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The Impact of Board Diversity on the Financial Performance of The Libyan Banks

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ABSTRACT:

This study examines the effect of board diversity characteristics on financial performance of Libyan commercial banks. It focuses on various board diversity characteristics such as Board Education Skills (BES), Board Independence (BI), and CEO-Duality (CEOD). However, it aims to address the lack of empirical evidence on how these characteristics influence financial performance in developing economies, particularly in Libya. The study achieves that by evaluating board diversity's impact on the two financial metrics: return on assets (ROA) and return on equity (ROE). The research employs a quantitative research methodology using reports from 7 Libyan commercial banks for the period between 2007 and 2021. It uses Structural Equation Modeling (SEM) as the main analytical tool to examine the effect of board diversity characteristics on the financial performance of the Libyan banks. Data analysis is conducted using the IBM SPSS AMOS 29 program. It examined the diversity-performance relationship, both with and without moderating variables. The findings indicate that BES and BI significantly and positively affect ROA and ROE, while CEOD shows no significant effect. The study's second finding reveals that moderating variables such as bank size, age, and leverage strengthens the effect of board diversity characteristics on financial performance. The research establishes that board diversity, when strategically aligned with bank-specific attributes, enhances corporate governance quality, and drives superior financial performance in Libyan commercial banks. It makes an original contribution to the governance literature in developing and transitional economies.

Keywords: Board Diversity, Financial Performance, Board Independence, Board Skills (Education), CEO-Duality, Corporate Governance

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1. Introduction:

Corporate governance (CG) is a major framework through which modern organisations are managed and controlled. It gained prominence in the years following the 2007-2008 global financial crisis, which exposed weaknesses in the governance structures across many economies. Since then, corporations have strengthened their governance practices to enhance accountability, transparency, and financial performance. Within this framework is board diversity, which emerged as a critical element due to its ability to influence strategic decision-making and financial performance. Board diversity encompasses a wide range of backgrounds, ethnicities, skills, and experiences within the board. It describes a board with mixed individuals with different attributes whose influence on the financial performance is positively significant (García-Meca et al., 2015; Mateos de Cabo et al., 2012). These characteristics include BI, CEOD, and BES. Understanding how these attributes affect financial performance is essential for developing effective corporate governance strategies, particularly in transitional economies.

Board diversity is becoming an essential element in transitioning economies like Libya because global investors and regulators increasingly demand inclusive governance as evidence of accountability and transparency. There has been a shift in corporate governance since 2015, which stemmed from the economic pressure, investor expectations, and governance reforms in most unstable transforming markets (OECD, 2025). The shift is a move from the traditional compliance-focused governance to strategic governance. It engendered the environment where board diversity functions as an intervention to corporate governance issues.

This novel environment also functions as a solution to institutional frameworks that lack maturity (Mahadeo et al., 2012). Board diversity has also assumed a role of protecting firms from corruption, political manipulation, and mismanagement that were prevalent in the pre-2011 Libyan political climate. Globally, nations are also acknowledging the importance of board diversity.

The growing convergence of governance codes increased regulatory enforcements, and international cooperation demonstrate that countries view corporate governance as an essential framework to economic development and financial stability (Buchetti et al., 2025). The diversity of the board members continues to be reinforced by global investors and international standards. Their pressure has transformed this framework from a recommendation to a necessity across both developed and emerging economies like Libya.

Board diversity as an essential element enhances decision making by bringing together various perspectives to challenge conventional wisdom. It is also helping corporations by identifying and mitigating risks associated with blind spots and biases. Diversity attributes force organisations to adhere to regulatory frameworks and ethical standards, reducing legal issues. For example, the UK Financial Reporting Council (FRC) introduced the UK Corporate Governance Codes that emphasized the importance of board diversity. Most organisations, including Unilever, now adhere to these statutes, enhancing gender, national, and professional diversity.

Even though board diversity continues to be an essential element of corporate governance, it faces several barriers. The significant one is tenure. In most organisations, directors serve consecutive years regardless of their performance. Boards have to rely on retirement or voluntary retirement to make changes. This security makes it hard to recruit fresh, unique talents until the existing ones retire or willingly resign. The recruitment process is the other major barrier to board diversity. During recruitment, most directors have to rely on their networks to find potential candidates. Since their networks consist of individuals sharing their attributes, creating a diverse pool becomes difficult. The third barrier is the legal requirement of each organisation. Some corporate laws require board members to have a certain number of years, specific qualifications, legal certifications, and experience on other boards. Many potential candidates remain excluded when they do not meet such rigid criteria.

Board diversity is also a major source of conflicts for organisations in both developed and transitioning economic environments. Since diversity entails having individuals with various attributes on the board, frictions often occur between members. Similarly, stereotyping is common whenever a new director with different attributes becomes a board member. This issue could split the board. Board diversity is also problematic in that it limits communication. Differences in gender and age often limit communication among subgroups. Such a limitation creates conflict and reduces teamwork (Ferreira, 2010). Board diversity also engenders a situation whereby the board has many members with

inadequate experience and qualifications. If qualified candidates are in short supply, the board seats are likely to have more unqualified members (Ferreira, 2010). Board diversity also leads to conflict of interest that stems from some board members pushing certain agendas. Such an agenda could be at the expense of a company's performance.

1.1The Libyan Banking Sector:

For many years, the banking sector reflected the highly centralized collectivized economy of Libya. As early as 1970, the financial sector was highly nationalized, with all commercial banks under the government (Elsakit, 2017). The entire sector was under the aegis of the state, like most communist economies. Libyan Central Bank supported state-funded projects along sector lines, such as agriculture and housing. The private sector disappeared, leaving all the financial institutions under government control. Banking assets increased substantially during this period owing to the high levels of oil wealth proportionate to the population (Elsakit, 2017). The decline in oil wealth during the 1980s, as well as economic isolation during a period of US-led sanctions, resulted in economic stagnation and drops in foreign currency. The rate of unpaid loans soared on the books of the state banks.

In 1993, the government allowed the return of foreign banks in Libya and private capital. In January 2004, the General Board of Privatization was set up to plan and implement a broad privatization strategy, which included the financial sector (Elsakit, 2017). Regardless of these reforms, the private sector remained weak and disorganized, and the banking sector remained heavily under the influence of the poorly managed state banks.

Today commercial banks represent 81% of the assets in the financial sector. These, in turn, are dominated by a handful of poorly functioning state banks. In fact, less than six of them hold over 90% of Libya's deposits (World Bank, 2015). The central bank is the major shareholder of most public banks, despite also being the regulatory agency of the banking sector. This has prompted various conflicts of interest that stem from potential forbearance to the benefit of state-owned banks and the granting of credit to well-connected beneficiaries

The Libyan banking sector plays a critical role in the Libyan economy despite being highly centralized. For example, it facilitates domestic transactions. It offers payment services such as salary distribution and money transfers. The banking sector is the main channel for moving money within the country. This function ensures the flow of funds between individuals and businesses. Banks in Libya also help stabilize the economy by controlling liquidity, interest rates, and credit flow. The banking sector influences inflation and overall economic stability. It also creates employment and contributes to development. Libyan banks are the major employers of the citizens.

They also provide financial services that support infrastructure projects and social development. In fact, in the context of post-conflict reconstruction and diversification away from oil dependence, banks are expected to channel funds into infrastructure, agriculture, and digital projects. Achieving these national priorities requires banks to strengthen their governance structures and align themselves with global best practices.

The Libyan banking sector, operating within a milieu of political and economic volatility, encounters numerous operational challenges that have far-reaching implications for the country's overall economic stability and growth. The main challenge is pervasive liquidity shortages (AlZubair, 2021). These shortages are a direct result of the decreased oil revenues and political instability, which have strained the nation's financial resources. The liquidity crisis has been exacerbated by limited access to international finance due to Libya's political isolation. As a result, Libyan banks struggle to fulfill their traditional roles as financial intermediaries. This leads to a contraction in credit availability crucial for businesses and consumers (Romanet Perroux, 2019). Another critical challenge is the outdated banking infrastructure. Libyan banks have retained old banking technologies and practices. Lack of modern technology has hindered their efficiency and competitiveness. For instance, the lack of digitalization and reliance on outdated systems has affected the operational capabilities of these banks, affecting customer service and the ability to innovate (Madi, 2021). Banking is increasingly becoming technology-driven, and this puts Libyan banks at a significant disadvantage both domestically and in the international arena. Another challenge is risk aversion. Since 2011, the Libyan banking system has exhibited heightened risk aversion, primarily influenced by the ongoing political and economic instability (El Ghamari, 2023). This risk-averse nature has led to a conservative approach to lending. Banks are often reluctant to extend credit to small and medium-sized enterprises (SMEs). SMEs are vital for the diversification of the economy and job creation, but their growth and sustainability have been hampered by limited access to necessary funding (El Ghamari, 2023). The cautious approach is a hindrance to economic growth and innovation.

1.2. The Research Problem :

Most previous studies in the developed economies find that board diversity improves performance. They demonstrate that diversity is a major beneficial aspect of corporate governance. However, a significant gap

remains in how it affects performance in transitioning economies such as Libya. Studies of board diversity characteristics on financial performance in developed economies show a positive significant effect. However, the findings of such findings cannot be applied to the Libyan context, which is a transitioning economy. Libya, unlike most Western economies, has experienced political instability and economic volatility in the past few years, making it a unique case. Moreover, the cultural norms in this country do not support inclusivity. This is largely due to entrenched patriarchal norms that limit opportunities for women to assume leadership positions on corporate boards. In addition, CG research in Libya remains scarce. Indeed, empirical studies examining board diversity are notably sparse. Therefore, individuals would want to know if board diversity positively influences financial outcomes in Libya's challenging environment.

It is also unclear from the existing Libyan studies if moderating variables such as bank size, bank age and leverage affect the diversity performance relationship. The concern for the researchers of corporate governance is whether the impact of board diversity on financial performance depends on bank-specific factors such as size, age, and leverage. It is essential to demonstrate that larger banks may have more resources to implement diversity initiatives than smaller ones. Older banks could also be more resistant to change, making it difficult to implement diversity initiatives. Highly leveraged banks also tend to avoid risky governance structures, making it hard to diversify boards. None of the existing Libyan study on board diversity characteristics on financial performance has explored these moderating variables effects on the diversity-performance relationship. Therefore, evidence on how diversity affects financial performance in Libyan commercial banks and how this relationship is moderated by organisational attributes is lacking. These knowledge gaps create uncertainty for regulators and policymakers. Therefore, the study aims to show how board diversity characteristics affect performance as well as how moderating variables affect the diversity-performance relationship.

1.4. Significance of the Study

This study is significant because it addresses a critical gap in the understanding of corporate governance in Libya. Existing studies on corporate governance mainly focus on stable economies in Europe, Asia, and North America. Very few focus on the transitional economies, especially post-conflict nations such as Libya. By empirically studying board diversity's impact on the financial perform of the Libyan banks; the research contributes immensely to the literature on how board diversity affects performance in a unique environment. This knowledge could help policymakers in Libya strengthen governance or reduce systemic vulnerabilities.

The study is also significant because it focuses on the banking sector. Banks play a significant role in the Libyan economic recovery and diversification. In recent years, political instability and economic volatility have made it crucial to strengthen governance in the Libyan banks. Stronger governance in banks could help restore financial stability, attract investment, and improve stakeholder trust. Therefore, investigating the diversity-performance relationship could provide valuable insights into how Libyan banks might improve governance practices or align them with international standards. The study therefore, helps identify areas that need improvement to speed up Libya's economic recovery.

This research further introduces moderating variables such as bank size, age, and leverage to explain how

institutional factors influence this effect. By analysing these variables, the research is able to demonstrate why previous studies on board diversity characteristics on financial performance have mixed results. Introducing moderating variables helps explain why some studies show positive effects while others show negative results. Policy makers would know the conditions under which diversity improves or hinders performance.

The study will also address the pressing need for reforms in the Libyan banking sector. The existing boards lack diversity in several dimensions. The study will identify which aspects of diversity matter most for bank performance by investigating the diversity-performance relationship. For example, board diversity characteristics that need reforming are gender diversity and board independence.

1.5 Research Hypotheses

To address the above research questions, the following testable hypotheses were formulated:

Hypothesis 1 (H1): The characteristics of board diversity have a significantly positive effect on the financial performance of commercial banks in Libya.

Emerging from this hypothesis, the following sub-hypotheses are proposed:

- H1a: The characteristics of board diversity have a significantly positive effect on the financial performance, as measured by Return on Assets (ROA), in commercial banks in Libya.
- H1b: The characteristics of board diversity have a significantly positive effect on the financial performance, as measured by Return on Equity (ROE), in commercial banks in Libya.

Hypothesis 2 (H2): Board diversity characteristics without moderation variables have a significantly positive effect on the financial performance of commercial banks in Libya.

Hypothesis 3 (H3): Board diversity characteristics, with moderation variables, have a significantly positive effect on the financial performance of commercial banks in Libya.

Emerging from this hypothesis, the following sub-hypotheses were found:

- H3a: Board diversity characteristics, with bank age as a moderation variable, have a significantly positive effect on the financial performance of Libyan commercial banks.
- H3b: Board diversity characteristics, with bank size as a moderation variable, have a significantly positive effect on the financial performance of Libyan commercial banks.
- H3c: Board diversity characteristics, with leverage as a moderation variable, have a significantly positive effect on the financial.

2.ResearchMethodology

The study employed a quantitative research methodology to examine the impact of board diversity characteristics on the performance of Libyan banks. The approach is appropriate because it allows for systemic measurement and statistical analysis of the relationship among dependent and independent variables. It provides a high level of accuracy and objectivity by enhancing the reliability and accuracy of their findings and reducing subjectivity and bias using standardized procedures and numerical measurements. For analysis, it employs SEM statistical tool to test the hypothesized diversity-performance relationships and the moderating effects of bank size, age, and leverage. The research design allowed for the analysis of patterns across multiple banks.

The research utilised several dependent and independent variables. Independent variables were BI, CEOD, and

BES. Dependent variables were ROA and ROE, while the moderating variables were bank age, size, and leverage. Independent variables were board diversity characteristics, while the financial metrics were the dependent variables.

2.1. Sampling and Data Collection

2.1.1. Data Sampling

A purposive sampling technique was used to select the banks with publicly available annual reports. The sampling technique was appropriate because it allowed the researcher to focus on the banks with reliable and relevant data. In the study, purposive sampling was based on the availability of annual reports with board diversity information.

2.1.2. Data collection

In February 2023, the researcher began gathering secondary data from annual reports and completed the task by June 2024. The data was obtained from 7 Libyan banks, which included Al-Jumhouria Bank, Commerce &Development Bank, Sahara Bank, United Bank, Asaray Bank, Al-Wahda Bank, and National Commercial Bank. These banks represent about 97% of the capital of the Central Bank of Libya (World Bank, 2024). Smaller banks and those that were recently opened were not included in the study. The data from the 7 banks was from the period 2007-2021. It provided insights into the banks' board composition, functions, and diversity. Significant findings were from BI, CEOD, and BES. The data from the annual reports were accessed through the banks' official websites and the Central Bank of Libya's online database. They included extensive financial information like income, balance sheets, and cash flow statements. Bank performance was objectively assessed using measurements such as ROA and ROE

During data collection, the researcher encountered various problems that delayed the research process. Firstly, some banks were reluctant to provide comprehensive and transparent annual reports, which hindered access to key information. Another challenge was the cultural resistance to board diversity in Libya. This affected the composition of boards and ultimately the data available for analysis.The researcher was concerned that such cultural resistance might skew results and complicate interpretations regarding the relationship between diversity and performance. On the same note, Asare et al. (2022) suggest that the regulatory framework surrounding corporate governance fails to enforce gender diversity on boards, leading to a lack of diverse representation that could affect the study's findings.

Another major challenge was that of logistics. The researcher began pursuing access to the annual reports in February 2023 and only completed this process in June 2024. It was highly challenging to follow up with the banks every week and month, which necessitated frequent travels from city to city in Libya, especially Tripoli, Benghazi, and Albaydha.

2.1.3. Data Reliability and Validity

To ensure data reliability and validity, the researcher obtained information from official audited annual reports approved by the Central Bank of Libya. Documents approved by the Central Bank of Libya were reliable sources of information that could help determine the effect of board diversity characteristics on financial performance. The collected data was also cross-verified with other reliable financial sources for accuracy. They were consistent with most verified financial sources, such as finance journals and other business journals. Similar financial indicators were used across all banks to ensure accuracy and hence reliability of data. For data validity, the researcher used model fit indices to confirm that the measurement model adequately represented the constructs.

2.1.4. Data Analysis

This study used SEM as the main analytical tool to

examine the effect of board diversity characteristics on the financial performance of Libyan banks. This technique was used because of its suitability for predictive research and small to medium sample sizes. It also enables simultaneous estimation of measurement models. SEM was essential for this study, given the explanatory nature of governance research and the need to assess two paths-effects of board diversity characteristics on ROA and ROE and the effect of moderating variables on the diversity performance relationship. Data analysis was conducted using the IBM SPSS AMOS 29 program. The two-step SEM procedure was used in this study. The first step entailed evaluating measurement model fit and concept validity using Confirmatory Factor Analysis (CFA). This measurement of the model focused exclusively on the associations between latent constructs and their observed indicators within the SEM framework (Byrne, 2016). To determine the model's overall goodness of fit, a range of stand-alone fit indices such as Chi-Square (χ^2), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) were employed. Others were incremental fit indices such as the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI). The second step entailed testing the structural model to determine the importance. Specifically, this stage examined the direct effects of BDC on ROA and ROE and the moderating effects of the selected variables on the relationship between board diversity and firm performance. Based on that test, hypotheses were examined and the relationships estimated using the path diagram.

3 .Results and Discussion

3.1. Measurement of Model of Fit

Table 1: Results of Measurement Model Fit

Fit Index	Measurement Model (CFA)	Cut-off Criteria
$\chi 2$	$210.096_{(0.000)}$	p > 0.05
Df	53	-
$\chi 2$(Min)/DF	3.962	CMIN/DF≤5.0
CFI	0.915	CFI>0.90
GFI	0.911	GFI>0.90
TLI	0.917	TLI>0.90
RMSEA	0.055	RMSEA<0.08

Note. $\chi 2$ = chi-square; df = degree of freedom; CFI = comparative fit index; GFI = goodness fit index; TLI = Tucker-Lewis fit index; RMSEA = root mean square error of approximation

Table 1 above demonstrates that the hypothesized model has an acceptable level of fit based on the CFI of 0.915, GFI of 0.911, TLI of 0.917, and RMSEA of 0.055. X^2 statistic indicated a poor model fit, with χ^2 (53, n = 105) = 210.096, p = 0.000). However, X^2 is often regarded as a 'badness-of-fit' metric due to its sensitivity. Therefore, the values for CFI, GFI, and RMSEA are more robust and reliable for evaluating the model's overall fit.

3.2. SEM Path Analysis of General Model (BDCs on FP)

The model was processed using the Amos program, and the path results of the final model are in Figure 1 below.

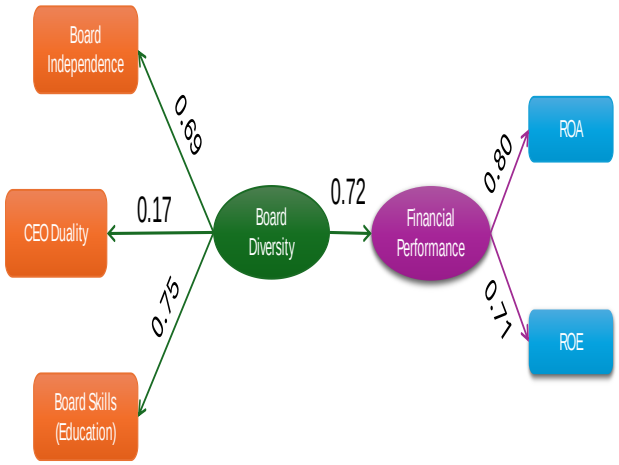

Figure 1: Model of the BDC on the FP of the Libyan commercial banks under study

The structural model was assessed through path analysis, which allowed for estimating the direct effects of the independent variables on the dependent variable and evaluating the overall relationships within the model. Figure 1 above shows that the variable with the highest loading factor is BES with a factor of 0.75. BI

follows it with a factor of 0.69 and then CEOD with 0.17, which has the lowest loading level. The figure shows that the effect of the characteristics of board diversity on the financial performance of Libyan commercial banks under study is positive, with a standard score of 0.72 in this model. It is also noted that the ROA, which has a score of 0.80, is more loaded than ROE, which has a score of 0.71.

Table 2 presents the path coefficients and the statistical significance of the hypothesized structural relationships, with the corresponding paths illustrated in figure 1 above.

Table 2: Results of General SEM Path Analysis

Path from	**Std. Coeff.**	**Path to**	**Std. Coeff.**	**Path to**	**Path from**	**Std. Coeff.**	**Hypotheses**
Direct Effects:							
BI	0.69**	Board diversity	**0.72 ****	Financial performance	**ROA**	**0.80 ****	Support the hypothesis
CEOD	0.17*				**ROE**	**0.71***	Support the hypothesis
BES	0.75 **						

Significant at α=0.05 (p<.05), ** Significant at α=0.01 (p<0.01).

The results of testing the direct effect of BDC on the financial performance suggest that there is a significant direct effect. BES and BI have p<0.01, indicating that the null hypothesis is rejected. There is a statistically significant effect of BI and BS on FP. Results from Table 2 show that BDC (Std. Coef. = 0.72, p<0.01) has statistically significant effect on performance. BDC also has a statistically significant effect on ROA (std. Coeff =0.795, p < 0.01) and ROE (std. Coeff =0.71, p < 0.01). This result supports hypothesis 1 (H1) that the characteristics of board diversity have a significantly positive effect on the financial performance of commercial banks in Libya. The results also support Hypothesis 2 (H2): BDC without moderation variables have a significantly positive effect on the financial performance of commercial banks in Libya.

3.3. Board Diversity Characteristics with Moderating Variables on FP

Table3: Results of Measurement Model Fit

Fit Index	**Measurement Model (CFA)**	**Cut-off Criteria**
$\chi 2$	$155.120_{(0.000)}$	p > 0.05
Df	53	-
$\chi 2$(Min)/DF	2.927	CMIN/DF≤5.0
CFI	0.912	CFI>0.90
GFI	0.905	GFI>0.90
TLI	0.910	TLI>0.90
RMSEA	0.052	RMSEA<0.08

Note. $\chi 2$ = chi-square; df = degree of freedom; CFI = comparative fit index; GFI = goodness fit index; TLI = Tucker-Lewis fit index; RMSEA = root mean square error of approximation.

The values in Table 3 above indicate an acceptable overall fit based on the CFI of 0.912, GFI of 0.905, TLI of 0.910, and RMSEA of 0.052. The rest of the variables are not considered to be reliable indicators of model fit due to their sensitive natures.

3.4. The Effect of Bank Size on the Diversity-Performance Relationship

The structural equation model shown in Figure 2 presents the hypothesized relationships among the variables and forms the conceptual framework for this study. This framework examines the characteristics of board diversity, with bank size acting as a moderating variable on the financial performance of the Libyan commercial banks

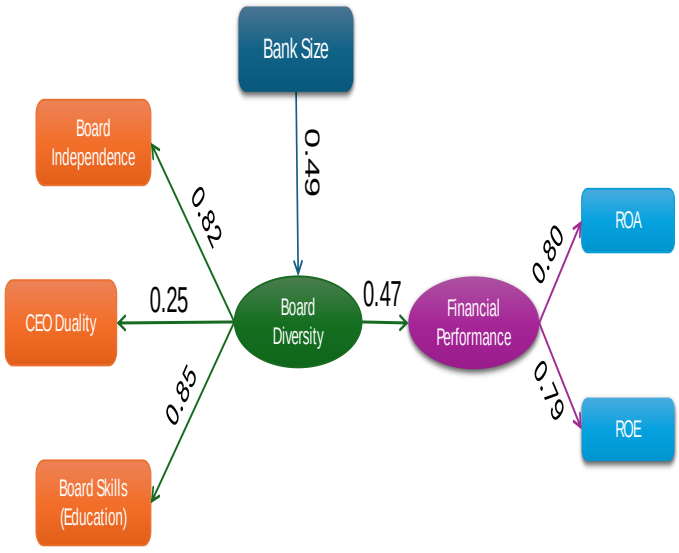

Figure 2: Model of the BDC on the FP of the Libyan commercial banks with bank size as the moderating variable

Based on Figure 2 above, variables with the highest loading are BSE and BI, with the standard scores of 0.85 and 0.82, consecutively. The effect of board diversity characteristics on the financial performance of the commercial banks under study is positive, with a standard score of 0.47 in this model. Notably, ROA remained the same (0.80) while ROE increased to 0.79 with the introduction of bank size as the moderating variable. In addition, Table 4 presents the path coefficients and corresponding significance levels for the hypothesized structural relationships, with each pathway visually represented in Figure 2.

Table 4: Results of BDC with bank size on the FP Path Analysis

Path from	Std. Coeff.	Path to	Std. Coeff.	Bank size	Path to	Path from	Std. Coeff.	Hypotheses
	Direct Effects:							
BI	0.82**	Board diversity	0.47 **	0.49 **	Financial performance	ROA	0.80 **	Support the hypothesis
CEOD	0.25*					ROE	0.79*	Support the hypothesis
BES	0.85 **							

Significant at α=0.05 (p<.05), ** Significant at α=0.01 (p<0.01).

Table 4 above shows that the results for testing the direct effect of board diversity characteristic (BDC) with bank size on the financial performance (FP) suggest that there is a significant direct effect (Std. Coeff =0.47, p < 0.01), with significant support bank size, which supports the hypothesis (H3a).

In addition, BES (std. Coeff =0.85, p < 0.01) and BI (std. Coeff =0.82, p < 0.01) both show a statistically significant impact on ROA (Std. Coeff =0.80, p < 0.01) and ROE (Std. Coeff =0.79, p < 0.01). The findings support Hypothesis (H3a) that board diversity characteristics, with bank size as a moderation variable, have a significantly positive effect on the financial performance of Libyan commercial banks.

3.5. The Effect of Bank Age on the Diversity-Performance Relationship

The structural equation model shown in Figure 3 presents the hypothesized relationships among the variables and forms the conceptual framework for this study. This framework examines the characteristics of board diversity, with bank age acting as a moderating variable on the financial performance of the Libyan commercial banks.

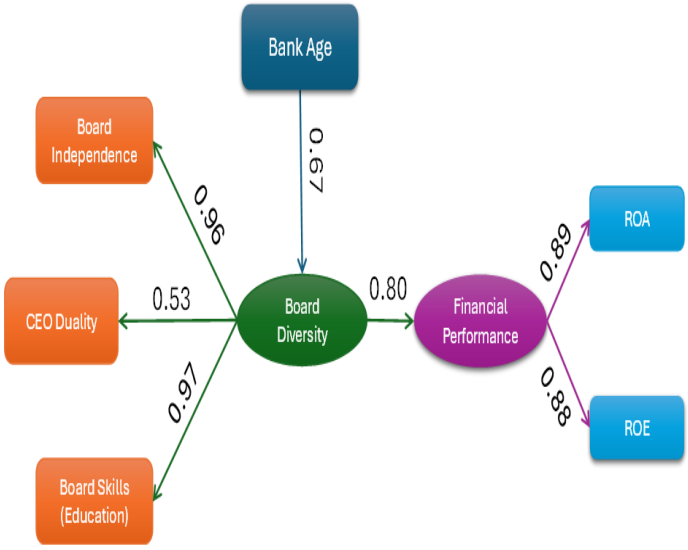

Figure 3: Model of the BDC on the FP of the Libyan commercial banks with bank age as the moderating variable

Based on Figure 3 above, variables with the highest loading are BSE and BI, with the standard scores of 0.97 and 0.96, consecutively. The effect of board diversity characteristics on the financial performance of the commercial banks under study is positive, with a standard score of 0.80 in this model. Notably, ROA has a slightly higher loading than the ROE as increased to 0.89 while ROE increased to 0.88 with the introduction of bank age as the moderating variable. In addition, Table 5 presents the path coefficients and corresponding significance levels for the hypothesized structural relationships, with each pathway visually represented in Figure 3.

Table 5: Results of BDC with bank age on the FP Path Analysis

Path from	Std. Coeff.	Path to	Std. Coeff.	Bank age	Path to	Path from	Std. Coeff.	Hypotheses
	Direct Effects:							
BI	0.96**	Board diversity	0.80 **	0.67 **	Financial performance	ROA	0.89 **	Support the hypothesis
CEOD	0.53**					ROE	0.88 **	Support the hypothesis
BES	0.97**							

Significant at α=0.05 (p<.05), ** Significant at α=0.01 (p<0.01).

Table 5 above shows that there is a significantly positive significant effect of board diversity characteristics on ROA and ROE with bank age as moderating variable, which supports the hypothesis (H3b). Bank age (Std. Coeff = 0.67, p<0.01) had a statistically significant impact on the financial performance (Std. Coef. = 0.80, p<0.0.1). The effect on ROA (Std. Coeff. = 0.89, p<0.0.1) and ROE (Std. Coef. = 0.88, p<0.0.1) were also statistically significant. The independent variables BI (Std. Coef. = 0.96, p<0.0.1) and BES (Std. Coeff. = 0.97, p<0.0.1) had a significantly positive effect on financial performance. While the CEOD had only 0.53.

3.6. Bank Leverage on the Diversity-Performance Relationship

The structural equation model shown in Figure 4 presents the hypothesized relationships among the variables and forms the conceptual framework for this study. This framework examines the characteristics of board diversity, with leverage acting as a moderating variable on the financial performance of the Libyan commercial banks.

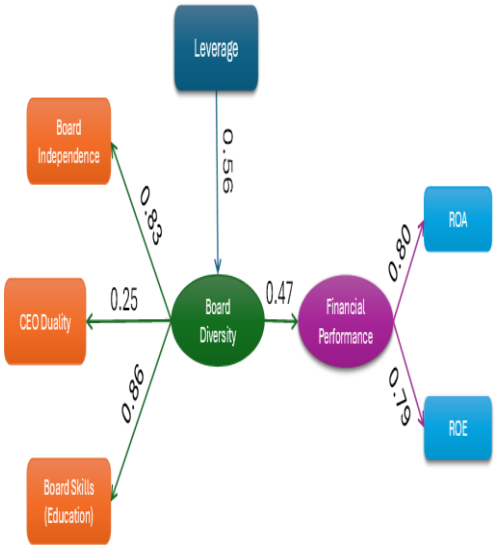

Figure 4: Model of the BDC on the FP of the Libyan commercial banks with leverage as the moderating variable

Based on Figure 4 above, variables with the highest loading are BSE and BI, with the standard scores of 0.86 and 0.83, consecutively. The effect of board diversity characteristics on the financial performance of the commercial banks under study is positive, with a standard score of 0.47 in this model. Notably, ROA has a slightly higher loading than the ROE. In addition, Table 5 presents the path coefficients and corresponding significance levels for the hypothesized structural relationships, with each pathway visually represented in Figure 4.

Table 6: Results of BDC with leverage on the FP Path Analysis

Path from	Std. Coeff.	Path to	Std. Coef.	Bank Leverage	Path to	Path from	Std. Coef.	Hypotheses
	Direct Effects:							
BI	0.83**	Board diversity	0.47 **	0.56**	Financial performance	ROA	0.80 **	Support the hypothesis
CEOD	0.25*					ROE	0.79*	Support the hypothesis
BES	0.86 **							

Significant at α=0.05 (p<.05), ** Significant at α=0.01 (p<0.01).

Table 6 above shows that there is a significantly positive significant effect of board diversity characteristics on ROA and ROE with bank leverage as moderating variable. Bank leverage (std. Coef = 0.56, p<0.01) had a

statistically significant impact on the financial performance (Std. Coef. = 0.47, p<0.0.1). The effect on ROA (Std. Coef. = 0.80, p<0.0.1) and ROE (Std. Coef. = 0.79, p<0.0.1) were also statistically significant. These results support hypothesis (H3c) that BDC, with leverage as a moderation variable, have a significantly positive effect on the financial performance.

4.0. DISCUSSION OF THE KEY FINDINGS

The purpose of this study was to examine the impact of board diversity characteristics on the financial performance of Libyan banks. The board diversity characteristics were BI, BES, and CEOD. SEM results indicate that BI and BES significantly enhance ROA and ROE, whereas CEOD does not exhibit a statistically meaningful effect. Despite CEOD insignificant effect, the overall BDC model demonstrated a significant impact on both ROA and ROE. The results indicate that collectively, BDC play a significant role in shaping financial outcomes in Libyan banks. The results also revealed that moderating variables such as bank size, age, and leverage amplify the positive impact of BDC on financial performance. They further showed that the strength of the diversity–performance relationship depends on contextual factors such as bank size, age, and leverage.

4.1. Board Skills (Education)

The study findings on Libyan banks found that BES has a significant positive impact on financial performance. This variable positively influences the ROA and ROE of the Libyan banks. BES showed the strongest positive effect. That was likely because directors with diverse academic and professional backgrounds tend to make more informed and balanced decisions.

Even CG studies in Libya are limited, Magoma et al. (2024), Capuano (2023), Nguyen et al. (2015), King et al. (2016), and Gande & Kalpathy (2017) reported similar positive results. They demonstrated that BES has a significant positive effect on the financial performance of Libyan banks. Magoma et al. (2024) reported that BES significantly impacts the bank's performance. The financial expertise of members positively and significantly influences banks' performance. The study reinforces the present finding that BES enhances ROA and ROE. In addition, Capuano (2023) reported similar findings with Magoma et al. (2024) and the Libyan study. Results from their study showed a significant influence of BES on bank performance. Nguyen et al. (2015) also demonstrate that BES significantly influences financial performance. In this study education level and prior work experience of board members increased shareholders' wealth. King et al. (2016) also demonstrated that BES improves financial performance. When board members were highly educated, financial performance significantly improved. However, these previous studies must have aligned with the Libyan study because they used similar statistical tools and performance metrics. Using SEM for both studies made it easier to capture the same underlying relationships in the data. Similar performance metrics also helped produce consistent outcomes.

Some previous studies (Alkhawaja, 2022; Andoh et al., 2023; Fernandes et al., 2017; Pereira & Filipe, 2022) contradicted the Libyan study. They concluded that BES insignificantly affects financial performance. A study by Alkhawaja (2022) showed an insignificant effect. It was consistent with Fernandes et al. (2017), which contradicted the Libyan study. Studies by Pereira & Filipe (2022) and Andoh et al. (2023) were also inconsistent with the Libyan study by showing an insignificant negative effect. These inconsistencies may stem from methodological differences, including the use of different statistical techniques. The Libyan study used SEM, while the other studies employed PLS and PCSE. The contradiction also stemmed from a difference in the

location. These prior studies focused on the Eurozone while this study was in Libya.

4.2. Board Independence

The study finding shows that BI positively influences financial performance. The positive effect on performance is consistent with agency theory, which suggests that BI enhances the board's ability to monitor management and reduce managerial opportunism. This finding aligns with and contradicts several previous studies. It is consistent with Awad et al. (2024), Khalaf (2022), and Tulung & Ramdani (2018) who observed that independent directors are associated with improved oversight and performance. Sarkar & Sarkar (2018) also reached similar conclusions that align with the results of the Libyan study. They found a strong correlation between BI and the financial performance of banks. Likewise, Uddin et al. (2021) demonstrated a strong and statistically significant positive correlation between BI and firm performance. The consistency may reflect the use of comparable analytical techniques that capture complex relationships more effectively. The current study and most of these previous studies used SEM for data analysis. Similarly, both studies utilised ROA and ROE as their performance metrics. These prior studies were also conducted in transitioning economies. For example, Awad et al. (2024) focused on the MENA region, making contextual factors like regulatory environments and governance structures more alike.

Some prior studies (Andoh et al., 2023; Magoma et al., 2024; Rashid, 2018) contradict this study. They suggest that BI insignificantly affected performance in East Africa. Likewise, Nguyen & Huynh (2023) contradicted the Libyan study. Their regression coefficients for BI were not statistically significant for ROA (St. Coeff $=-0.0982$, $p>0.1$) and ROE (St. Coeff $=-0.7957$, $p>0.1$), indicating an insignificant effect. Similarly, Perdana & Constance (2018) demonstrated that BI insignificantly affects financial performance. They found that having an independent commissioner did not have a significant influence on the stock price. The contradiction is due to differences in sample sizes (Number of banks) and performance metrics (ROA &ROE vs. Tobin's Q). The Libyan study only obtained data from 7 Libyan banks, while prior studies such as Nguyen & Huynh (2023), and Rashid (2018) obtained data from 52 and 135 firms. They drew from a larger sample size. Prior studies also used data from other sectors, while the Libyan study focused entirely on the banking sector.

These contradictory results suggest that BI alone may be insufficient in ensuring effective oversight in transitioning economies. Board independence also requires adequate expertise and real autonomy or freedom from political influence. The positive effect of BI on FP in Libya could be due to recent corporate governance reforms that are beginning to transform into a more meaningful monitoring rather than merely formal compliance.

4.5. CEO Duality

CEO Duality had no statistically significant effect on the financial performance of the Libyan banks. This finding is consistent with agency theory, which warns that combining the roles of CEO and board chair weakens oversight. Its insignificant impact on financial performance indicates that CEO Duality is not a major determinant of financial performance in the Libyan banking sector. The absence of significance in the study suggests that CEOD does not influence performance in any statistically meaningful way. This implies that CEOD may play a less influential role compared to BI and BES in determining performance

This result is consistent with several empirical studies (Awad et al., 2024; Gebrayes & Edeit, 2022; Grove et al., 2011) that show no correlation between board diversity and financial performance. Another study by

Yan Lam & Kam Lee (2008) also aligned with the Libyan study. It shows that the duality-performance relationship was non-significant. The alignment with these prior studies may result from shared methodological approaches and the similar use of ROA and ROE within the banking sector. Previous studies used SEM just like the Libyan study, establishing reliable and robust findings across different contexts. Prior studies also used ROA and ROE, the same measures utilised by the Libyan study. The previous studies and the Libyan study all focused on the banking sector. A similar sector supports the alignment of outcomes.

Some studies (Hewa Wellalage & Locke, 2011; Isik, 2017; Moscu, 2015; Naushad & Malik, 2015; Nguyen et al., 2014) disagreed with this study by demonstrating that CEOD had a significant positive effect. These studies support the steward theory, which suggests that CEO duality can enhance cohesion, clarity of command, and swift decision making. For example, a study by Hewa Wellalage & Locke (2011) was inconsistent with the Libyan study because it suggests performance benefits under unified leadership. Results from the panel data indicated that CEOD positively and significantly influenced performance. A study by Nguyen et al. (2014) also contradicted the Libyan study. It indicated that CEOD was significantly and positively associated with performance for Singaporean companies. These discrepancies may reflect differences in sample size, sectoral coverage, and methodological choices. For example, the Libyan study was based on data from 7 banks, while other studies used larger and more diverse samples, such as 199 companies in Sri Lanka.

4.6. Moderating Variables

The study found that bank characteristics significantly strengthened the relationship between BDC and financial performance. The results indicated that the effectiveness of governance mechanisms relied on contextual factors such as size, age, and leverage. This finding aligns with the contingency theory, which asserts that the effectiveness of governance structures depends on their fit with organisation's attributes. However, the broader literature presents mixed empirical evidence regarding the moderating role of bank characteristics. Some studies corroborate the significant positive association identified in the Libyan study while others contradict it.

4.6.1. Bank Size

Bank size positively moderated the diversity–performance relationship, indicating that larger banks benefit more from board diversity than smaller banks. Larger banks may benefit more from economies of scale or enhanced market power, while smaller banks may not. Supporting evidence from developing nations included Keneni & Vankataram (2021), Sulub (2014), and Teimet & Lishenga (2019). Keneni & Vankataram (2021) showed that bank size significantly influences ROA and ROE. This implies that larger banks outperform smaller banks. Sulub (2014) also showed that bank size has a significant positive effect on the Sudanese banking sector. According to this study, larger banks generated higher profits than smaller banks. These prior studies were consistent with the Libyan findings due to similarities in methodological approaches and financial metrics. The Libyan study used similar statistical models and financial metrics, leading to comparable findings. Additionally, these studies were conducted in developing countries like Kenya and Sudan. These countries share comparable economic and regulatory environments with Libya

However, some studies (Parvin et al., 2019; Velnampi & Nimalathasan, 2010; Mbekomize & Mapharing, 2017) find that size has no significant impact on

performance. The performance was similar regardless of whether the bank was small or large. The difference indicates that the impact of the moderating variable is context-dependent. The Libyan environment was unique. Its regulatory and market conditions may have amplified the effect of size on the diversity–performance relationship.

4.6.2. Bank Age

Bank age also positively moderated the relationship between BDC and financial performance. Older Libyan banks benefited more from governance structures than younger banks. The moderating effect was more pronounced across all BDC variables. Prior studies (Adewale et al., 2023; Kwashie et al., 2023; Coad et al., 2010) supported the Libyan finding. They found a strong correlation between bank age and overall bank performance. For example, Kwashie et al. (2023) revealed that firm age has a strong and statistically significant impact on performance. Other prior studies (Muslih & Marbun, 2020; Haryati et al., 2019; Stierwald, 2009) contradicted the Libyan study by demonstrating an insignificant effect of bank age on performance. These contradictions indicate that the moderating effect of bank age varies across economic and regulatory environments. The strong effect observed in Libya may reflect unique aspects of its banking sector and governance context.

4.6.3. Leverage

Bank leverage was also a significant moderator of the diversity–performance relationship at the 0.01 level. Its statistical significance indicates that leverage functions as an important moderating variable. This result is consistent with prior studies (Mallinguh et al., 2020; Budhathoki et al., 2020; Nyabaga & Wepukhulu, 2020), which demonstrated that bank leverage has a positive effect on financial performance. They were consistent with Mallinguh et al. (2020) who demonstrated that leveraged banks exhibit better performance when governance structures are strong.

However, some prior studies (Abubakar, 2015; Keneni & Vankataram, 2021; Sulub, 2014) report no significant effect. These inconsistencies suggest that the moderating effect of leverage is highly context specific. Its effect depends on different regulatory environments or risk conditions. In Libya, regulatory conditions and risk exposure may have strengthened the observed effect of leverage on the diversity–performance relationship.

5. Conclusion

The study's main objective was to investigate the board diversity characteristics' effect on the financial success of Libyan banks. It was motivated by the observable gap in empirical and theoretical studies surrounding corporate governance in post-conflict, transitional economies like Libya. Prior studies in other contexts have generally reported positive associations between board diversity and firm performance. However, no significant study had been done on transitional economies, especially those in Africa. This study sought to provide a theoretical framework that differs from what is presented in the global literature. It was to contribute to the understanding of corporate governance using a quantitative research approach. The research approach used data from 7 Libyan commercial banks covering the period 2007-2021.

The findings revealed that while CEOD had no significant effect on performance, BES and BI produced a significant positive influence on ROA and ROE. Similarly, the overall BDC construct had a significant positive influence. The finding demonstrated that the strength in corporate governance lie in the collective board diversity attributes. The study also revealed that the diversity-performance relationship depends on moderating variables such as bank size, age, and leverage. This moderating effect reinforces the idea that

diversity must be situated within a broader institutional and organisational context to produce its intended outcomes.

The study contributed to corporate governance by providing a context-specific CG model explaining how board diversity influences financial performance in Libyan banks. It uncovered the complex and context-dependent nature of board diversity's impact on financial performance in literature and theory and within the Libyan banking sector. The study helped fill an empirical gap by showing which board diversity characteristics had the most effect on the financial performance of the Libyan banks. The study contributed empirical evidence for a highly understudied post-conflict, transitional context. As a result, it addressed the scarcity of CG research in transitioning economies. It also provided recommendations that could help policymakers strengthen governance structures in Libya. Lastly, the study offered actionable reforms and insights that could enhance financial stability, investor confidence, and institutional transparency in Libyan banks.

6.1. Limitations of the Study

Despite its contributions to theory and practice, the study is subject to several limitations. The first limitation concerns restricted access to reliable financial and governance data, resulting from the political instability in Libya. The second limitation concerns the sample size. The study utilised a relatively small sample size. It was limited to information obtained only from 7 banks. The small sample size may not represent the broader banking sector in Libya. The study also relied on secondary financial data that could not capture the qualitative aspect of the board dynamics, such as behavioral interactions and cognitive diversity. Another limitation was the study's reliance on ROA and ROE. This may not have captured the multidimensional nature of bank performance.

6.2. Suggestions for Future Research

Drawing on the study's insights and acknowledged limitations, several suggestions have emerged. Firstly, future research should use other performance metrics such as NIM, CAR, LDR, ESG, and stakeholder metrics to capture bank performance more comprehensively. Other performance metrics could provide a more detailed view of the bank's efficiency, profitability, and investor value. Future studies should use comparative designs such as cross-country studies to better contextualize findings. Thirdly, future research in corporate governance should use larger samples that would be representative of all banks in Libya. Comparative studies in other countries often draw datasets from 50 to 100 banks for statistical analysis. Lastly, future research should conduct longitudinal studies on board diversity characteristics and financial performance..

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