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# Boardroom diversity and financial performance in Palestinian banks and insurers

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**Abstract**
This study examines the impact of board diversity—precisely age, nationality, and experience—on the financial performance of 13 Palestinian banks and insurance companies listed on the Palestine Stock Exchange (PEX) from 2011 to 2022. Using a comprehensive panel data approach and controlling for endogeneity with a two-step system Generalized Method of Moments (GMM) estimator, the analysis explores how diverse board characteristics influence financial outcomes measured by ROA and ROE. Unlike previous studies focused mainly on developed markets or gender diversity, this research offers new insights into the role of board diversity in emerging economies, particularly in the Middle Eastern context. The results reveal that while age diversity negatively impacts firm performance, experience diversity positively correlates, underscoring the importance of industry-specific expertise in financial governance. Nationality diversity, however, exhibits no significant effect, suggesting that foreign representation may introduce complexity without necessarily enhancing performance. These findings contribute to Agency Theory, Upper Echelons Theory, and Resource Dependence Theory, offering practical recommendations for regulators and firms in developing markets to optimise board composition. This study expands the discourse on board diversity by highlighting the nuanced effects of specific diversity dimensions in the financial sector, providing valuable insights for governance practices in similar economic environments.

**Keywords** Board diversity · Financial performance · Emerging markets · PEX · Financial institutions · Corporate governance

## 1 Introduction

Firm performance is a critical measure of a company's success, encompassing its ability to meet financial goals, adapt to market challenges, and attain long-term stability. This performance is typically evaluated using key metrics such as profitability, market share, and growth, and is essential for stakeholders, particularly investors, who assess value through indicators like return on equity (ROE) and return on assets (ROA) [1]. Effective corporate governance structures, especially the boards of directors plays a significant role in formulating strategies, aligning strategic direction and resource allocation, enhancing adaptability and financial stability in the face of challenges, and ensuring companies remain competitive and resilient in dynamic environments [2–4].

Board diversity is increasingly recognized as vital for effective corporate governance, and studies have highlighted its influence on organizational policy-making and performance [5, 6]. Specifically, diversity in board composition,

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such as differing age, experience, and national backgrounds, can enhance the board's ability to respond dynamically to market changes, benefiting organizations, especially in volatile industries [7, 8]. In the Palestinian context, where market volatility demands flexibility, diverse boards can strengthen resilience by fostering a variety of perspectives, leading to better adaptability and innovation [9, 10]. However, diversity may also introduce challenges, including potential conflicts and delays in decision-making, which can hinder performance if not well-managed [11, 12]. Research on age, nationality, and experience diversity shows varied impacts on financial performance, suggesting a nuanced relationship between board diversity and firm outcomes [13, 14].

Board roles include monitoring management, offering strategic guidance, and shaping company policies [15, 16]. The composition of a board significantly impacts these roles and, by extension, firm performance. Research into board diversity is rooted in theories such as agency theory [17], resource dependency theory [18], and social psychology [19, 20]. Agency theory argues that diverse boards can improve monitoring and reduce agency costs by incorporating various perspectives, reducing information asymmetries. Resource dependency theory adds that diverse boards can provide broader access to resources, knowledge, and networks, which are invaluable in complex operational environments [12, 18]. However, social psychology insights suggest that while diversity brings fresh ideas, it may also create tensions within group dynamics, possibly hindering efficient decision-making processes if not effectively managed [19, 20].

Empirical research highlights that diverse boardroom often aligns companies more effectively with their client and supplier bases [21]. However, heterogeneity in board composition can introduce conflicts and prolong decision-making, potentially countering some of the benefits of diversity [11]. Findings specific to age diversity reveal its role in improving monitoring and intergenerational knowledge-sharing, although its impact on financial performance remains inconclusive [13, 22]. Research on nationality diversity has shown both beneficial and detrimental effects on firm stability and profitability, depending on factors like cultural alignment and market conditions [14, 23, 24]. Additionally, studies focused on financial institutions suggest that diversity within boards improves resilience and adaptability in volatile economic environments [4, 25, 26].

Board diversity, encompassing age, nationality, and experience, has been recognized as a key determinant of firm performance, particularly in developing economies like Palestine, where socio-political instability, limited access to global markets, and economic volatility pose significant challenges [27–29]. Age diversity within the board brings together individuals from different generational backgrounds, fostering a combination of experience and innovative perspectives, which enhances decision-making processes and governance. The presence of both seasoned directors and younger, more dynamic members enables organizations to balance long-term stability with the flexibility required to adapt to rapidly changing market conditions [13, 30]. Nationality diversity, on the other hand, introduces a wealth of cultural perspectives and international expertise, which is invaluable for firms operating in a globalized market. Directors from diverse national backgrounds can help organizations navigate cross-border challenges, expand into new markets, and understand global best practices, thus improving resilience and strategic agility [14, 23, 31, 32]. Experience diversity within the board further contributes to firm performance by broadening the range of professional expertise available, enhancing the board's ability to tackle complex issues, manage risks, and formulate effective strategies. In sectors like banking and insurance, where regulatory compliance and risk management are critical, experience diversity strengthens the board's capacity for sound decision-making and strategic oversight [12, 18, 33]. For Palestinian banks and insurers, the interplay of these diversity dimensions can help mitigate the challenges posed by limited access to international markets, regulatory hurdles, and economic uncertainty, ultimately enhancing both financial performance and organizational resilience. This research seeks to examine the effects of age, nationality, and experience diversity on the financial outcomes of Palestinian financial institutions, providing valuable insights into how diverse governance structures can lead to improved performance, adaptability, and long-term sustainability in emerging economies [34].

Despite increased global attention on diversity in boardrooms, limited studies examine the impact of experience diversity within financial institutions in developing economies. This gap is especially relevant in Palestine, where economic and regulatory factors diverge significantly from those of developed markets [27]. This study seeks to bridge this gap by investigating how age, nationality, and experience diversity within boards of directors affect financial outcomes in Palestinian banks and insurance companies. The findings provide insights into whether board diversity contributes to improved financial performance or introduces new challenges in a complex, developing economy [35].

The primary objective of this study is to analyse the impact of board diversity—specifically regarding age, nationality, and experience—on the financial performance of Palestinian banks and insurance companies. This research investigates the connection between board composition and key financial metrics, aiming to shed light on the potential advantages and complexities associated with diverse boardrooms. As board diversity becomes increasingly recognised as a governance tool, understanding its influence on financial outcomes within Palestinian financial institutions offers practical implications for governance practices among policymakers and organisational leaders [7, 25].

This study offers several contributions to the literature. Firstly, it broadens the focus of research in this area by examining age, nationality, and experience diversity—dimensions that have been less explored in emerging markets, particularly in the Middle East. Secondly, by analysing Palestinian banks and insurance companies, this study investigates how these diversity dimensions under unique socio-economic and regulatory conditions to affect financial performance measured by ROA & ROE. This multidimensional perspective enriches the existing discourse, which often isolates specific aspects of diversity or places undue emphasis on gender [4, 27, 36]. Thirdly, the research also bridges the gap between theory and practice by applying established theoretical frameworks, such as agency theory and resource dependency theory, within a developing economy context, in addition to testing the generalizability of these theories in environments characterized by market volatility and limited institutional infrastructure, providing empirical insights into how board diversity influences governance outcomes [17, 18]. Moreover, by situating the study within the context of Palestine, it enhances our understanding of governance practices in developing economies, where institutional frameworks and market dynamics significantly differ from those in developed countries. Additionally, the study offers actionable recommendations for policymakers and organizational leaders in Palestine, presenting evidence-based strategies to harness diversity as a governance tool. These insights are particularly pertinent for addressing the challenges of fluctuating economic conditions and aligning governance practices with stakeholder needs [10, 25]. Through these contributions, this research establishes a foundation for future studies on the role of diversity in corporate governance within comparable developing economies.

The remainder of the paper is structured as follows: Sect. 2 discusses the hypotheses, informed by theoretical and empirical literature on board diversity. Section 3 details the study's methodology, including sample selection, data sources, and variable measurements. Section 4 presents the results, linking key findings to the hypotheses. Section 5 contextualises these findings within existing literature, addressing broader implications for governance. Lastly, Sect. 6 concludes with a summary of findings and recommendations for future research and governance practices.

## 2 Literature review and development of hypothesis

### 2.1 Theoretical frameworks

The relationship between a company's board of directors and its performance is complex and influenced by various theoretical perspectives [21], with agency theory, resource dependence theory, and upper echelons theory being the primary frameworks applied to understand this connection. These theories provide insights into how board diversity may shape organisational performance by examining factors such as board structure, external resources, and board members' demographic and professional characteristics.

#### 2.1.1 Agency theory

Agency theory, primarily developed by [17] and [37], explores the conflicts of interest that can arise when ownership and control are separated, as in the case of shareholders and managers. This theory argues that such conflicts, known as agency problems, emerge when managers prioritise personal goals over those of shareholders, leading to inefficiencies and potential losses in firm value. The board of directors, in this framework, acts as a monitoring body to align managers' actions with shareholders' interests, thereby reducing agency costs through oversight and governance [38, 39]. Research suggests that board diversity, particularly concerning gender, nationality, and age, effectively strengthens the board's independence and capacity to monitor management [35]. Liu et al. [40], based on a study of Chinese listed companies, demonstrate that gender-diverse boards significantly improve decision quality and reduce agency conflicts through greater managerial oversight. Similarly [41], analysing UK firms, highlight how nationality diversity enhances risk management by reducing cognitive biases and improving board dynamics. Diverse boards are better positioned to reduce agency conflicts, as they bring varied perspectives that reduce groupthink, enabling board members to challenge managerial decisions and prioritise shareholders' interests more effectively.

Within the context of the financial sector, a diverse board can improve governance practices by enhancing transparency and reducing information asymmetry, which is vital for institutions handling sensitive financial transactions [42, 43].

Financial institutions benefit from the varied perspectives of a heterogeneous board in controlling risk and aligning managerial actions with shareholder objectives. Studies have shown that this diversity promotes ethical governance and strengthens risk management, both essential for financial stability [44, 45].

#### 2.1.2 Resource dependence theory (RDT)

Resource dependence theory, pioneered by [18], views organisations as interdependent entities that rely on external resources to thrive and remain competitive. According to this theory, corporate boards are vital in securing resources, including capital, information, and legitimacy, through their connections and networks. Board members with diverse backgrounds provide valuable access to resources that are otherwise difficult to obtain, as they possess distinct social and professional networks that broaden the firm's external connections [56]. In this regard, as stated by [46] and [47] in their studies on South African companies and Spanish firms, board diversity is perceived as a resource in itself, offering a wider range of insights, access to stakeholders, and sources of advice, which can be crucial for a firm's adaptive capacity in complex environments.

For financial institutions which operate within a highly regulated and resource-dependent industry, a diverse board brings unique networks and expertise that are crucial for navigating resource dependencies [48–50]. Board diversity in this context supports not only financial and non-financial resource acquisition but also enhances resilience to external pressures, such as regulatory changes and economic fluctuations. Studies show that diverse boards help institutions build legitimacy and foster sustainable governance by aligning corporate objectives with societal expectations [51, 52].

#### 2.1.3 Upper echelons theory (UET)

Upper echelons theory, introduced by [53], posits that the demographic and experiential characteristics of top executives and board members significantly influence organisational outcomes. This theory suggests that executives' observable traits, such as age, gender, education, and career background, shape their decision-making processes and strategic preferences. According to UET, the values and cognitive frameworks that leaders bring to an organisation are a function of their life experiences, which, in turn, affect the firm's strategic direction and performance outcomes [54]. The theory emphasises that a diverse board brings diverse perspectives, potentially fostering innovative solutions and adaptive strategies that improve firm performance [53].

In financial institutions with high decision-making complexity and risk management demands, board diversity enables more dynamic and responsive governance. A board with diverse gender, age, and professional experiences contributes to richer discussions, which enhances strategic adaptability and risk management [55, 56]. Additionally, UET suggests that boards with varied backgrounds in education and career fields are better equipped to foster innovation and address complex market challenges, thereby creating value for stakeholders [45].

### 2.2 Development of hypothesis

#### 2.2.1 Age diversity and firm performance

Age diversity within corporate boards has emerged as a significant factor influencing firm performance [21], attributed to the blend of perspectives and experiences that board members of different ages bring to decision-making. Talavera et al. [57] stated in their study on publicly listed chines companies, that this mix of younger, more innovative members with older, seasoned professionals enriches board discussions and enhances overall decision quality. Younger board members often bring fresh ideas and a willingness to challenge norms, fostering innovation, while older members contribute stability, experience, and a measured approach. This range of perspectives supports balanced and informed strategic choices, potentially leading to improved firm performance and corporate value [58, 59].

The theoretical underpinnings of age diversity's benefits can be traced to both resource dependence theory (RDT) and agency theory. According to RDT, corporate boards play a vital role in securing resources, such as knowledge, legitimacy, and external connections, which are essential to organisational success [18]. An age-diverse board brings insights that reflect a wide spectrum of stakeholder and market needs, enhancing the firm's adaptability and competitiveness. For example, in financial institutions [60], analysed data from Indian banks to show how age diversity enables firms to respond more effectively to diverse consumer demands, strengthening market reach and long-term growth.

Agency theory provides another dimension, positing that diverse boards contribute to more effective governance by incorporating a variety of independent perspectives, thus enhancing oversight and reducing agency conflicts between shareholders and managers [37, 61]. The theory suggests that a heterogeneous board is positioned to monitor management decisions critically, as diverse viewpoints help counterbalance biases and prevent groupthink. Nonetheless, some researchers caution that diversity in age, while beneficial for independent oversight, may also create potential challenges. For instance, differing perspectives can lead to a lack of cohesion within the board, which may marginalise certain voices and reduce overall monitoring effectiveness [62, 63].

Empirical findings on age diversity's impact on performance are varied, indicating that it can serve as both an asset and a limitation. Studies by [64] and [65] show that age diversity enhances flexibility in decision-making, balances risk, and ultimately supports firm performance. Other studies, however, reveal more nuanced effects; for instance [57], find that age diversity in Chinese banks can lead to intragroup conflicts that weaken profitability. This aligns with the similarity-attraction paradigm, which suggests that demographic differences can lead to viewing members from different age groups as "outsiders," leading to tension and fragmented communication [19, 41]. Such conflicts, in turn, may disrupt the cohesion needed for effective decision-making, especially in sectors like banking, where timely and unified decisions are critical [66]. Recent evidence, such as [67], underscores how varying ages within boards influence decision-making, governance, and overall firm performance. It highlights the benefits of having both younger and older members, noting that younger members drive innovation while older members ensure stability. This aligns with the idea that an age-diverse board brings both fresh perspectives and seasoned insights necessary for navigating complex challenges, including those tied to sustainability. Wairimu [68], based on evidence from Kenyan firms, showed how younger board members foster innovation while older members ensure strategic stability. Similarly [28], studying Middle Eastern companies, emphasized the role of age diversity in sustainability-oriented decision-making, which improves strategic flexibility and firm outcomes.

In financial institutions, age diversity is thus seen as both a potential strength and a challenge. While it can enhance the board's adaptability and improve the quality of monitoring and oversight, it may also bring about internal friction. The mix of risk tolerance and caution among board members of varying ages can provide strategic benefits, but it also risks slowing decision processes. Consequently, the existing literature presents a dual perspective, highlighting age diversity as a "double-edged sword" that can both improve and complicate corporate governance [69, 70].

Based on these mixed findings, this study proposes the following hypothesis:

**H1:** *Board age diversity has a positive effect on firm performance.*

#### 2.2.2 Nationality diversity and firm performance

Nationality diversity on a company's board of directors can positively impact its performance, particularly for companies engaged in foreign operations or those with partnerships in represented countries. Foreign board members bring valuable insights into their home markets, enriching decision-making with diverse cultural perspectives and knowledge [71]. Maznevski [72] highlights that nationality diversity fosters more effective problem-solving by offering alternative approaches that homogeneous groups may overlook. Similarly [73], suggest that cultural diversity in board composition can provide a competitive edge through enhanced management capabilities, shareholder engagement, and broader international networks.

According to resource dependence theory, foreign directors contribute unique resources, such as international expertise, cultural insights, and access to extensive professional networks, which support resource efficiency and improve board performance. This diversity helps secure critical external resources like financing, network ties, and institutional legitimacy, reducing transaction costs and enhancing firm resilience in dynamic environments [74–76]. Coles et al. [77], in their analysis of US firms, propose that demographic diversity, including nationality, mitigates groupthink and promotes independent, high-quality decisions essential for firms navigating complex global markets.

Studies highlight the positive effects of nationality diversity on board performance, especially in international markets. Danso et al. [78], focusing on 300 sub-Saharan African firms, show that diverse boards improve firm performance. Khan et al. [79], analyzing Pakistani manufacturing firms find similar results, emphasizing how different national perspectives boost firm performance, which highlights that nationality diversity enhances cross-cultural problem-solving and global networks, strengthening firms' competitive edge. Additionally, other research indicates a positive association between board nationality diversity and firm performance across various contexts. For example, research on Korean companies [80, 81] and Turkish firms, where performance was measured using the market-to-book value ratio, confirms these benefits [64]. Additional evidence from the UK, the Netherlands, and Switzerland aligns with these findings, showing that nationality-diverse boards contribute to stronger company performance [82]. Similarly, boards that include members from different cultural backgrounds are better positioned to foster ethical practices, enhance monitoring functions, and improve earnings quality, thus promoting corporate value [83–87].

However, nationality diversity can present challenges. Focusing on European banks, [45] find that nationality diversity can negatively impact bank performance, suggesting that cultural differences might complicate cohesive decision-making in specific industries. Similarly [88], studying Indonesian firms, indicate that foreign directors may detract from firm performance, highlighting potential challenges in balancing diverse perspectives effectively. More generally, cultural differences may lead to cross-cultural communication barriers, misunderstandings, and interpersonal conflicts, potentially reducing board cohesion and decision-making efficiency [89–91]. Hahn and Lasfer [92] note that participative decision-making processes within diverse boards can alleviate these challenges, enhancing knowledge sharing and leveraging the strengths of a multicultural boardroom.

Thus, nationality diversity is often seen as a "double-edged sword"—while it offers access to distinct resources and viewpoints that can enrich firm performance, it requires careful management to minimise potential conflicts [93, 94]. Therefore, this study posits the following hypothesis:

**H2:** *Board nationality diversity has a positive effect on firm performance.*

#### 2.2.3 Experience diversity and firm performance

Experience diversity on a board, especially in industry-specific roles, can enhance decision-making and firm performance by leveraging board members' accumulated knowledge and familiarity with the competitive environment. For instance, experience in related industries equips board members to make prompt, informed decisions when faced with familiar challenges [95, 96]. In competitive industries, organisations may bring in directors with specialised expertise, allowing them to benefit from industry-specific skills, which can facilitate smoother transitions into new roles [97, 98]. However, introducing directors with experience outside the industry can be advantageous for companies pursuing strategic transformation, as they offer fresh perspectives and can challenge existing norms.

According to the "Upper Echelons" theory, the cognitive backgrounds of directors, shaped by their experience, play a pivotal role in board effectiveness. Directors with extensive experience tend to exhibit increased tolerance, improved information processing, and an enhanced ability to evaluate diverse alternatives, which can positively impact decision quality and firm performance [99, 100]. As [101] proposed, human capital theory similarly underscores that an individual's knowledge and experience strengthen an organisation's cognitive capabilities and productive potential.

Experience diversity on boards, particularly from varied industry backgrounds, fosters effective decision-making. Studies like [102], analysing 150 Indian firms, highlights that board diversity, including gender and professional experience, leads to better firm performance. Nguyen et al. [103], in their study of 75 Vietnamese firms, show how boards with diverse experiences contribute to firms' adaptability and financial success, which the longer tenures and diverse professional backgrounds enhance decision-making quality, resilience, and strategic adaptation, improving overall performance.

Research supports the notion that board experience's duration and diversity positively correlated with firm performance. For example [104], find that directors with longer board tenure bring valuable advisory capabilities, improving performance. Howton [105] reports that long-tenured board members enhance firm resilience and survival. Fernández -Temprano and Tejerina-Gaite [106], analysing Spanish companies using structural equation modelling, also indicate that board members with extensive experience contribute positively to financial performance. However, tenure can introduce challenges; longer board terms may decrease independence, with directors becoming resistant to new ideas and entrenched in established practices [107, 108]. This rigidity may lead to decision-making influenced by entrenched beliefs and established patterns, potentially limiting innovation and adaptability [109, 110].

Given the critical role of tenure in board knowledge, it is expected that longer tenures can positively influence performance, especially for outside directors who bring fresh insights. By contrast, with daily exposure to firm operations, internal directors may be more susceptible to tenure-related drawbacks, such as a tendency to adhere to conventional practices.

Based on these theoretical insights and empirical findings, the following hypothesis is proposed:

**H3:** *There is a positive effect of board experience diversity on firm performance.*

# 3 Methodology

## 3.1 Sample selection and data sources

This study examines the relationship between board diversity and financial performance within the insurance and banking sectors listed on the Palestine Stock Exchange. The exchange features a total of 48 companies. The initial sample consisted of 16 companies, comprising 8 banking institutions and 8 insurance firms. However, three listed companies were excluded due to insufficient data availability. Consequently, a final sample of 13 companies was selected, which included 6 banks and 7 insurance companies. The study period spans 2011–2022, ensuring a comprehensive decade-long dataset. Data on board characteristics—such as age, nationality, and experience—alongside financial performance indicators were gathered from primary sources, including annual reports published on company websites and the Palestine Stock Exchange. A content analysis approach was applied to extract data on board characteristics and performance indicators systematically. This method is guided by governance literature and includes insights from prior empirical studies on board diversity and its potential impact on firm performance.

## 3.2 Variable measurement

The study's primary dependent variable is financial performance, assessed using Return on Assets (ROA) and Return on Equity (ROE), two widely accepted indicators that reflect a firm's profitability and operational efficiency [111]. ROA measures the company's ability to generate profit relative to its total assets, while ROE evaluates the return on shareholders' equity, thereby offering a comprehensive view of firm performance.

The independent variables include age, nationality, and experience diversity among board members. Board age diversity is measured by calculating the proportion of board members under 40 years of age relative to the total number of board members, following methodologies used by [112]. This measurement reflects the potential influence of age-related generational perspectives within the boardroom. Board nationality diversity is assessed by the ratio of foreign board members to the total number of board members, with this approach aligning with studies that associate diverse national backgrounds with global market insights and enhanced decision-making quality [113, 114]. Board experience diversity is calculated based on the proportion of board members with at least five years of experience in a related field, thus capturing the depth of industry-specific expertise present within the board [115, ].

Several control variables were included to account for other factors influencing firm performance: board independence, firm size, financial leverage, and board size. Board independence is determined by the ratio of non-executive members to the total board size, a metric commonly used to assess the degree of independent oversight within governance structures [113, 116]. Firm size is measured by the natural logarithm of total assets, representing larger organisations' potential economies of scale and resource capacity [117]. Financial leverage, calculated as the ratio of total liabilities to total assets, captures the effect of the company's capital structure on financial performance, as suggested by prior studies [116]. Finally, board size, representing the total number of directors on the board, serves as an additional control variable, as larger boards are often associated with increased diversity of perspectives, though they may also introduce coordination challenges.

Table 1 summarises the study variables, their measurements, and relevant reference sources.

## 3.3 Regression model

The following multiple regression model is used to examine the impact of the board diversity on the financial performance of banks and insurance companies listed on PEX:

$$\text{Financial performance (ROA/ROE)} = \alpha + \beta 1\ \text{BAGE} + \beta 2\ \text{BNAT} + \beta 3\ \text{BEXP} + \beta 4\ \text{BIND} + \beta 5\ \text{SIZE} + \beta 6\ \text{LEV} + \beta 7\ \text{BSIZ} + \varepsilon$$

Table 1 identifies the dependent, independent and control variables; βk are the regression coefficients, and $\varepsilon$ is the error term or regression residual.

**Table 1** Variables measurement

| Variable | Label | Measurement description | References | Type |
|---|---|---|---|---|
| Financial performance | ROA, ROE | Ratio of net income to total assets. Ratio of net income to total equity | [113, 123, 124] | Dependent |
| Board age diversity | BAGE | Ratio of board members under 40 years to total board members | [112, 125] | Independent |
| Board nationality diversity | BNAT | Ratio of foreign members to total board members | [113, 114, 116, 126] | Independent |
| Board experience diversity | BEXP | Ratio of board members with at least 5 years of experience in a related field to total board members | [115, ] | Independent |
| Board independence | BIND | Ratio of non-executive members to total board members | [110, 127] | Control |
| Firm size | SIZE | Natural logarithm of total assets | [128, 129] | Control |
| Financial leverage | LEV | Ratio of total liabilities to total assets | [55, 116, 117] | Control |
| Board size | BSIZ | Total number of board members | [130–132] | Control |

**Table 2** Descriptive statistics

| Variable | Obs | Mean | Std. Dev | Min | Max |
|---|---|---|---|---|---|
| ROA | 156 | 0.019 | 0.022 | −0.057 | 0.088 |
| BAGE | 156 | 0.023 | 0.061 | 0.000 | 0.333 |
| BNAT | 156 | 0.253 | 0.238 | 0.000 | 0.800 |
| BEXP | 156 | 0.743 | 0.188 | 0.182 | 1.000 |
| BSIZ | 156 | 9.340 | 1.823 | 5.000 | 13.000 |
| BIND | 156 | 0.935 | 0.090 | 0.667 | 1.000 |
| LEV | 156 | 0.721 | 0.172 | 0.318 | 0.979 |
| SIZE | 156 | 19.212 | 1.579 | 16.523 | 22.593 |

**Table 3** Matrix of correlations

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| (1) ROA | 1.000 | | | | | | | |
| (2) BAGE | −0.026 | 1.000 | | | | | | |
| (3) BNAT | 0.036 | 0.319 | 1.000 | | | | | |
| (4) BEXP | 0.103 | 0.114 | 0.365 | 1.000 | | | | |
| (5) BSIZ | −0.179 | −0.531 | −0.298 | −0.150 | 1.000 | | | |
| (6) BIND | −0.202 | −0.343 | −0.540 | −0.516 | 0.485 | 1.000 | | |
| (7) LEV | −0.161 | −0.111 | −0.126 | 0.111 | 0.060 | 0.025 | 1.000 | |
| (8) SIZE | −0.325 | −0.266 | −0.087 | −0.081 | 0.586 | 0.451 | 0.065 | 1.000 |

# 4 Results

## 4.1 Descriptive and correlation

Table 2 presents the descriptive statistics for the study variables across the sample of 156 observations. The average Return on Assets (ROA) is 0.019, with a standard deviation of 0.022, indicating moderate variability in firm profitability. Age diversity (BAGE) is relatively low, with an average of 0.023, suggesting a limited range of ages within boards. Nationality diversity (BNAT) averages 0.253, highlighting that, on average, 25.3% of board members are of foreign nationality, with some firms showing no foreign representation while others have up to 80%.

Experience diversity (BEXP) shows a higher mean of 0.743, indicating that the majority of board members possess significant relevant experience. The average board size (BSIZ) is approximately 9 members, with board sizes ranging from 5 to 13. Board independence (BIND) is high, averaging 0.935, suggesting that many directors are non-executive members.

Regarding control variables, the mean financial leverage (LEV) is 0.721, indicating a typical debt-to-asset ratio, while the average firm size (SIZE), measured as the natural logarithm of total assets, is approximately 19.212, with a range between 16.523 and 22.593. These statistics provide a broad overview of the sampled firms' board characteristics and financial structure.

Table 3 presents the Pearson correlation coefficients, assessing potential multicollinearity among the study variables. The strongest correlation observed is 0.586 between BSIZ and SIZE. Other variable correlations range from low to moderate, remaining below the critical threshold of 0.70. These findings suggest that multicollinearity is unlikely to pose an issue for testing the study's hypotheses.

## 4.2 Regression analysis

Using data from 2011 to 2022, the regression analysis provides critical insights into the impact of board diversity on the financial performance of banks and insurance companies listed on the Palestine Stock Exchange (PEX). The Hausman test was applied to determine the appropriate model, with results favouring a fixed-effects model due to a p-value below the 5% significance threshold.

Table 4 presents the results across three model specifications, each designed to strengthen the robustness and reliability of findings on the relationship between board diversity and financial performance within Palestinian financial institutions. Models 1 and 2 employed a dummy variable approach to control for time and industry-fixed effects, respectively, while Model 3 used the within estimator to capture firm-specific effects alongside time-fixed effects. All models apply robust standard errors corrected for heteroskedasticity, and the R-squared values range from 24.8 to 48.3%, indicating moderate to explanatory solid power.

The regression results in Table 4 indicate that age diversity negatively affects financial performance, as measured by ROA, suggesting that younger board members may have a detrimental impact on financial outcomes. This finding aligns with the positive effect of board experience diversity on financial performance, underscoring the importance of relevant industry experience in driving financial success. However, nationality diversity does not exhibit a statistically significant impact on financial performance. These results provide valuable insights into how specific board composition factors influence firm performance within the Palestinian financial sector.

The first hypothesis (H1) posited that age diversity within boards would positively impact firm performance (ROA). However, contrary to expectations, the results reveal a negative association ($\beta = -0.067$, $p < 0.05$), leading to rejection H1. This finding suggests that boards with younger members may face challenges in effectively enhancing firm performance. While age diversity often brings together innovative ideas from younger members and stability from older members [57], the observed negative effect could imply that younger board members may lack the experience necessary for sound, informed decision-making, particularly in financial institutions where strategic stability is critical. This aligns with previous studies' concerns that age diversity, particularly in the absence of extensive industry experience, might lead to fragmented communication and group cohesion issues [62, 63]. Thus, in financial institutions like banks and insurance firms, the presence of younger board members may introduce complexities that hinder the streamlined, cohesive decision-making processes needed to manage market risks and regulatory challenges.

The second hypothesis (H2) tested whether nationality diversity among board members positively affects firm performance, proposing that foreign directors bring valuable international perspectives that can enrich decision-making and align firms with global market standards. However, the results do not indicate a significant association between nationality diversity and financial performance ($\beta = 0.057$, $p < 0.10$), resulting in rejecting H2. This lack of significance suggests that, within Palestinian financial institutions, nationality diversity does not necessarily translate into measurable financial benefits. The mixed evidence on nationality diversity in prior literature underscores this result; while some studies highlight the benefits of cultural diversity for creative problem-solving and resource acquisition [73, 74], others caution that it may lead to cultural misunderstandings and coordination challenges that impede effective governance [45, 88]. Specifically, nationality diversity may present complexities in contexts like Palestine, where cross-cultural communication barriers could detract from board unity and weaken the board's ability to make cohesive strategic decisions [89, 92].

**Table 4** The impact of board diversity on financial performance (ROA)

| | (1) | (2) | (3) |
|---|---|---|---|
| VARIABLES | ROA | ROA | ROA |
| BAGE | −0.056 (0.044) | −0.036 (0.044) | −0.070** (0.060) |
| BNAT | 0.002 (0.007) | 0.011 (0.007) | 0.057* (0.026) |
| BEXP | 0.013* (0.014) | 0.008* (0.013) | 0.029** (0.014) |
| BSIZ | 0.004 (0.014) | 0.002 (0.014) | 0.005* (0.012) |
| BIND | 0.002* (0.032) | 0.013* (0.034) | 0.059** (0.055) |
| LEV | −0.020** (0.009) | −0.023** (0.009) | −0.076*** (0.024) |
| SIZE | 0.004*** (0.001) | 0.006** (0.002) | 0.004** (0.009) |
| Constant | 0.121*** (0.036) | −0.085 (0.062) | −0.121 (0.156) |
| Year | Yes | Yes | Yes |
| Industry | No | Yes | Yes |
| Firm | No | No | Yes |
| Observations | 156 | 156 | 156 |
| R-squared | 0.248 | 0.331 | 0.483 |
| Number of ID | 13 | 13 | 13 |

* Robust standard errors are in parentheses; **p < 0.05, p < 0.1; ***p < 0.01

The third hypothesis (H3) proposed that experience diversity within boards would positively impact financial performance, based on the idea that directors with varied and extensive backgrounds bring a wealth of industry-specific insights that enhance governance quality. The results support this hypothesis ($\beta = 0.0296$, $p < 0.05$), indicating a significant positive association between experience diversity and ROA. This finding aligns with the Upper Echelons theory, which posits that the cognitive diversity brought by experienced directors can enhance decision-making and provide a competitive edge [99, 100]. Directors with substantial experience tend to comprehensively understand industry-specific dynamics, enabling them to make well-informed decisions that contribute to the firm's strategic resilience and adaptability. In the context of Palestinian banks and insurance companies, the positive impact of experience diversity is particularly relevant as it suggests that boards with members with extensive industry knowledge can better navigate regulatory complexities and market volatilities, directly contributing to improved financial outcomes.

Regarding control variables, the analysis reveals nuanced effects on financial performance. Board size did not significantly affect ROA, indicating that simply increasing the number of board members may not enhance financial outcomes in this context. This result aligns with findings in the literature that larger boards can introduce coordination challenges without necessarily improving governance quality [112]. Conversely, board independence significantly affects ROA ($p < 0.05$), suggesting that a higher proportion of non-executive directors contributes to enhanced oversight and reduced agency conflicts. This finding supports agency theory, as independent directors may prioritise shareholder interests more effectively, enhancing governance and improving financial performance.

Financial leverage shows a significant negative association with ROA ($\beta = -0.313$, $p < 0.05$), suggesting that higher debt levels may hinder financial performance in Palestinian financial institutions. This aligns with existing research indicating that financial institutions often find it more efficient to manage resources internally rather than through the debt market, as increased leverage can add financial risk and limit operational flexibility [60]. Finally, firm size exhibits a significant positive effect on ROA ($p < 0.05$), indicating that larger firms, likely due to their greater resource base and market influence, experience enhanced financial performance. This suggests that economies of scale and access to resources contribute to the financial success of larger institutions in this sector.

## 4.3 Robustness tests

### 4.3.1 Alternative measure of financial performance

To further ensure the robustness of our findings, we conducted an additional test using an alternative measure of financial performance, Return on Equity (ROE). The results in Table 5 demonstrate consistency with the primary findings reported in Table 4. This alignment suggests that our conclusions regarding the effects of board diversity and control variables on financial performance remain robust, regardless of the specific financial performance metric

**Table 5** The impact of board diversity on financial performance (ROE)

| | (1) | (2) | (3) |
|---|---|---|---|
| VARIABLES | ROE | ROE | ROE |
| BAGE | −0.294** (0.135) | −0.243* (0.135) | −0.241** (0.202) |
| BNAT | 0.024 (0.030) | 0.046 (0.030) | 0.074 (0.101) |
| BEXP | 0.001* (0.054) | 0.011* (0.052) | 0.056** (0.063) |
| BSIZ | 0.011 (0.057) | 0.028 (0.056) | 0.008 (0.050) |
| BIND | −0.065 (0.131) | −0.026 (0.136) | 0.175 (0.223) |
| LEV | −0.004* (0.035) | −0.004* (0.035) | −0.110** (0.104) |
| SIZE | 0.006* (0.007) | 0.020* (0.011) | 0.018* (0.043) |
| Year | Yes | Yes | Yes |
| Industry | No | Yes | Yes |
| Firm | No | No | Yes |
| Constant | 0.289** (0.141) | −0.237 (0.236) | −0.379 (0.750) |
| Observations | 156 | 156 | 156 |
| R-squared | 0.150 | 0.188 | 0.278 |
| Number of ID | 13 | 13 | 13 |

* Robust standard errors are in parentheses; **p < 0.05, p < 0.1; ***p < 0.01

used. The consistency across ROA and ROE reinforces the reliability of our results and supports the robustness of the study's main findings.

#### 4.3.2 Control for endogeneity

Endogeneity presents a persistent challenge in CG research, where complex interdependencies between variables often confound causal relationships [110, 118]. This issue is particularly pronounced in studies examining the impact of board diversity on financial performance, as diversity characteristics may both influence and be influenced by firm performance outcomes. To address these methodological concerns, this study employs the two-step system Generalized Method of Moments (GMM) estimator, a robust approach specifically designed for dynamic panel data analysis [118, 119].

The necessity of using GMM in CG research stems from its ability to handle endogeneity, a common problem in this field. Traditional estimation methods, such as OLS or fixed effects, often fall short in accounting for the bidirectional relationships and omitted variable bias that are prevalent in CG studies [120, 121]. GMM addresses these limitations by leveraging internal instruments—such as lagged values of the dependent and endogenous variables—to account for simultaneity and dynamic relationships. For example, past financial performance is likely to influence current governance decisions, while governance changes, in turn, affect performance outcomes. GMM allows us to separate these dynamics effectively, providing more reliable estimates.

Moreover, GMM is well-suited for the characteristics of our dataset, which includes a moderate number of firms observed over multiple years. This structure creates challenges for static panel estimators but is ideal for system GMM, which combines equations in both levels and differences to improve efficiency [122]. Additionally, the technique accounts for unobserved firm-specific effects and potential heteroscedasticity, which are common in CG studies [121]. These methodological strengths make GMM particularly valuable in exploring complex relationships like those between board diversity and financial performance.

Table 6 presents the GMM results, which align closely with the main findings outlined in Tables 4, and 5 thus confirming the robustness of the baseline model results. The inclusion of lagged ROA and ROE terms in the GMM model underscores the importance of past financial performance as a significant determinant of current-period outcomes.

**Table 6** Two step system GMM

| Variables | (1)<br>ROA | (2)<br>ROE |
|---|---|---|
| L.ROA | 0.176** (0.289) | |
| L.ROE | | 0.878* (0.529) |
| BAGE | −0.043** (0.039) | −0.303* (0.423) |
| BNAT | 0.0941 (0.007) | 0.018 (0.059) |
| BEXP | 0.008* (0.011) | 0.048* (0.068) |
| BSIZ | 0.007* (0.012) | 0.006 (0.021) |
| BIND | 0.049 (0.038) | 0.174 (0.385) |
| LEV | −0.017* (0.018) | −0.054* (0.096) |
| SIZE | 0.009** (0.003) | 0.013* (0.048) |
| Year | Yes | Yes |
| Industry | Yes | Yes |
| Constant | 0.201*** (0.064) | 0.612** (0.684) |
| Observations | 143 | 143 |
| Number of ID | | |
| Arellano–Bond test for AR (1) p-value | 0.039 | 0.045 |
| Arellano–Bond test for AR (2) p-value | 0.556 | 0.687 |
| Sargan-Hansen test of over-identification p-value | 0.393 | 0.485 |

* Robust standard errors are in parentheses; **p < 0.05, p < 0.1; ***p < 0.01

## 5 Conclusion

This study examines the influence of board diversity—specifically, age, nationality, and experience—on the financial performance of Palestinian financial institutions listed on the Palestine Stock Exchange (PEX). Using data from a sample of 13 banks and insurance companies from 2011 to 2022, this research provides insights into how specific board characteristics affect governance outcomes. Focusing on ROA and ROE as performance indicators, the analysis explores the impact of board composition on financial results within the Palestinian banking and insurance sectors.

The findings reveal a complex relationship between board diversity and firm performance. Age diversity was found to negatively impact performance, suggesting that boards with younger members may encounter challenges in fostering cohesive and effective decision-making. This outcome highlights that younger directors despite their potential for introducing innovation, might lack the depth of experience needed for strategic governance in the highly regulated financial sector, where stability and industry familiarity are paramount.

Nationality diversity, or the presence of foreign directors, also showed no significant effect on financial performance in this context. While nationality diversity can theoretically introduce broader perspectives and global insights, it may also create barriers to cohesion and consistent decision-making, especially in financial institutions. The findings suggest that cultural and communication differences may detract from the intended benefits of having a diverse board in terms of national representation, underlining the need for tailored integration strategies if nationality diversity is to be effectively leveraged.

Experience diversity, however, was positively associated with financial performance, indicating that directors with extensive industry experience are critical assets in contributing to financial success. Experienced directors are likely to bring strategic insights, valuable networks, and a deep understanding of industry dynamics, which collectively enhance the board's ability to make well-informed decisions that benefit the firm's performance.

The practical implications of these findings are substantial for corporate governance practices, particularly within financial institutions in developing markets. First, the positive association between experience diversity and firm performance highlights the importance of prioritising industry-specific expertise during board appointments. Financial institutions should focus on recruiting board members who possess relevant experience, as this aligns with the sector's need for stability, risk management, and regulatory compliance. This approach could enhance strategic oversight, ensure adherence to financial regulations, and better equip the board to address the unique challenges of the financial industry.

Furthermore, while age diversity may bring innovative perspectives, firms need to balance youth with seasoned experience to maintain board effectiveness. Governance policies might benefit from specifying guidelines on age diversity that prioritise a mix of age groups to foster a range of viewpoints while still maintaining the stability and insight provided by experienced members. Financial institutions should approach age diversity cautiously, emphasising a balance that enhances governance without introducing risks associated with inexperienced decision-making.

The findings also suggest that nationality diversity may require targeted strategies to be effective. For firms in Palestine and similar markets, it may be valuable to integrate nationality diversity to support cultural coherence on the board, potentially through training programs or collaborative frameworks that foster clear communication and mutual understanding. Policymakers and regulatory bodies could consider guidelines for board diversity that encourage foreign representation where it adds value but also ensure that such diversity does not compromise board unity or impede efficient decision-making.

The study contributes to corporate governance theory by providing nuanced insights into how different dimensions of board diversity influence financial outcomes in financial institutions. It expands Agency Theory by demonstrating that experience diversity effectively enhances governance, as directors with relevant backgrounds can better align with shareholder interests and provide meaningful oversight. Additionally, the findings related to age and nationality diversity contribute to Upper Echelons Theory by emphasising that the cognitive frameworks brought by board members can have both beneficial and challenging impacts on firm performance, depending on the board's composition. Resource Dependence Theory is also supported, particularly in the context of experience diversity, as the presence of experienced directors helps secure access to valuable knowledge and networks that strengthen the firm's strategic resilience and adaptability.

Despite its contributions, this study has limitations that suggest directions for future research and practical applications. Scientifically, the focus on short-term performance indicators, specifically Return on Assets (ROA) and

Return on Equity (ROE), offers valuable insights but does not capture the potential long-term effects of board diversity on firm value. Future studies could incorporate forward-looking measures, such as Tobin's Q, market capitalization growth, or Environmental, Social, and Governance (ESG) metrics, for a more comprehensive understanding of diversity's impact. Additionally, this study primarily examines age, nationality, and experience diversity, leaving room for future research to investigate other governance attributes, such as committee structures, compensation practices, and ownership types, to enrich theoretical frameworks and further understand governance dynamics. Practically, although the findings provide useful insights for policymakers and leaders within the Palestinian financial sector, the narrow focus on this context limits broader applicability. Thus, expanding the study to other sectors and regions, particularly in emerging or frontier markets, could reveal the diverse influence of board diversity across varied economic and regulatory environments. Moreover, Future research could inform policymakers on diversity-driven governance reforms suited to specific cultural and economic contexts while providing organizational leaders with strategies to leverage diversity in addressing contemporary governance challenges like sustainability, digital transformation, and stakeholder engagement.

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