government ownership affect corporate governance and corporate disclosure? Evidence from Saudi Arabia. *Managerial Auditing Journal*, 31(8–9), 871–890. <https://doi.org/10.1108/MAJ-12-2015-1287>
4. Al-khasawneh, S. M., Endut, W. A., & Nik Mohd Rashid, N. N. (2020). Relationship between modern management accounting techniques and organizational performance of industrial sector listed in Amman Stock Exchange. *International Journal of Management, Accounting and Economics*, 7(5), 278–300. Retrieved from https://www.ijmae.com/article_114342_d479e0c185d75d742f5bc7f794d3d4c5.pdf

5. Al-Maghzom, A., Hussainey, K., & Aly, D. (2016). Corporate governance and risk disclosure: Evidence from Saudi Arabia. *Corporate Ownership and Control*, 13(2), 145-166. <https://doi.org/10.22495/cocv13i2p14>
6. Al-Matari, Y. A., Al-Swidi, A. K., & Bt Fadzil, F. H. (2012). Corporate governance and performance of Saudi Arabia listed companies. *British Journal of Arts and Social Sciences*, 9(1), 1-30. Retrieved from http://www.bjournal.co.uk/paper/BJASS_9_1/BJASS_09_01_01.pdf
7. Aljaaidi, K. S., & Hassan, W. K. (2020). Energy industry performance in Saudi Arabia: Empirical evidence. *International Journal of Energy Economics and Policy*, 10(4), 271-277. <https://doi.org/10.32479/ijeeep.9003>
8. Bajaher, M. S. (2019). Corporate governance and financial performance: An empirical study on cement companies listed in Saudi Stock Market. *Jerash for Research and Studies*, 20(2), 697-711. Retrieved from https://jerashrs.com/home/administrator/components/com_jresearch/files/publications/13-%20Corporate%20Governance%20Mohammed%20Bajaher.pdf
9. Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
10. Barontini, R., & Bozzi, S. (2011). Board compensation and ownership structure: Empirical evidence for Italian listed companies. *Journal of Management and Governance*, 15(1), 59-89. <https://doi.org/10.1007/s10997-009-9118-5>
11. Bin, L., Chen, J., & Xuan Ngo, A. (2020). Revisiting executive pay, firm performance, and corporate governance in China. *Economics, Management, and Financial Markets*, 15(1), 9-32. <https://doi.org/10.22381/EMFM15120201>
12. Boyd, B. K. (1994). Board control and CEO compensation. *Strategic Management Journal*, 15(5), 335-344. <https://doi.org/10.1002/smj.4250150502>
13. Brennan, N. (2006). Boards of directors and firm performance: Is there an expectations gap? *Corporate Governance: An International Review*, 14(6), 577-593. <https://doi.org/10.1111/j.1467-8683.2006.00534.x>
14. Buallay, A., Hamdan, A., & Zureigat, Q. (2017). Corporate governance and firm performance: Evidence from Saudi Arabia. *Australasian Accounting, Business and Finance Journal*, 11(1), 78-98. <https://doi.org/10.14453/aabfj.v11i1.6>
15. Celentano, A., Lepore, L., Pisano, S., D'Amore, G., & Alvino, F. (2020). The joint effect of board independence and CSR committee on CSR disclosure: Evidence from Italian listed companies [Special issue]. *Corporate Ownership and Control*, 17(4), 319-328. <https://doi.org/10.22495/cocv17i4siart9>
16. Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, 51(3), 371-406. Retrieved from <https://www.sciencedirect.com/science/article/pii/S0304405X98000580>
17. Cornett, M. M., Marcus, A. J., & Tehranian, H. (2008). Corporate governance and pay-for-performance: The impact of earnings management. *Journal of Financial Economics*, 87(2), 357-373. <https://doi.org/10.1016/j.jfineco.2007.03.003>
18. Coughlan, A. T., & Schmidt, R. M. (1985). Executive compensation, management turnover, and firm performance: An empirical investigation. *Journal of Accounting and Economics*, 7(1-3), 43-66. [https://doi.org/10.1016/0165-4101\(85\)90027-8](https://doi.org/10.1016/0165-4101(85)90027-8)
19. Cyert, R. M., Kang, S. H., & Kumar, P. (2002). Corporate governance, takeovers, and top-management compensation: Theory and evidence. *Management Science*, 48(4), 453-469. <https://doi.org/10.1287/mnsc.48.4.453.205>
20. Darmadi, S. (2012). *Board compensation, corporate governance, and firm performance in Indonesia*. <https://doi.org/10.2139/ssrn.1907103>
21. Dorata, N. T., & Petra, S. T. (2008). CEO duality and compensation in the market for corporate control. *Managerial Finance*, 34(5), 342-353. <https://doi.org/10.1108/03074350810866216>
22. Elsayed, N., & Elbardan, H. (2018). Investigating the associations between executive compensation and firm performance: Agency theory or tournament theory. *Journal of Applied Accounting Research*, 19(2), 245-270. <https://doi.org/10.1108/JAAR-03-2015-0027>
23. Fallatah, Y., & Dickins, D. (2012). Corporate governance and firm performance and value in Saudi Arabia. *African Journal of Business Management*, 6(36), 10025-10034. Retrieved from <https://academicjournals.org/journal/AJBM/article-abstract/A22A6F328713>
24. Frye, M. B. (2004). Equity-based compensation for employees: Firm performance and determinants. *Journal of Financial Research*, 27(1), 31-54. <https://doi.org/10.1111/j.1475-6803.2004.00076.x>
25. Gabaix, X., Landier, A., & Sauvagnat, J. (2014). CEO pay and firm size: An update after the crisis. *The Economic Journal*, 124(574), F40-F59. <https://doi.org/10.1111/eoj.12084>
26. Ghazali, N. A. M. (2010). Ownership structure, corporate governance and corporate performance in Malaysia. *International Journal of Commerce and Management*, 20(2), 109-119. <https://doi.org/10.1108/10569211011057245>
27. Guney, Y., Hernandez-Perdomo, E., & Rocco, C. M. (2020). Does relative strength in corporate governance improve corporate performance? Empirical evidence using MCDA approach. *Journal of the Operational Research Society*, 71(10), 1593-1618. <https://doi.org/10.1080/01605682.2019.1621216>
28. Guney, Y., Karpuz, A., & Komba, G. (2020). The effects of board structure on corporate performance: Evidence from East African frontier markets. *Research in International Business and Finance*, 53, 101222. <https://doi.org/10.1016/j.ribaf.2020.101222>
29. Habbash, M. (2016). Corporate governance and corporate social responsibility disclosure: Evidence from Saudi Arabia. *Social Responsibility Journal*, 12(4), 740-754. <https://doi.org/10.1108/SRJ-07-2015-0088>
30. Hamdan, A. M., Buallay, A. M., & Alareeni, B. A. (2017). The moderating role of corporate governance on the relationship between intellectual capital efficiency and firm's performance: Evidence from Saudi Arabia. *International Journal of Learning and Intellectual Capital*, 14(4), 295-318. <https://doi.org/10.1504/IJLIC.2017.087377>
31. Hermalin, B. E., & Weisbach, M. S. (1991). The effects of board composition and direct incentives on firm performance. *The Journal of the Financial Management Association*, 20(4), 1-22. Retrieved from <https://ideas.repec.org/a/fma/fmanag/hermalin91.html>

32. Hill, M. S., Lopez, T. J., & Reitenga, A. L. (2016). CEO excess compensation: The impact of firm size and managerial power. *Advances in Accounting*, 33, 35–46. <https://doi.org/10.1016/j.adiac.2016.04.007>
33. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
34. Jonsson, E. I. (2005). The role model of the board: A preliminary study of the roles of Icelandic boards. *Corporate Governance: An International Review*, 13(5), 710–717. <https://doi.org/10.1111/j.1467-8683.2005.00462.x>
35. Kanakriyah, R. (2021). The impact of board of directors' characteristics on firm performance: A case study in Jordan. *Journal of Asian Finance, Economics and Business*, 8(3), 341–350. <https://doi.org/10.13106/jafeb.2021.vol8.no3.0341>
36. Kyere, M., & Ausloos, M. (2021). Corporate governance and firms financial performance in the United Kingdom. *International Journal of Finance and Economics*, 26(2), 1871–1885. <https://doi.org/10.1002/ijfe.1883>
37. Lambert, R. A., & Larcker, D. F. (1993). The structure of organizational incentives. *Administrative Science Quarterly*, 38(3), 438–461. <https://doi.org/10.2307/2393375>
38. Lee, S. P., & Chen, H. J. (2011). Corporate governance and firm value as determinants of CEO compensation in Taiwan: 2SLS for panel data model. *Management Research Review*, 34(3), 252–265. <https://doi.org/10.1108/01409171111116286>
39. Lemma, T. T., Milo, M., & Gwatidzo, T. (2020). Board remuneration, directors' ownership and corporate performance: The South African evidence. *International Review of Applied Economics*, 34(4), 491–511. <https://doi.org/10.1080/02692171.2020.1773654>
40. Linn, S. C., & Park, D. (2005). Outside director compensation policy and the investment opportunity set. *Journal of Corporate Finance*, 11(4), 680–715. <https://doi.org/10.1016/j.jcorpfin.2004.11.002>
41. Magnan, M., St-Onge, S., & Gélinas, P. (2010). Director compensation and firm value: A research synthesis. *International Journal of Disclosure and Governance*, 7(1), 28–41. <https://doi.org/10.1057/jdg.2009.13>
42. Matolcsy, Z., & Wright, A. (2011). CEO compensation structure and firm performance. *Accounting and Finance*, 51(3), 745–763. <https://doi.org/10.1111/j.1467-629X.2010.00363.x>
43. Menozzi, A., Erbetta, F., Fraquelli, G., & Vannoni, D. (2014). The determinants of board compensation in SOEs: An application to Italian local public utilities. *Applied Financial Economics*, 24(3), 145–159. <https://doi.org/10.1080/09603107.2013.870649>
44. Mun, S. G., Paek, S., Woo, L., & Park, S. (2019). Is board of director compensation excessive in restaurant firms? *International Journal of Hospitality Management*, 82, 149–158. <https://doi.org/10.1016/j.ijhm.2019.04.014>
45. Nawaz Khan, S., Hussain, R. I., Ur-Rehman, S., Maqbool, M. Q., Engku Ali, E. I., & Numan, M. (2019). The mediating role of innovation between corporate governance and organizational performance: Moderating role of innovative culture in Pakistan textile sector. *Cogent Business & Management*, 3(1). <https://doi.org/10.1080/23311975.2019.1631018>
46. Pillai, R., & Al-Malkawi, H. A. N. (2018). On the relationship between corporate governance and firm performance: Evidence from GCC countries. *Research in International Business and Finance*, 44, 394–410. <https://doi.org/10.1016/j.ribaf.2017.07.110>
47. Queiri, A., Madbouly, A., Reyad, S., & Dwaikat, N. (2021). Corporate governance, ownership structure and firms' financial performance: insights from Muscat securities market (MSM30). *Journal of Financial Reporting and Accounting*, 19(4), 640–665. <https://doi.org/10.1108/JFRA-05-2020-0130>
48. Raithatha, M., & Komera, S. (2016). Executive compensation and firm performance: Evidence from Indian firms. *IIMB Management Review*, 28(3), 160–169. <https://doi.org/10.1016/j.iimb.2016.07.002>
49. Rashid, A. (2018). Board independence and firm performance: Evidence from Bangladesh. *Future Business Journal*, 4(1), 34–49. <https://doi.org/10.1016/j.fbj.2017.11.003>
50. Reed, R., Donohue, W. J., & Barnes, S. F. (2004). Predicting misleading disclosures: The effects of control, pressure, and compensation. *Journal of Managerial Issues*, 16(3), 322–336. Retrieved from <https://www.jstor.org/stable/40604484>
51. Smith, C. W., & Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*, 32(3), 263–292. [https://doi.org/10.1016/0304-405X\(92\)90029-W](https://doi.org/10.1016/0304-405X(92)90029-W)
52. Steenkamp, G., Dippenaar, M., Fourie, C., & Franken, D. (2019). Share-based remuneration: Per-director disclosure practices of selected listed South African companies. *Journal of Economic and Financial Sciences*, 12(1), 1–12. <https://doi.org/10.4102/jef.v12i1.400>
53. Steenkamp, G., & Wesson, N. (2018). Share-based incentives for South African CEOs: Trends 2002–2015. *South African Journal of Accounting Research*, 32(1), 46–70. <https://doi.org/10.1080/10291954.2017.1409869>
54. Vemala, P., Nguyen, L., Nguyen, D., & Kommasani, A. (2014). CEO compensation: Does financial crisis matter? *International Business Research*, 7(4), 125–131. <https://doi.org/10.5539/ibr.v7n4p125>