

Does The Board Diversity Influence Bank Performance In Jordan?

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among others (e.g. Khadash and Washali, 2019; Manyaga et al., 2020; Tahtamouni et al., 2020; Tarigan et al., 2019).

In this context, it is known that managers are agents of shareholders to manage the company on their behalf. Because they are not owners, they may pursue their own interests instead of shareholders' interests, which is known as agency problem (Guest, 2008). This conflict has been widely addressed by the literature with the purpose of efficiently managing it to protect shareholders' interests. In this regard, many researchers and academics argue that more board diversity is critical to minimize the costs of the agency problem (Gordini and Rancati, 2017). This, in sequence, may improve the financial performance of companies (Fallatah and Dickins, 2012).

The findings of numerous empirical studies, however, regarding the impact of board diversity on companies' financial performance are not conclusive. More specifically, some studies provide evidence that board diversity has significant positive effect on financial performance (e.g. Kim et al., 2013; Nielsen and Nielsen, 2013). Other studies confirm that board diversity negatively affects financial performance (e.g. Carter et al., 2010; Kilic, 2015), and yet some studies conclude that board diversity has no significant effect at all on financial performance (e.g. Jhunjunwala and Mishra, 2012; Mahadeo et al., 2012).

Thus, the current study adds to the body of literature by supplying additional empirical proof of the effect of board diversity on banks' financial performance. To the researcher's best knowledge, this is the first study that investigates the effect of board diversity on bank financial performance using data from the Jordan exchanges.

In light of the increasingly competitive and dynamic banking sector, pressure from shareholders to improve financial results is mounting on bank boards. In fact, the issue of board diversity has been at the heart of best corporate governance practices due to its potential impact on corporate performance. This paper aims to examine the effect of board diversity on the financial performance of banks listed on Amman Stock Exchange (ASE).

Though, the relationship between board diversity and financial performance is somewhat a recent issue with limited empirical studies in this context. Especially in Jordan. More specifically, those empirical studies have no conclusive results (Mans-

Abstract

This study investigate the impact of board composition, particularly board diversity, on bank performance using cross-sectional data from the Jordan Stock Exchange for the years 2009-2019, this study seeks to fill gaps in the literature. As far as we are aware, this paper's contribution is to investigate how board diversity—including age, gender, education, experience, and nationality—affects bank performance. Our results indicate that age diversity has no impact on the financial performance of Jordanian banks.

Furthermore, education, nationality, experience diversity has a positive effect on bank performance of Jordanian banks. Ultimately, our result reveals that gender diversity has no effect on bank performance of Jordanian.

Keywords : Board diversity, Bank Performance, Jordan stock exchange

Introduction

Recently, corporate governance issues have increasingly received much attention all over the world. Corporate governance in this context is described as the framework for directing and controlling businesses. This structure determines rights and responsibilities among many players in the company, such as board of directors, executive management, shareholders and other stakeholders, and specifies the guidelines and procedures for the decision-making process (OECD, 2015).

The principles of corporate governance set by the Organization for Economic Cooperation and Development (OECD) covers six areas: (1) basis for corporate governance structure, (2) rights and equitable treatment of shareholders, (3) institutional investors, stock markets, and other intermediaries, (4) role of stakeholders, (5) disclosure and transparency, and (6) responsibilities of the board (OECD, 2015).

Board diversity is among the most frequently studied topics in the governance literature because boards are the foundation of corporate governance. This is primarily due to the belief that diversity is essential for boards to effectively perform their supervisory roles. This, in turn, may affect some corporate variables including financial performance, therefore, many academics and researchers investigated variables such as gender, age, nationality, education, and experience diversities,

members, which could affect their views, behaviors, and so on. In short, it refers to variations in the manner boards are formed (Ararat et al., 2010).

2.3 Dimensions of Board Diversity.

Many academics and researchers divide board diversity into two categories: that which can be observed and that which is less observable. The first includes characteristics such as gender, age, and origin. On the other hand, the second includes features like education, experience, and skills (e.g. Galia & Zenou, 2013; Rao & Tilt, 2016).

Moreover, board diversity can be viewed in terms of demographic diversity, human capital diversity, and social capital diversity. Demographic diversity consists of gender, age, and origin. Human capital diversity includes education, professional experience, and skills among others. Finally, social capital diversity covers relationships, status, prestige and organizational membership (Johnson et al., 2013.)

Many academics and researchers identified gender, ethnicity, education, experience, tenure, and independency as the main dimensions of board diversity (e.g. Anderson et al., 2011.) Additionally, task-based diversity and relation-based diversity are categories for board diversity. Membership, experience, education, skills, and capabilities are among the features of the former, while networking, affiliation with various groups, social standing, attitudes, morals, and behavior patterns are among the latter (Joshi & Roh, 2009).

While investigating the impact of board diversity on corporate performance, many researchers and academics included member independence (e.g. Crespi-Cladera & Pascual-Fuster, 2014) and gender diversity (e.g. Adams & Ferreira, 2009) as two essential dimensions of board diversity. On the other hand, other researchers and academics identified attributes like gender, age, ethnicity, education, experience, and occupation as main dimensions of board diversity (e.g. White et al., 2014).

Despite the fact that the effects of gender diversity have been extensively studied in the literature, as noted by Adams (2016) and Christiansen et al., authors have not yet come to a consensus (2016). Evidence suggests that the presence of women on the board may serve as a source of experiences for the members of the board due to the roles' quality and outside exposure (Kopczuk, Saez & Song, 2010). Additionally, Miller and Triana (2009) talked about how having female directors may help the company be able to turn a profit by leveraging both its investments and its assets. In addition, female directors support the company's ability to make decisions that will improve financial success. In this regard, the inclusion of diverse opinions (including the perspective of women) tends to improve the firm's ability to make decisions (Loyd et al., 2013). According to the European Commission (2012), listed European companies that embrace gender diversity

Kemp and Viviers, 2015). Therefore, it is important to answer the following research question:

What is the effect of board diversity on the financial performance of banks listed on the Amman exchange?

only few studies have been dedicated to the impact of board diversity on the banks performance in Jordan, so more empirical studies on this topic need to be carried out, especially in developing countries , also Corporate governance issues, including board diversity, might affect the financial performance of banks. Therefore, these issues are of increasing importance to all stakeholders. This study will provide additional empirical evidence of whether board diversity affects the financial performance of bank.

1.6 Theoretical Framework

Figure 1.1 depicts the conceptual model of the study where each of the five board diversity variables is hypothesized to have a significant direct impact on the financial performance of the banks listed on the Jordan exchanges, in terms of ROA and ROE. More specifically, the five board diversity variables are the independent variables, (Gender, age, nationality, education and experience). with the financial performance is the dependent variable. The model also includes the control variables that are incorporated in the regression equation to account for bank-specific characteristics.

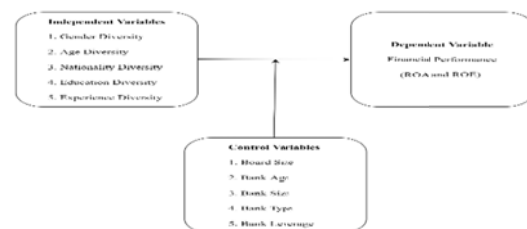


Figure (1.1) Conceptual Model of Study

Literature Review and Hypothesis Development

2.2 Concept of Board Diversity

There is no general agreement on the definition of board diversity among academics and practitioners (Hafsi & Turgut, 2013) since the literature provides many important definitions. According to (Goyal et al., 2019), Board diversity is the process of creating a board that accurately reflects the demographics of the stakeholders and the community in which an organization operates. The intention behind this diversity is to have board members with a diverse range of traits and viewpoints.

Mahadeo et al. (2011) defined board diversity as variation inherent in the structure of the board. This variation can be grouped into visible diversity (e.g. gender, age, nationality, and origin) and less observable visible (e.g. education, skills, and experience). Board diversity is defined as having diverse characteristics and features among board

conflict issues (Eulerich et al., 2014; Ruigrok et al., 2007). (Hahn and Lasfer, 2016). However, the presence of participatory procedures in businesses can aid in maximizing the benefits of diversity. According to Richard et al. (2013), businesses can avoid possible difficulties associated with multi-cultural diversity by implementing collaborative strategy-making practices that can lessen conflict and foster knowledge sharing. Therefore, we anticipate that the presence of individuals from many countries on corporate boards will benefit the company, increase decision-making, and eventually improve financial performance. Tarigan et al. (2019) As a result, the following claim is examined:

H3: Nationality diversity has a significant positive effect on the financial performance of the banks listed on Amman Exchange.

The performance of the company may be impacted by age diversity in either a good or bad way. Age diversity may benefit the board's abilities, resources, know-how, experience, and connections, which in turn may benefit corporate performance. However, age variety may be linked to cognitive disputes and poor teamwork, which in turn have a negative effect on business performance.

Age-diverse boards are shown in several research to boost a company's financial performance (Ali & French, 2019; Ararat et al., 2017; Kim & Lim, 2010; Mahadeo et al., 2012). Other studies have discovered a negative relationship between age diversity and a firm's social performance (Hafsi & Turgut, 2013; Kunze, Boehm, & Bruch, 2011; Talavera, Yin, & Zhang, 2018); profitability (Abdullah & Ismail, 2013; Ali, Ng, & Kulik, 2014; Talavera et al., 2018); and strategic reforms (Kipkirong Tarus & Aime, 2014). However, some researchers did not discover a substantial link between age diversity and business performance (Randøy, Thomsen, & Oxelheim, 2006).

H4: Age diversity has a significant positive effect on the financial performance of the banks listed on Amman Exchange.

Members of the board may have expertise in areas such as finance, consulting, law, the environment, and others (Harjoto et al., 2014). "Directors originating from varied corporate, socioeconomic, technical, and professional backgrounds could give managers with a broader and deeper knowledge base than board members from more homogeneous backgrounds," write Anderson et al. (2011, p. 8) in their article. The Australian research by Gray and Nowland is a progression of this investigation (2015). They claim that the board of directors needs a suitable mix of skills to successfully oversee and guide the organization. According to their research, companies with outside CEO skills and board members with legal, accounting, consulting, and banking backgrounds will benefit shareholders. However, a more diverse range of expertise on the board might result in lessening firm performance and value (Gray & Nowland, 2015). Consequently, we propose that:

will be able to achieve higher, sustainable levels of economic growth (Adams, 2016). Last but not least, Christiansen et al. (2016) found a two-way causation between women's representation on boards and business performance, with the authors proposing that a top-performing firm can attract women and increase their board membership. While this was going on, Rose (2007) found that, in the case of Danish companies, the representation of female board members had no appreciable impact on the performance of the companies (using Tobin's Q as a proxy). Additionally, Zhong, Faff, Hodgson, and Yao (2014) discovered that a company's profitability declines in direct proportion to the number of women on the board of directors. In addition Mohammad et al. (2018) examined the impact of gender diversity on the banks' financial performance. the hypothesis is formulated as:

H1: Gender diversity has a significant positive effect on the financial performance of the banks listed on Amman exchanges.

Education level. The most valuable and imperfectly imitable resource on the board of directors is heterogeneity of expertise (Katmon et al., 2019; Crook et al., 2011). Human capital theory (Becker, 1964) states that a person's accumulated stocks, such as education level, skills, and experience, are very important in boosting cognitive and productive capacities that are advantageous to organizations. High-skilled board members may lead to better financial performance and strategic decision-making. (Setiyono & Tarazi, 2018; Roberson et al., 2017; Jordaño & Almeida, 2017) Therefore, we anticipate that diversity in directors' educational backgrounds will have a good impact on the financial success of the company. While directors with lower levels of education are more likely to offer practical and technical skills to the corporate board, it is believed that directors with higher levels of education will be more likely to have more analytical thinking skills and information processing capacities. The board of directors' diverse educational backgrounds may be able to assist the company in implementing the greatest financial performance-improving methods. Consequently, we propose that:

H2: Education diversity has a significant positive effect on the financial performance of the banks listed on Amman exchanges.

Nationality. The most valuable and distinctive resource the company has is the presence of international members on the corporate board. Diversity of nationality on the board of directors is a significant element that may have an impact on how decisions are made and, ultimately, how well a company performs. (Katmon et al.,

2019; Ruigrok, 2009).

Nationality variety can be a double-edged sword, presenting issues including cross-cultural communication challenges, misconceptions, and

specific criteria. First, the bank has to be listed on the Exchange of, Jordan, annual reports for the years 2010-2019 must be readily available and easily accessible. Finally, all data on the dependent, independent, and control variables for the years 2010-2019 must be available and accessible.

According to the above three criteria, the study considers 15 banks listed on Amman Stock Exchange (ASE) with a total of 150 observations.

3.5 Variables and Their Measurement:

In this study, three types of variables are used (dependent, independent, and control variables). First, the dependent variable in this study is the financial performance of the banks listed on the Arab West Asian exchanges. This variable is measured using return on assets (ROA) and return on equity (ROE). Second, the variables that capture board diversity are the independent variables. These variables include gender diversity, age diversity, nationality diversity, education diversity, experience diversity, and independence diversity.

Finally, since the characteristics of each bank have an impact on the corporate governance practices, and thus a potential impact on financial performance (Grove, 2011), it is important to include some control variables in the regression model to mitigate this impact. Namely, board size, bank age, bank size, bank type, and financial leverage are used as control variables.

The different types of variables used in this study and their measurement are explained in Table 3.1.

Table (3.1): Variables and Their Measurement

Bank age	Total number of years since incorporation	Charles et al. (2018)
Bank size	Natural log of total assets	Alia et al. (2020)
Bank type	0 if commercial bank, 1 if Islamic bank	Elnahass et al. (2020)
Bank leverage	% of total liabilities to total assets	Gordini&Rancati (2017)

3.6 Statistical Analysis Techniques

It aims to describe the study variables and use econometric methods to test the study hypotheses. The following statistical methods were used:

1- Descriptive statistical indicators for the dependent and independent variables of the study, which are represented by mean, median, standard deviation, the maximum value and the minimum value.

2- Linear Correlation Coefficient (Pearson)

3- Unit root test to check the stability of time series using Levin, Lin, Chu (LLC) test.

4- Tests of selection the appropriate model to study the relationship between the independent

H5: Experience diversity has a significant positive effect on the financial performance of the banks listed on Amman exchanges.

3.2 Research Approach

Empirical studies, particularly in social sciences, could be quantitative, qualitative, or mixed in nature (Sekaran and Bougie, 2016). This study adopts the quantitative hypotheses-testing empirical approach whereby the necessary data are obtained from secondary sources including the annual reports of the banks banks that are listed on the (PEX), Amman Stock Exchange (ASE), period from 2010 to 2019).

3.3 Data Sources

In this study, the secondary data sources are used. More specifically, the data on the dependent variable (i.e. financial performance as measured by ROA and ROE), independent variables (i.e. board diversity variables), and control variables (bank-specific characteristics) are obtained from the published annual reports of the banks listed on Amman exchanges from 2010 to 2019. These annual reports are extracted from the banks' websites and the stock exchanges.

3.4 Population of Study and Sample Selection

The population of a given study is the set including all individuals, objects, events, things, and so on that the researcher is interested in studying. On the other hand, the sample of the study is a subset of the whole population (Sekaran and Bougie, 2016).

On the other hand, a sample of the entire population is purposively selected according to three

Variable	Measurement	Reference
Dependent variable (Financial performance)		
ROA	% of net income to total assets	Kilic (2015)
ROE	% of net income to total equity	Kilic (2015)
Independent variables (Board diversity)		
Gender diversity	% of female members to total members	Gordini&Rancati (2017)
Age diversity	Standard deviation of ages of board members	Jhunjhunwala& Mishra (2012)
Nationality diversity	% of foreign members to total members	Jhunjhunwala& Mishra (2012)
Education diversity	% of high education members to total members	Jhunjhunwala& Mishra (2012)
Experience diversity	Std. dev. of board members' years of experience	Jhunjhunwala& Mishra (2012)
Control variables (Bank-specific characteristics)		
Board size	Total number of board members	Gordini&Rancati (2017)

methods. Ordinary least squares (OLS) regressions with dummies, in fact, are fixed effect models (Baltagi, 2008).

$$Y_{it} = \sum D_{it}\beta_i + \beta_1 X_{it} + u_{it}$$

Random Effects Estimation The fixed effects model assumes that each group (firm) has a non-stochastic group-specific component to y . Including dummy variables is a way of controlling for unobservable effects on y . But these unobservable effects may be stochastic (i.e. random). The Random Effects Model attempts to deal with this:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + V_i + \varepsilon_{it}$$

Here the unobservable component, v_i , is treated as a component of the random error term. v_i is the element of the error which varies between groups but not within groups. ε_{it} is the element of the error which varies over group and time.

3.7 Model Selection

Many tests are used to choose the best estimation model to estimate the panel data, such as:

1. Chow Test

Chow test is used to check whether Common Effect (CE) or Fixed Effect (FE) is most appropriately in estimating panel data.

If Results:

H_0 : CE is most appropriate in estimating ($p > 0.05$)

H_1 : FE is most appropriate in estimating ($p < 0.05$)

2. Hausman Test

Hausman test is used to check whether Random Effect (RE) or Fixed Effect (FE) is most appropriate in estimating panel data.

H_0 : RE is most appropriate in estimating ($p > 0.05$).

H_1 : FE is most appropriate in estimating ($p < 0.05$).

Descriptive Statistics

Table (3.2): Descriptive Statistics of Variables for Banks in Jordan

Experience diversity	0.300	10.150	4.512	2.314
Education diversity	0.110	0.920	0.543	0.164
Control variables (Bank-specific variables)				
Board size	7.000	15.000	11.000	1.000
Bank age	24.000	89.000	48.400	15.353
Bank size (\$million)	268.000	25,900.000	3,710.000	5,860.000
Bank type	NA	NA	NA	NA
Bank leverage	0.590	0.930	0.856	0.044

variables and the dependent variable, the Chow test and the Hausman test.

5- Studying the relationship between the study variables using appropriate models for cross-sectional data with time series (Panel Data), which are the common effect model, and the fixed or random effect model, based on the results of the appropriate model selection tests.

3.7 Unit Root Test

The importance of this test lies in knowing the stability of the time series, and determining the degree of its integration, as the data is free from the unit root problem, meaning that the data is stationary, and knowing the degree of deceleration necessary for its stability will limit the problem of false regression for the study variables. To examine this problem, the Levin, Lin, Chu (LLC) test is usually applied in the case of cross-sectional time-series data, and the hypotheses of this test are as follows:

H_0 : the data contains a unit root ($p > 0.05$)

H_1 : The data does not have a unit root ($p < 0.05$)

3.8 Research Model

Panel data sets refer to sets that consist of both time series and cross section data. For instance, if we have 10 years of data across 10 countries, we have 100 observations. So, there would not be enough to estimate the model as a time series or a cross section, there would be enough to estimate it as a panel.

Panel data models examine fixed and/or random effects of entity (individual or subject) or time. The core difference between fixed and random effect models lies in the role of dummy variables. If dummies are considered as a part of the intercept, this is a fixed effect model. In a random effect model, the dummies act as an error term. A fixed group effect model examines group differences in intercepts, assuming the same slopes and constant variance across entities or subjects. Fixed effect models use least squares dummy variable (LSDV) and within effect estimation

Variable	Minimum	Maximum	Mean	Std. Dev.
Dependent variable (Financial performance)				
ROE	-0.013	0.025	0.012	0.005
ROA	-0.032	0.176	0.088	0.040
Independent variables (Board diversity)				
Gender diversity	0.000	0.285	0.062	0.072
Age diversity	5.340	16.500	11.379	2.647
Nationality diversity	0.000	0.830	0.300	0.194

The results also indicate that the average number of board members in the Jordanian banks is 11 members, with a minimum value of 7 members and a maximum value of 15 members. Additionally, the results indicate that the average age of banks in Jordan is nearly 48 years, with a minimum value of 24 years and a maximum value of 89 years. Moreover, the average size of the assets of Jordanian banks is \$3,710 million, ranging between a minimum value of \$268 million and a maximum value of \$25,900 million. Finally, the average financial leverage of Jordanian banks is roughly 86 percent, ranging between a minimum value of 59 percent and a maximum value of 93 percent.

Linear correlation matrix

The purpose of calculating the correlation coefficient (Pearson) is to measure the

strength of the relationship between two quantitative variables, and the value of this coefficient ranges between 1 and -1. The closer this coefficient is to 1, this indicates the strength of the positive relationship between the two variables. Whereas, the closer to -1, the stronger the negative relationship between the two variables. While the value of this parameter approaches 0, this indicates that there is no relationship between the two variables. In the sense that the value of the correlation coefficient (Pearson) indicates the strength or weakness of the relationship between the two variables investigated. Table (4-2) shows the value of the correlation coefficient (Pearson) between the study variables.

Table (4-2) shows that the value of the Pearson correlation coefficient is not high enough to show the relationship between the control and dependent variables and the dependent variables. This is due to the fact that the variables that represent the characteristics of board members in banks

do not interact with this test enough to clarify the relationship. Therefore, study models will be applied.

Table (4-3): Results of the unit root test for the study variables

Country	Variables	P-value	Result
Jordan	ROA	0.00000	No unit root
	ROE	0.00000	No unit root
	B_LEVERAGE	0.00030	No unit root
	BSIZE	0.00000	No unit root

This research aims to examine the impact

of board diversity on the financial performance of banks based on the data with cross-sectional time series collected for banks in four countries. where the relationship was studied for all countries by building

4.2.2 Descriptive Statistics of Variables for Banks in Jordan

The descriptive statistics of board diversity variables, financial performance variables, and control variables for the banks in Jordan are shown in Table 3.2. The results of financial performance of banks in Jordan indicate that the mean value of return on equity (ROE) is 0.012. This means that every dollar of equity yields, on average, a profit of \$0.012. This mean value ranges between a minimum value of -0.013 and a maximum value of 0.025. Regarding return on assets (ROA), the results indicate that it has a mean value of 0.088. This means that every dollar of investment in assets achieves, on average, a profit of \$0.088. This mean value ranges between a minimum value of -0.032 and a maximum value of 0.176. With respect to gender diversity, the results indicate that the mean value of female members to total members in boards is 6.2 percent, ranging between a minimum value of 0 and a maximum value of 28.5 percent. Moreover, the mean value of the dispersion in the ages of board members is approximately 11.38 years, with a minimum value of 5.34 years and a maximum value of 16.50 years. In addition, the results indicate that foreign members on the boards represent, on average, 30 percent of total board members, with a minimum value of 0 percent and a maximum value of 83 percent. Furthermore, the mean value of the dispersion in the years of experience of board members is nearly 4.51 years, with a minimum value of 0.30 years and a maximum value of 10.15 years. The results also indicate that, on average, 54.3 percent of board members hold high education degrees, with a minimum value of 11 percent and a maximum value of 92 percent.

country variable	Jordan	
	ROE	ROA
ROE	1.000	
ROA	0.829	1.000
National Diversity	0.125	0.137
Gender Diversity	-0.113	-0.050
Experience Diversity	0.077	0.107
Education Diversity	0.170	0.245
Bank Size	-0.033	-0.007
Board Size	0.059	0.027
Bank Age	-0.081	-0.095
Bank Leverage	0.438	0.118
Age Diversity	0.139	-0.052

Table (4-3) shows the results of the Unit Root Test for the study variables to ensure the stability of the time series, as the data being free from the unit root problem means that the data is stable over time, which will limit the problem of false regression for the study variables. The results show that the probability test < 0.05 for all variables, this leads to the rejection of the null hypothesis with the presence of a unit root, and this means that the study variables are free from the unit root problem, that is, the time series of the studied variables are stable, which can be used in the study models.

Research models

and the test probability value was > 0.05 for all models except ROA for Lebanon, which leads to accepting the null hypothesis which states that the common effect model is the best to test the study hypotheses except.

Results of tests to determine the best model for estimating ROA			
Country	Test	P-value	Result
Jordan	Chow Test	0.6636	Common effect model is most appropriated
	Hausman Test	Unable	Fixed effect model
Results of tests to determine the best model for estimating ROE			
Jordan	Chow Test	0.3511	Common effect model is most appropriated
	Hausman Test	Unable	Fixed effect model

Panel Data Regression Models

In this section, the panel data regression models are estimated to be used in the next step in hypotheses testing. In this context, it is worth noting that for each of the five hypotheses, two regression models are estimated for each of the four countries, and two models for all countries together. One of the two models is estimated using return on equity (ROE), and the other is estimated using return on assets (ROA) as indicators of financial performance.

Table (4.8): Regression Results for Jordanian Banks Using ROE

variables. The value of R2 (= 0.305) indicates that all of the variables included in the regression model explain approximately 31% of the variation in the dependent variable (i.e. ROE). Moreover, the value of F-statistic (< 0.05) indicates that the regression model as a whole is significant.

The results of Table 4.8 confirm that gender diversity of board members has no significant effect on return on equity (ROE) in the Jordanian banks since the p-value (=0.3436) is higher than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of gender do not achieve higher return on equity (ROE) compared with banks having less diverse boards. These results are consistent with the Palestinian banks, because Palestinian banks have strong relations with the Jordanian banking sector (Rose , 2007).

Whereas The results of Table 4.8 confirm that age diversity of board members has no significant effect on return on equity (ROE) in the Jordanian banks since the p-value (=0.9596) is higher than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of age do not achieve higher return on equity (ROE) compared with banks having less diverse boards.

In addition The results of Table 4.8 confirm that nationality diversity of board members has a significant positive effect on return on equity (ROE) in the Jordanian banks since the p-value (=0.0359) is

two models, and then studied according to each country. These models were as follows:

4-4-1 ROA Models:

$$ROA_{\text{Jordan}} = \alpha + \beta_1 GD + \beta_2 AD + \beta_3 ND + \beta_4 ED + \beta_5 \text{ExpD} + \beta_6 \text{Bo_Size} + \beta_7 \text{BAge} + \beta_8 \text{BSize} + \beta_9 \text{Type} + \beta_{10} \text{B_Leverage} + u.$$

4-4-2 ROE Models:

$$ROE_{\text{Jordan}} = \alpha + \beta_1 GD + \beta_2 AD + \beta_3 ND + \beta_4 ED + \beta_5 \text{ExpD} + \beta_6 \text{Bo_Size} + \beta_7 \text{BAge}.$$

(α : Constant , GD: Gender Diversity , AD: Age Diversity , ND: National Diversity ED: Education Diversity , ExpD: Experience Diversity ,Bo_size: Board Size , BAge: Bank Age , Bsize: Bank Size , Btype: Bank Type , B_Leverage: Bank Leverage ,u: Error term.)

Results of choosing the best estimation model

Table (4) indicates the results of the tests used to determine the best model for each of the general estimation model which includes all countries, and estimation models according to the nature of each country. Hausman test and Chow test were applied to select the best model. When applying Hausman's test, it was found that the random effect model cannot built except for ROA Lebanon model, which called for rejecting the null hypothesis which states that the random effect model is the best. Then the Chow test was applied to determine the best model between the common regression model and the fixed effect model,

Constant & Variables	Coefficient	Std. Error	t-Statistic	Sig.
Constant	-0.310627	0.07183	-4.324476	0.0000
Gender diversity	-0.046943	0.049378	0.950683	0.3436
Age diversity	-6.45E-05	0.00127	-0.05082	0.9596
Nationality diversity	0.036317	0.017125	2.120675	0.0359*
Education diversity	0.080875	0.026344	3.069894	0.0026*
Experience diversity	0.001038	0.002229	0.465774	0.6422
Board size	0.005074	0.002456	2.066026	0.0409*
Bank age	0.000284	0.000454	0.625528	0.5328
Bank size	-1.33E-12	9.42E-13	1.410889	0.1608
Bank type	0.011158	0.010585	1.054159	0.2939
Bank leverage	0.424644	0.076349	5.56191	0.0000*
R ²	0.305312			
F-Statistic	0.000001			

* Significant at the 0.05 level.

The results of the panel regression model for Jordanian banks using return on equity (ROE) as a dependent variable are shown in Table 4.8. The model includes five diversity variables as independent variables and five bank-specific variables as control

(ROE) compared with banks having less diverse boards.

The results of Table 4.8 confirm that experience diversity of board members has no significant effect on return on equity (ROE) in the Jordanian banks since the p-value (=0.6422) is higher than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of experience do not achieve higher return on equity (ROE) compared with banks having less diverse boards.

Table (4.9): Regression Results for Jordanian Banks Using ROA

since the p-value (=0.2724) is higher than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of age do not achieve higher return on assets (ROA) compared with banks having less diverse boards.

Whereas the results of Table 4.9 confirm that nationality diversity of board members has no significant effect on return on assets (ROA) in the Jordanian banks since the p-value (=0.0812) is higher than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of nationality do not achieve higher return on assets (ROA) compared with banks having less diverse boards.

Similarly the results of Table 4.9 confirm that education diversity of board members has a significant positive effect on return on assets (ROA) in the Jordanian banks since the p-value (=0.0029) is less than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of education achieve higher return on assets (ROA) compared with banks having less diverse boards.

The results of Table (4.9) confirm that experience diversity of board members has no significant effect on return on assets (ROA) in the Jordanian banks since the p-value (=0.7451) is higher than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of experience do not achieve higher return on assets (ROA) compared with banks having less diverse boards.

Concluding remarks

The results above may indicate some common characteristics in terms of board diversity and bank performance in Jordan. In keeping with earlier research, we presume that the outcome helps the board of directors improve bank performance. The main objective examine the relationship amongst board diversity and banks performance in Jordan. The authors draw from the agency theory to examine the issue. 15 listed in Amman exchange for the period 2010–2019 inclusive.

We find that a statistically significant and positive association between nationality diversity, Education diversity and bank performance in Jordan stock

less than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of nationality achieve higher return on equity (ROE) compared with banks having less diverse boards.

Similarly The results of Table 4.8 confirm that education diversity of board members has a significant positive effect on return on equity (ROE) in the Jordanian banks since the p-value (=0.0026) is less than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of education achieve higher return on equity

Constant & Variables	Coefficient	Std. Error	t-Statistic	Sig.
Constant	-0.003564	0.010298	-0.34604	0.7299
ender diversity	-0.002447	0.007079	-0.34571	0.7301
Age diversity	-0.000201	0.000182	-1.10255	0.2724
Nationality diversity	0.004317	0.002455	1.758338	0.0812
Education diversity	0.011491	0.003777	-3.04241	0.0029*
Experience diversity	0.000104	0.00032	0.325846	0.7451
Board size	0.00058	0.000352	1.645847	0.1023
Bank age	3.59E-05	6.50E-05	0.551733	0.5821
Bank size	-1.51E-13	1.35E-13	-1.11881	0.2654
Bank type	-0.003089	0.001517	-2.03592	0.0439*
Bank leverage	0.017366	0.010946	1.586565	0.1152
R ²	0.184793			
F-Statistic	0.003531			

* Significant at the 0.05 level.

The results of the panel regression model for Jordanian banks using return on assets (ROA) as a dependent variable are shown in Table 4.9. The model includes five diversity variables as independent variables and five bank-specific variables as control variables. The value of R² (=0.184) indicates that all of the variables included in the regression model explain approximately 18% of the variation in the dependent variable (i.e. ROA). Moreover, the value of F-statistic (< 0.05) indicates that the regression model as a whole is significant.

Whereas the results of Table 4.9 confirm that gender diversity of board members has no significant effect on return on assets (ROA) in the Jordanian banks since the p-value (=0.7301) is higher than the 0.05 level of significance. This means that Jordanian banks having more diverse boards in terms of gender do not achieve higher return on assets (ROA) compared with banks having less diverse boards.

In addition the results of Table 4.9 confirm that age diversity of board members has no significant effect on return on assets (ROA) in the Jordanian banks

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exchange due to these diversities improve bank accounting returns ,whereas, the results show that the presence of female directors have no association with bank performance, suggesting that homogeneous boards in terms of gender make better strategic decisions than diverse ones.

In addition there are no associations between board experience, age with the bank performance in Jordan stock exchange.

In Jordanian banks, the majority of boards with female directors only have one, which is regarded as a token. The influence of female directors on the decision-making process may be hampered by the low number of women on corporate boards of Jordanian banks. The critical mass theory claims that once a certain number of female directors are on the board, the effectiveness of the board and the decision-making process improve. Therefore, companies should promote more women to leadership positions, such as on boards of directors, in order to optimize the value and efficacy of women's presence on the board of directors on business performance.

Future studies should examine the impact of board diversity on the performance of banks for both executive and non-executive directors. As a result, this will improve and expand the corporate governance literature.

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